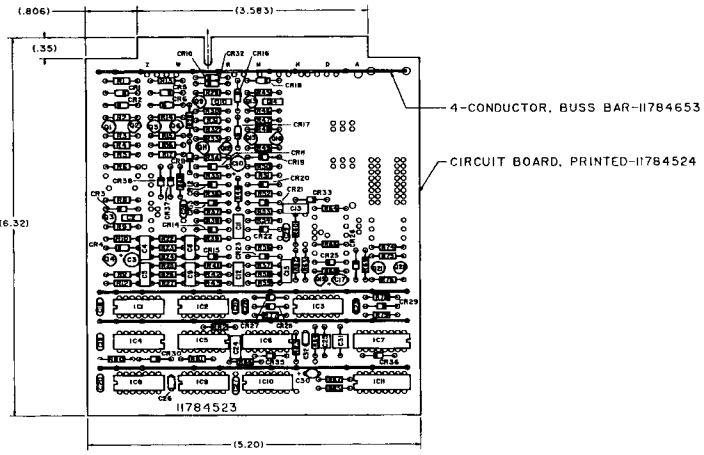
DRAWING SIZE F

NOTES:

1. SPEC MIL-F-13926 AND ANSI Y14.5-1973 APPLY.
2. SOLDER PER MIL-STD-2000, NO TASKS.
3. APPLY A UNIFORM COATING, .001 MIN THICK, OF INSULATION COMPOUND, ELECTRICAL, TYPE UR, SPEC MIL-I-46058, EXCEPT CONNECTOR FINGERS, BOTH SIDES OF THE BOARD.
4. COMPONENT DESIGNATIONS ARE SHOWN IN APPROXIMATE LOCATIONS.
5. FOR COMPONENT LIST, SEE SHEET 2.
6. FOR ELECTRICAL SCHEMATIC SEE DRAWING 11784525.
7. SPEC MIL-C-71042 APPLIES.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F61403	861209	
A	INC NOR D814523 88-11-29 (ECP D814536 89-01-10, ECP D814548 89-01-10)	89-04-24	
B	INC NOR D814318 89-04-17	89-07-26	
C	INC NOR D812028 89-08-15 (ECP D914369 89-07-11)	89-11-03	
D	INC NOR D814454 89-12-18	90-04-03	
E	INC NOR D013020 90-08-19 (ECP D013124 91-01-08) (ECP D012082 91-01-08)	92-11-10	
F	INC NOR D012032 92-01-02	92-02-24	



F	F
SHEET 1	SHEET 2
REVISION STATUS OF SHEETS	

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

PART NO. 11784523

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

79-12-14

11784504

APPLICATION

CIRCUIT CARD ASSEMBLY, LOGIC

F 19200 11784523

SCALE 2/1 SHEET 1 OF 2

SMCAR FORM 69, 1 JUN 68(TEMP) REPLACES SMCAR FORM 69, 1 FEB 65, WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE D

REF DES	PART NO. OR TYPE DESIGNATOR	SPEC NO.	REMARKS	NO. REQD
C2	11784596-2			1
C3	11784591-2			1
C4, C5, C8, C9, C11, C12, C13, C15, C24	11784596-4			9
C10	11784592-2			1
C17	11784590-2			1
C18, C19, C20, C27, C28, C29	11784596-3			6
C21, C22, C23, C26	M39014/01 -1231	MIL-C-39014/01		4
C25	11784593-1			1
C30	11784591-1			1
C31	11784593-2			1
C32	M39014/01 -1213	MIL-C-39014/01		1
CR1, CR2, CR5, CR6, CR10, CR16, CR17, CR18, CR32	11784693			9
CR3, CR9, CR11, CR12, CR13, CR14, CR15, CR19, CR20, CR21, CR22, CR23, CR25, CR26, CR27, CR28, CR29, CR30, CR33, CR35, CR36, CR37, CR38	1N4148	MIL-S-19500/116		23
CR4	11784696			1
IC1, IC2, IC3, IC8	9356087-1			4
IC4, IC10	11784683-2			2
IC5	9356087-2			1
IC6, IC9	9356087-3			2

REF DES	PART NO. OR TYPE DESIGNATOR	SPEC NO.	REMARKS	NO. REQD
IC7	9356087-4			1
IC11	11784682			1
Q1, Q5, Q21	11784688			3
Q2, Q3, Q4, Q6, Q9, Q11, Q12, Q13, Q15, Q16, Q19	11784687			11
Q10, Q14	11784689			2
Q22	11784690			1
R1, R13	RCR07G100JM	MIL-R-39008/1		2
R2, R14, R31	RCR07G272JM	MIL-R-39008/1		3
R3, R5, R6, R15, R17	RCR07G472JM	MIL-R-39008/1		5
R4, R16, R37, R39, R56, R82	RCR07G104JM	MIL-R-39008/1		6
R8, R9, R22, R28, R48, R62, R69, R88	RCR07G103JM	MIL-R-39008/1		8
R10	RCR07G271JM	MIL-R-39008/1		1
R11, R12, R26, R27, R34, R36, R38, R49, R50, R52, R54, R63	RCR07G223JM	MIL-R-39008/1		12
R23, R24, R25, R29, R43, R44, R45, R57, R60, R64, R66, R74, R75, R87	RCR07G102JM	MIL-R-39008/1		14
R30, R41, R46	RCR07G471JM	MIL-R-39008/1		3
R32, R35, R47, R51	RCR07G473JM	MIL-R-39008/1		4
R33	RCR07G682JM	MIL-R-39008/1		1

REF DES	PART NO. OR TYPE DESIGNATOR	SPEC NO.	REMARKS	NO. REQD
R42, R58, R68	RCR07G221JM	MIL-R-39008/1		3
R53, R76	RCR07G683JM	MIL-R-39008/1		2
R59, R77, R78, R79, R80, R81, R83, R85, R86	RCR07G184JM	MIL-R-39008/1		9
R84	RCR07G274JM	MIL-R-39008/1		1

C2	M39014/01-1450	MIL-C-39014/1	ALT	1
C4, C5, C8, C9, C11, C12, C13, C15, C24	M39014/01-1468	MIL-C-39014/1	ALT	9
C18, C19, C20, C27, C28, C29	M39014/01-1456	MIL-C-39014/1	ALT	6
C25	CCR05CG681GR	MIL-C-20/35	ALT	1
C31	CCR05CG152FR	MIL-C-20/35	ALT	1
R1, R13	RL07S100J	MIL-R-22684/1	ALT	2
R2, R14 R31	RL07S272J	MIL-R-22684/1	ALT	3
R3, R5, R6 R13, R17	RL07S472J	MIL-R-22684/1	ALT	5
R4, R16 R37, R39 R56, R82	RL07S104J	MIL-R-22684/1	ALT	6
R8, R9 R22, R28 R48, R62 R69, R88	RL07S103J	MIL-R-22684/1	ALT	8
R10	RL07S271J	MIL-R-22684/1	ALT	1
R23, R24 R25, R29 R43, R44 R45, R57 R60, R64 R66, R74 R75, R87	RL07102J	MIL-R-22684/1	ALT	14
R30, R41 R46	RL07S471J	MIL-R-22684/1	ALT	3
R32, R35 R47, R51	RL07S473J	MIL-R-22684/1	ALT	4
R33	RL07S682J	MIL-R-22684/1	ALT	1
R42, R58 R68	RL07S221J	MIL-R-22684/1	ALT	3
R53, R76	RL07S683J	MIL-R-22684/1	ALT	2
R84	RL07S274J	MIL-R-22684/1	ALT	1

NOTE: MIL-STD-883 APPLIES FOR IC'S 1-3 AND 5-9.

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D8I4523 88-11-29 (ECP D8I4536 89-01-18, ECP D8I4546 89-01-18)	89-04-24	
B	INC NOR D8I4318 89-04-17	89-07-26	
C	INC NOR D8I2028 88-08-15 (ECP D9I4359 89-07-11)	89-11-03	
E	INC NOR D0I3020 90-08-19 (ECP D0I3124 91-01-09) (ECP D0I2092 91-01-09)	92-11-10	
F	INC NOR D1I2032 92-01-02	93-02-24	

PART NO. SEE SHEET 1

MECHANICAL PROPERTIES	DO NOT SCALE DRAWING	ORIGINAL DATE OF DRAWING 79-12-14
TERMINAL FILTER THMTG	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAFTSMAN MR / CHECKER GME
NEXT ASSY / USED ON	TOLERANCES ON DECIMALS ± — FRACTIONS ± — ANGLES ± —	
APPLICATION	THIRD ANGLE PROJECTION	

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, DOVER, NEW JERSEY 07806-5000

CIRCUIT CARD ASSEMBLY, LOGIC

SIZE D | FSCM NO. 19200 | 11784523 | SCALE — | WGT WT. | SHEET 2

CAGE REV A

SMCAR FORM 68, 1 JUN 86(TEMP) REPLACES SMCAR FORM 68, 1 FEB 85, WHICH MAY BE USED UNTIL EXHAUSTED

SPECIAL PACKAGING INSTRUCTIONS (AMCCOM Suppl 1 to AR 700-15)			1. NATIONAL STOCK NO 5999012044175
2. SPI NO (AM) P11784523		3. REVISION A/G5K2040	4. DATE 11/13/95
5. PART OR DRAWING NO 11784523		6. FSCM 19200	7. MIL-P-116 CLEANING/DRYING * MIL-P-116
8. QUP/UNIT OF ISSUE 1 - ea	9. ICQ	10. UNIT PACK WEIGHT (APPROX LB) .55	11. UNIT PACK CUBE (EXT) (APPROX FT³) .009	12. UNIT PACK SIZE (EXT) (APPROX FT) .53 X .44 X . 04

13. LEVEL A UNIT PACK REQUIREMENTS

MIL-P-116 METHOD IA-15	STEPS	DRAWING OR SPECIFICATION	STYLE	TYPE	GRADE	CLASS	SIZE (INSIDE DIMENSIONS IN INCHES) AND REMARKS
	1	DWG. 9370051					SEE NOTE (A)

14a. LEVEL B: METHOD _____ ☐ NOT APPLICABLE ☒ SEE NOTE MIL-STD-2073-1

14b. LEVEL C: METHOD _____ ☐ NOT APPLICABLE ☒ SEE NOTE ASTM-D-3951

15. INTERMEDIATE PACKAGING AND PACKING WILL BE IN ACCORDANCE WITH SPECIFICATION MIL-STD-2073-1 OR AS OTHERWISE SPECIFIED HEREON.

16. MARKING WILL BE IN ACCORDANCE WITH MIL-STD-129.

17. SPECIFICATIONS, STANDARDS, AND DRAWINGS LISTED HEREON OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID FORM A PART OF THIS DATA SHEET. THE APPLICABLE GENERAL AND REFERENCED REQUIREMENTS OF SPECIFICATION MIL-STD-2073-1 FORM PART OF THIS DATA SHEET. UNLESS OTHERWISE SPECIFIED, MATERIALS WILL BE MINIMUM SIZE IAW MIL-STD-2073-1.

18. TOLERANCES SHALL BE IN ACCORDANCE WITH MATERIAL SPECIFICATIONS. QUALITY PERFORMANCE AND TESTING REQUIREMENTS SHALL BE IN CONFORMANCE WITH MIL-P-116 OR AS OTHERWISE SPECIFIED HEREON.

19. NOTES/DRAWINGS

* UNLESS OTHERWISE SPECIFIED, ANY APPLICABLE PROCESS OF MIL-P-116 THAT DOES NOT DAMAGE THE ITEM SHALL BE UTILIZED.

(A) PACKAGING, PACKING AND MARKING SHALL BE IN ACCORDANCE WITH DWG. 9370051.

POOR ORIGINAL

20. ITEM IDENTIFICATION CODE(S)	21. ITEM SIZE	22. ITEM WT	23. APPROVED
JR	6.32 X 5.20 X .50	.50	EUGENE FARRELL

24. NOMENCLATURE CIRCUIT CARD

Page 1 of 1 Pages

DISTRIBUTION STATEMENT A: UNLIMITED

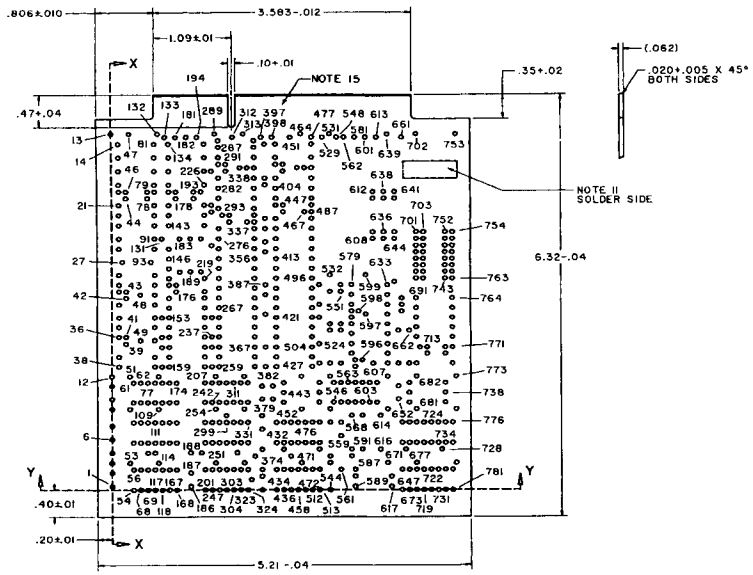
11784523_19200_PS_A_0001_0001_N_U
November 15, 2000 12:40 AM

11784524_19200_--_E_0001_0001_N_U
November 15, 2000 12:40 AM

DRAWING SIZE F

FOR NOTES SEE SHEET 2

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F8I4013	861209	
A	INC NOR D9I4454 89-12-18	90-04-09	
B	INC NOR D0I3034 89-05-18 (ECP D0I3096 90-06-14)	90-11-12	
C	INC NOR D0I3020 90-08-10 (ECP D0I2082 91-01-08)	92-11-06	
D	NOR D1I4145 920102 (ECP D1I3122 911212) (ECP D2I3039 930126)	940114	
E	NOR D9I4075 951212	960301	HJS



E	E	D	D	D	D	D	D
SH 1	SH 2	SH 3	SH 4	SH 5	SH 6	SH 7	SH 8
REVISION STATUS OF SHEETS							

PART NO. 11784524

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

80-04-07

CIRCUIT BOARD, PRINTED

11784523 THMTG

APPLICATION

F 19200 11784524

SCALE 2/1 SHEET 1 OF 8

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

SMCAR FORM 69, 1 JUN 86(TEMP) REPLACES SMCAR FORM 69, 1 FEB 85, WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE C 4 3 2 1

NOTES:-

1-SPEC MIL-A-2550 AND MIL-P-55110 APPLY.

2-MATERIAL:- PLASTIC SHEET. LAMINATED COPPER-CLAD. TYPE GFN0620C2/C2A1A, SPEC MIL-P-13949/4. OR IPC-L-115/040590C2/C2AA3 PER IPC-L-115.

3-THRU CONNECTIONS TO BE FORMED BY PLATED THRU HOLES IN ACCORDANCE WITH NOTES A,B & C BELOW. HOLE SIZES APPLY AFTER PLATING.

A. ELECTROLESS COPPER PLATING. AN ELECTROLESS COPPER DEPOSITION SYSTEM SHALL BE USED AS A PRELIMINARY PROCESS FOR PROVIDING THE CONDUCTIVE LAYER OVER NONCONDUCTIVE MATERIALS FOR SUBSEQUENT ELECTRO-DEPOSITION OF PLATED-THRU HOLES.

B. ELECTROLYTIC COPPER PLATING. ELECTROLYTICALLY DEPOSITED COPPER PLATING .001 MIN THICK IN THE HOLES, INCLUDING COPPER STRIKES WHEN REQUIRED BY PROCESS, SHALL BE PERFORMED IN ACCORDANCE WITH MIL-C-14550. AND SHALL HAVE A MINIMUM PURITY OF 99.5 PERCENT AS DETERMINED BY ASTM E53-48.

C. PLATED-THRU HOLE VOIDS. THE PLATED-THROUGH HOLE SHALL NOT HAVE MORE THAN THREE PLATING VOIDS. THE TOTAL OF THE HORIZONTAL DIMENSION OF EACH VOID SHALL NOT EXCEED 10% OF THE CIRCUMFERENCE OF THE HOLE.THE TOTAL OF THE VERTICAL DIMENSION OF EACH VOID SHALL NOT EXCEED 25% OF THE BOARD THICKNESS.NO VOIDS SHALL BE ALLOWED AT THE INTERFACE WITH A CONDUCTOR OR TERMINAL AREA. THE INTERFACE AREA SHALL BE CONSIDERED TO EXTEND INTO THE HOLE BELOW THE OUTER COPPER SURFACE A DISTANCE OF 1.5 TIMES THE TOTAL COPPER THICKNESS OF THE SURFACE.

4-THE TOP SURFACE OF CONDUCTIVE PATTERNS AND THE WALLS OF PLATED-THRU HOLES SHALL BE HOMOGENEOUSLY COVERED (WITHOUT PITTING, PIN HOLES, ETC.) WITH:

A.SOLDER COATING, COMPOSITION SN60 OR SN63 PER QQ-S-571. .0001 INCH (MIN) THICK IN HOLES AND .0003 INCH (MIN)THICK ON CONDUCTIVE PATTERNS (MEASURED AT CREST).

OR

B.TIN-LEAD PLATING CONTAINING 50% TO 70% TIN CONTENT AND FOLLOWED BY A FUSING PROCESS. .0001 INCH MIN THICK IN HOLES AND .0003 MIN THICK ON CONDUCTIVE PATTERNS. (MEASURED AT CREST).

5-MASTER PATTERNS SHEET 6 (COMPONENT) AND SHEET 7 (SOLDER) SHALL BE USED FOR THE CONDUCTIVE PATTERNS. THESE MASTER PATTERNS SHALL BE PREPARED TO A SCALE OF 1/1.

6-COMPONENT SIDE OF BOARD SHALL BE CONSIDERED TO BE SIDE DEPICTED ON SHEET 1.

7-FOR DIMENSIONING OF HOLES LOCATED FROM "X" AND "Y" COORDINATES SEE SHEETS 3 THRU 5.

8-HOLE NUMBERING (SHEET 1) IS FOR REFERENCE ONLY AND SHALL NOT APPEAR ON FINISHED BOARD.

9-UNLESS OTHERWISE SPECIFIED HOLES SHALL BE LOCATED WITHIN .010 DIA OF TRUE POSITION.

10-REFERENCE INFORMATION:-

A- HIGHEST HOLE NO. USED 781

B-TOTAL NO. OF HOLES 625

11-APPLY MANUFACTURER'S SERIAL NUMBER TO AREA SPECIFIED ON BOARD. NUMBER SHALL CONSIST OF MANUFACTURER'S FSCM NO.,CONTRACT OR ORDER NO. AND CIRCUIT'S SERIALIZED NO. EXAMPLE (19200-1234-0001).

12-HOLES NUMBERED 54 AND 781 SHALL BE USED TO ESTABLISH THE "Y" AXIS.

13-MINIMUM CONDUCTOR WIDTH TO BE .020 AND MINIMUM SPACING TO BE .015.

14-THE POSITION OF A HOLE TO ITS SURROUNDING CONDUCTOR PAD SHALL ASSURE ENCIRCLEMENT WITH MINIMUM ANNULAR RING OF .005 INCH.

15-CONNECTOR FINGERS, BOTH SIDES OF BOARD, TO BE PLATED WITH .00003 IN. NICKEL, THEN PLATED WITH .00005 MIN IN. GOLD PER MIL-G-45204, TYPE II, CLASS 1, IN AREA SHOWN.

16-ALL MARKING TO BE DONE USING INK, MARKING, EPOXY BASE, COLOR WHITE (ALT BLACK), SPEC MIL-I-43553, (SEE SHEET 8)

17-APPLY SOLDER MASK TO BOTH SIDES OF THE BOARD IN ACCORDANCE WITH IPC-SM-840, TYPE A OR B, CLASS 3, COLOR GREEN.

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-	PRODUCTION RELEASE ERR F6I4013	861209	MH
A	INC NOR D0I3034 89-05-18 (ECP D0I3056 90-06-14)	90-11-12	[illegible]
C	INC NOR D0I3020 90-09-19 (ECP D0I2092 91-01-09)	92-11-06	[illegible]
D	NOR D1I4145 920102 (ECP D1I3122 911212) (ECP D2I3039 930126)	940114	[illegible]
E	NOR D5I4075 951212	960301	HJS

PART NO. SEE SHEET 1

NEXT ASSY	USED ON
	THMTG
APPLICATION	

MECHANICAL PROPERTIES: YP, TS, ELZ, RA, BH, RH, CADDS REV —

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± —
FRACTIONS ± — ANGLES ± —
THIRD ANGLE PROJECTION

ORIGINAL DATE OF DRAWING 86-04-01
DRAFTSMAN ML CHECKER
ENGR ENGR
ENGR ENGR

U.S. ARMY
ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
PICATINNY ARSENAL, DOVER, NEW JERSEY 07803-5001

CIRCUIT BOARD, PRINTED

SIZE C | FSCM NO. 19200 | 11784524
SCALE — | UNIT WT. | SHEET 2

SMCAR FORM 67, 1 JUN 86(TEMP) REPLACES SMCAR FORM 67, 1 FEB 85.
WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	PRODUCTION RELEASE ERR FB24013	86E209	
C	INC NOR D013020 90-09-10 (ECP D012092 91-01-09)	92-11-08	
D	NOR DI14145 920102 ECP DI13122 911212	940114	

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
1	0.000	0.050
2		0.250
3		0.400
4		0.550
5		0.750
7		0.950
8		1.200
9		1.350
11		1.550
12		1.700
13	0.000	3.350
14	0.100	5.200
18		4.600
19		4.300
21		4.300
22		4.150
23		4.000
24		3.800
26		3.650
28		3.250
29		3.100
31		3.000
32		2.800
33		2.600
36		2.300
37		2.000
38	0.100	1.850
39	0.200	2.200
41		2.300
42		2.900
43		3.000
44		4.400
46	0.200	4.500
47	0.250	3.350
48	0.400	2.950
49	0.400	2.250

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
51	0.250	1.700
52	0.250	1.200
53	0.250	0.400
54	0.300	0.000
56		0.300
57		0.700
58		1.000
59		1.300
61	0.300	1.600
62	0.400	1.600
63		1.300
64		1.000
66		0.700
67		0.300
68	0.400	0.000
69	0.500	0.000
71		0.300
72		0.550
73		0.700
74		1.000
76		1.300
77		1.600
78		4.400
79	0.500	4.500
81	0.600	5.200
84		4.600
86		4.500
87		4.300
88		4.150
89		4.000
91		3.800
92		3.650
94		3.250
96		3.100
97		2.950
98	0.600	2.800

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
99	0.600	2.600
102		2.250
103		2.000
104	0.600	1.850
106	0.650	1.700
107	0.600	1.600
108	0.600	1.300
109	0.650	1.200
111	0.600	1.000
112	0.600	0.700
113	0.600	0.550
114	0.650	0.400
116	0.600	0.300
117	0.600	0.000
118	0.700	0.000
119		0.300
121		0.700
122		1.000
123		1.300
124		1.600
126		1.850
127		2.150
128		2.300
129		2.600
131	0.700	3.800
132	0.650	5.350
133	0.750	5.300
134	0.800	5.200
138		4.600
139		4.500
141		4.300
142		4.150
143		4.000
144		3.650
146		3.500
147	0.800	3.350

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
148	0.800	3.200
149		3.100
151		2.900
152		2.750
153		2.600
154		2.450
156		2.300
157		2.150
158		2.000
159		1.850
161		1.600
162		1.300
163		1.000
164		0.700
166		0.300
167	0.800	0.000
168	0.900	0.000
169		0.300
171		0.700
172		1.000
173		1.300
174		1.600
176		3.000
177		3.100
178		4.400
179		4.500
181	0.900	3.300
182	1.050	5.300
183	0.950	3.800
184	0.950	3.300
186	1.100	0.030
187		0.250
188		0.550
189		3.300
191	1.100	3.800
192	1.150	4.400

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
193	1.150	4.500
194	1.200	5.300
196	1.250	4.500
197	1.250	3.800
198	1.250	3.300
199	1.250	0.550
201	1.300	0.000
202		0.300
203		0.700
204		1.000
206		1.300
207		1.600
208		1.850
209		2.000
211		2.150
212		2.300
213		2.450
214		2.600
216		2.750
217		2.900
218		3.000
219		3.200
222		4.000
223		4.150
224		4.300
226		4.600
229	1.300	5.200
231	1.400	4.800
232		4.300
233		4.200
234		3.700
236		2.600
237		2.300
238		2.150
239		1.850
241	1.400	1.600

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
242	1.400	1.300
243		1.000
244		0.700
246		0.300
247	1.400	0.000
248	1.500	0.000
249	1.500	0.300
251	1.450	0.400
252	1.500	0.700
253	1.500	1.000
254	1.450	1.200
256	1.500	1.300
257	1.500	1.600
258	1.450	1.700
259	1.500	1.850
261		2.000
262		2.150
263		2.300
264		2.450
266		2.600
267		2.750
268		2.900
269		3.050
271		3.200
272		3.350
273		3.500
274		3.650
276		3.800
277	1.500	3.950
278	1.550	4.150
279	1.500	4.250
281		4.400
282		4.550
283		4.700
284		4.900
286	1.500	3.000

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	Y ↑
289	1.450	5.350
291	1.600	4.900
292	1.600	4.800
293	1.650	4.150
294	1.650	4.050
296	1.600	1.600
297		1.300
298		1.100
299		1.000
301		0.700
302		0.300
303	1.600	0.000
304	1.700	0.000
306		0.300
307		0.700
308		1.000
309		1.300
311		1.600
312	1.700	3.300
313	1.850	5.350
316	1.800	1.600
317		1.300
318		1.000
319	1.800	0.700
321	1.750	0.550
322	1.800	0.300
323	1.800	0.000
324	1.900	0.000
326	1.950	0.150
327	1.900	0.300
328	1.850	0.400
329	1.900	0.700
331	1.900	1.000
332	1.850	1.200
333	1.900	1.300
334	1.900	1.600

PART NO. SEE SHEET 1

U.S. ARMY
PRODUCT ASSURANCE, DEVELOPMENT AND ENGINEERING CENTER
PICATINNY ARSENAL, DOVER, NEW JERSEY 07801-5000

CIRCUIT BOARD, PRINTED

D 19200 11784524

SHEET 3

MECHANICAL PROPERTIES

NEXT ASSY THMTG USED ON

APPLICATION

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ON DECIMALS ± —

FRACTIONS ± — ANGLES ± —

THIRD ANGLE PROJECTION

DRAWING DATE OF DRAWING 86-04-01

DRAFTSMAN NO. CHECKER GMC

DATE

DATE

Douglas M. Lobb

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

SMCAR FORM 68, 1 JUN 86(TEMP) REPLACES SMCAR FORM 68, 1 FEB 85, WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	PRODUCTION RELEASE ERR F61403	861209	
C	INC NOR DI13020 90-09-19 (ECP DI12092 91-01-09)	92-11-06	
D	NOR DI14145 920102 (ECP DI13122 911212)	940114	

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
336	1.850	1.700
337	1.900	4.050
342	2.000	5.000
344		4.700
346		4.550
347		4.400
348		4.250
349		4.150
351		4.050
352		3.950
353		3.800
354		3.650
356		3.500
357		3.350
358		3.200
359		3.050
361		2.900
362		2.750
363		2.600
364		2.450
366		2.300
367		2.150
368		2.000
369		1.850
371	2.000	0.500
372	2.100	0.000
373		0.200
374		0.300
376		0.600
377		0.900
378		1.100
379		1.350
381	2.100	1.550
382	2.150	1.850
383	2.150	2.150
384	2.150	2.650

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
386	2.150	2.950
387		3.100
388		3.600
389		3.750
391	2.150	3.950
397	2.100	5.300
398	2.250	5.300
401	2.300	5.000
402		4.900
403		4.700
404		4.550
406		4.400
407		4.300
408		4.100
409		3.950
411		3.800
412		3.650
413		3.500
414		3.350
416		3.200
417		3.050
418		2.900
419		2.750
421		2.600
422		2.450
423		2.300
424		2.150
426		2.000
427	2.300	1.650
428	2.250	1.550
429	2.250	1.350
431	2.300	1.000
432		0.700
433		0.300
434	2.300	0.000
436	2.400	0.000

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
437	2.400	0.300
438		0.600
439		0.700
441		1.000
442		1.300
443		1.450
444		1.600
446		4.200
447		4.300
448		4.800
449	2.400	4.900
451	2.500	5.300
452		1.000
453		0.700
454		0.500
456		0.300
457	2.500	0.000
458	2.600	0.000
459		0.300
461		0.700
462	2.600	1.000
464	2.650	5.350
467	2.700	4.200
468	2.650	1.700
469	2.650	1.200
471	2.650	0.400
472	2.700	0.000
473		0.300
474		0.700
476	2.700	1.000
477	2.800	5.300
479		5.000
482		4.700
483		4.550
484		4.400
486	2.800	4.300

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
487	2.800	4.200
488		4.100
489		3.950
491		3.800
492		3.650
493		3.500
494		3.350
496		3.200
497		3.050
498		2.900
499		2.750
501		2.600
502		2.450
503		2.300
504		2.150
506		2.000
507		1.850
508		1.000
509		0.700
511		0.300
512	2.800	0.000
513	2.900	0.000
514		0.300
516		0.600
517		0.700
518		1.000
519		1.300
521		1.450
522		1.600
523		1.900
524		2.200
526		2.600
527		2.800
528	2.900	3.100
529	2.950	3.300
531	3.050	3.350

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
532	3.050	3.250
533		3.000
534		2.500
536		2.400
537		1.900
538		1.700
539		1.200
541		1.000
542		0.300
543		0.400
544	3.050	0.000
546	3.100	1.300
547	3.100	1.600
548	3.150	5.300
549	3.200	3.100
551		3.000
552		2.500
553		2.400
554		1.900
556		1.600
557		1.300
558		1.000
559		0.800
561	3.200	0.300
562	3.250	5.300
563	3.300	1.600
564	3.300	1.300
566	3.350	0.500
567		0.600
568		1.100
569		2.050
571		2.200
572		2.350
573		2.500
574		2.600
576	3.350	2.700

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
577	3.350	2.800
578	3.350	2.950
579	3.350	3.100
581	3.400	5.300
582		1.950
583		1.850
584		1.600
586		1.300
587		0.300
588		0.200
589	3.400	0.050
591	3.500	0.600
592		1.100
593		1.300
594		1.600
596	3.500	1.950
597	3.550	2.650
598	3.450	2.700
599	3.550	3.250
601	3.550	5.300
602	3.600	1.600
603	3.600	1.300
604	3.700	1.300
606	3.700	1.600
607	3.650	1.900
613	3.700	5.300
614	3.750	1.100
616	3.750	0.600
617	3.900	0.050
618	3.900	0.200
619	3.850	0.400
621		1.200
622		1.700
623		1.900
624		2.050
626	3.850	2.200

HOLE SIZE (NOTE 3) .032+.007 DIA

HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
627	3.850	2.350
628		2.500
629		2.650
631		2.800
632		2.950
633		3.100
639	3.850	5.350
647	4.050	0.000
648		0.300
649		0.700
651	4.050	1.000
652	4.000	1.350
653		1.550
654		1.900
656	4.000	2.400
661	4.050	5.300
662	4.150	2.400
663		1.900
664		1.600
666		1.450
667		1.300
668		1.000
669	4.150	0.700
671	4.100	0.600
672	4.150	0.300
673	4.150	0.000
674	4.250	0.000
676		0.300
677		0.400
678		0.700
679		1.000
681		1.200
682		1.700
683	4.250	1.900
684	4.300	2.150
686	4.250	2.300

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THMTG	NEXT ASSY	USED ON
APPLICATION		

MECHANICAL PROPERTIES: TP, TR, SLS, RA, BH, FR, CODE REV -

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± ——
FRACTIONS ± —— ANGLES ± ——
THIRD ANGLE PROJECTION

DRAWING DATE OF CHANGES 86-04-01
DRAFTSMAN NO. | DRAWN GMC | CHKD | SUPV | ENGR | SUPV

PART NO. SEE SHEET 1

U.S. ARMY
MISSILE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
REDSTONE ARSENAL, ALABAMA, NEW JERSEY 07703-5006

CIRCUIT BOARD, PRINTED

D | 19200 | 11784524
SCALE — | WGT WT. | SHEET 4

SMCAR FORM 68, 1 JUN 86(TEMP) REPLACES SMCAR FORM 68, 1 FEB 85, WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE D

HOLE SIZE (NOTE 3) .032+.007 DIA		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
687	4.250	2.450
688		2.600
689		2.750
691		2.900
702	4.250	3.350
713	4.400	2.150
714	4.400	2.050
716	4.350	1.000
717		0.700
718		0.300
719	4.350	0.000
721	4.450	0.000
722		0.300
723		0.700
724	4.450	1.000
726	4.550	1.000
727	4.550	0.700
728	4.600	0.600
729	4.550	0.300
731	4.550	0.000
732	4.650	0.000
733		0.300
734		0.700
736		1.000
737		1.300
738		1.450
739		1.600
741		2.050
742	4.650	2.150
753	4.800	5.350
764	4.750	2.900
766		2.750
767		2.600
768		2.450
769		2.300
771	4.750	2.150

HOLE SIZE (NOTE 3) .032+.007 DIA		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
772	4.750	1.900
773	4.800	1.700
774	4.800	1.200
776	4.750	1.000
777	4.750	0.700
778	4.800	0.400
779	4.750	0.300
781	4.750	0.000

HOLE SIZE (NOTE 3) .041+.007 DIA		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
16	0.100	5.000
17	0.100	4.800
27	0.150	3.450
34	0.100	2.450
82	0.600	5.000
83	0.600	4.800
93	0.550	3.450
101	0.600	2.450
136	0.800	5.000
137	0.800	4.800
227	1.300	4.800
228	1.300	5.000
287	1.500	5.150
288	1.500	5.250
314	1.800	4.850
338	1.900	4.850
339	2.000	5.250
341	2.000	5.150
343	2.000	4.850
392	2.150	4.100
393	2.150	4.600
394	2.150	4.700
396	2.150	5.200
399	2.300	5.200
463	2.600	4.850
466	2.700	4.850
478	2.800	5.200
481	2.800	4.850
608	3.650	3.800
609		3.900
611		4.400
612	3.650	4.500
634	3.800	3.800
636	3.800	3.900
637	3.800	4.400

HOLE SIZE (NOTE 3) .041+.007 DIA		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
638	3.800	4.500
641	3.950	4.500
642		4.400
643		3.900
644		3.800
646	3.950	3.150
657	4.050	2.700
658	4.050	2.800
659	4.050	2.900
692	4.250	3.200
693		3.300
694		3.400
696		3.500
697		3.600
698		3.700
699		3.800
701	4.250	3.900
703	4.350	3.900
704		3.800
706		3.700
707		3.600
708		3.500
709		3.400
711		3.300
712	4.350	3.200
743	4.650	3.200
744		3.300
746		3.400
747		3.500
748		3.600
749		3.700
751		3.800
752	4.650	3.900
754	4.750	3.900
756	4.750	3.800
757	4.750	3.700

HOLE SIZE (NOTE 3) .041+.007 DIA		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑
758	4.750	3.600
759		3.500
761		3.400
762		3.3
763	4.750	3.200

HOLE SIZE (NOTE)		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑

HOLE SIZE (NOTE)		
HOLE NO.	BASIC DIMENSIONS X →	BASIC DIMENSIONS Y ↑

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
–	PRODUCTION RELEASE ERR F61401 3	861209	
C	INC NOR 001 3020 90-09-19 (ECP 001 20292 91-01-09)	92-11-06	
D	NOR DI I4145 920102 (ECP DI I3122 911212)	940114	

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PART NO. SEE SHEET 1

THMTG			
NEXT ASSY	USED ON		
APPLICATION			

MECHANICAL PROPERTIES: TV, TS, ELE, EN, BH, RH, CHECK REV –

DO NOT SCALE DRAWING. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS ± ——, FRACTIONS ± ——, ANGLES ± ——. THIRD ANGLE PROJECTION

ORIGINAL DATE OF DRAWING 86-04-01

DRAFTSMAN JK, CHECKER CME, SIGN, SIGN, SIGN, SIGN

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, DOVER, NEW JERSEY 07801-5000

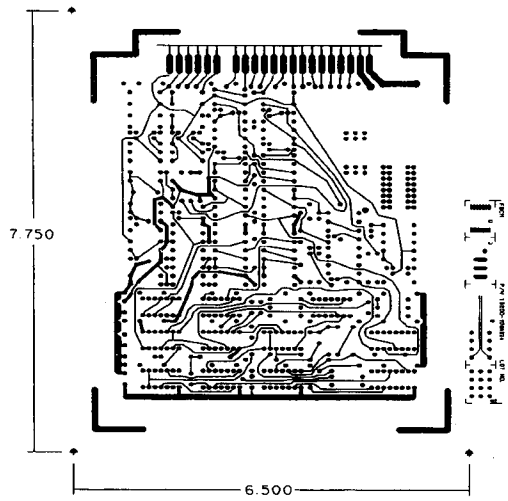
CIRCUIT BOARD, PRINTED

SIZE D, FSCM NO. 19200, 11784524, SCALE ——, WGT. WT., SHEET 5

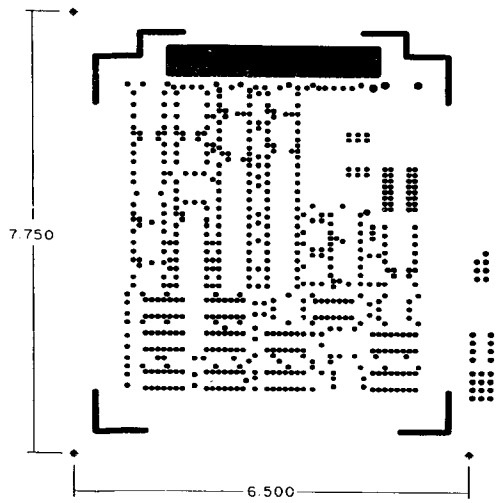
SMCAR FORM 68, 1 JUN 86(TEMP) REPLACES SMCAR FORM 68, 1 FEB 85, WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE C

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE (YR MO DA)	APPROVED
	D	NOR DI14145 920102	940114	



COMPONENT SIDE
DWG. NO. 11784524, SH 6



SOLDERMASK
DWG. NO. 11784524

PART NO. SEE SHEET 1

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED.

PMIC			
MECHANICAL PROPERTIES			
TP			
TS			
EL2			
RA			
BH		THMTG	
RH	NEXT ASSY	USED ON	
	APPLICATION		

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMAL FRACTION
2 PL ± ± —
3 PL ± —
THIRD ANGLE PROJECTION
MATL ENGR

CONTRACT NUMBER
CONTRACTOR
DRAWN BY ML DATE (YR-MO-DA) 80-04-07
CHECKER WRS ENGINEER
DRAWING APPROVAL JAMES A. LONG
DESIGN APPROVAL DOUGLAS M. LAIRD

DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

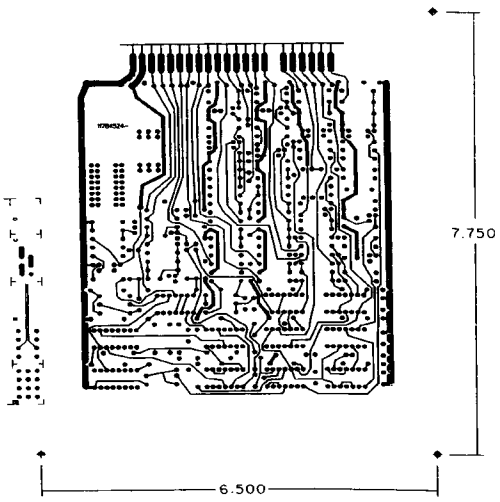
CIRCUIT BOARD, PRINTED

SIZE C CAGE CODE 19200 11784524
SCALE 1/1 UNIT WT. — SHEET 6

SMCAR FORM 67, 1 DEC 87(TEMP), REPLACES SMCAR FORM 67, 1 MAR 87(TEMP), WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE C

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE (YR MO DA)	APPROVED
	D	NOR DII4145 920102	940114	



SOLDER SIDE
DWG. NO. 11784524, SH 7

PART NO. SEE SHEET 1

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE:
DISTRIBUTION IS UNLIMITED.

PMIC		
MECHANICAL PROPERTIES		
YP		
TS		
EL2		
RA		
BH		THMTG
RH	NEXT ASSY	USED ON
	APPLICATION	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMAL 2 PL ± ___ 3 PL ± ___
FRACTION ± ___
THIRD ANGLE PROJECTION
MATL ENGR

CONTRACT NUMBER
CONTRACTOR
DRAWN BY ML DATE (YR-MO-DA) 80-04-07
CHECKER WRS ENGINEER
DRAWING APPROVAL JAMES A. LONG
DESIGN APPROVAL DOULAS M. LAIRD

DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

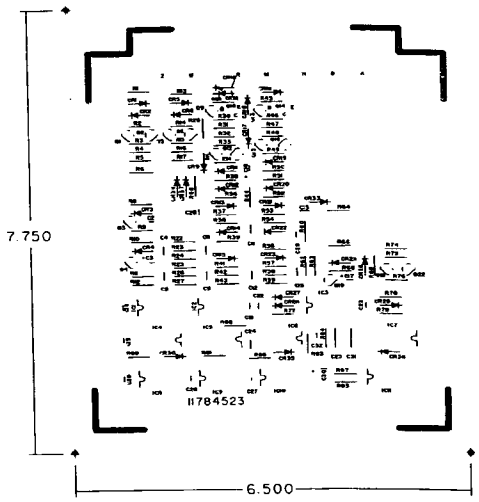
CIRCUIT BOARD, PRINTED

SIZE C CAGE CODE 19200 11784524
SCALE 1/1 UNIT WT. ___ SHEET 7

SMCAR FORM 67, 1 DEC 87(TEMP). REPLACES SMCAR FORM 67, 1 MAR 87(TEMP), WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE C

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE (YR MO DA)	APPROVED
	D	NOR DI14145 920102	940114	



SILKSCREEN
DWG. NO. 11784524

PART NO. SEE SHEET 1

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED.

PMIC			
MECHANICAL PROPERTIES			
YP			
TS			
EL2			
RA			
BH			
RH			
NEXT ASSY	THMTG		
APPLICATION	USED ON		

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMAL 2 PL ± ___ 3 PL ± ___ FRACTION ± ___
THIRD ANGLE PROJECTION
MATL ENGR

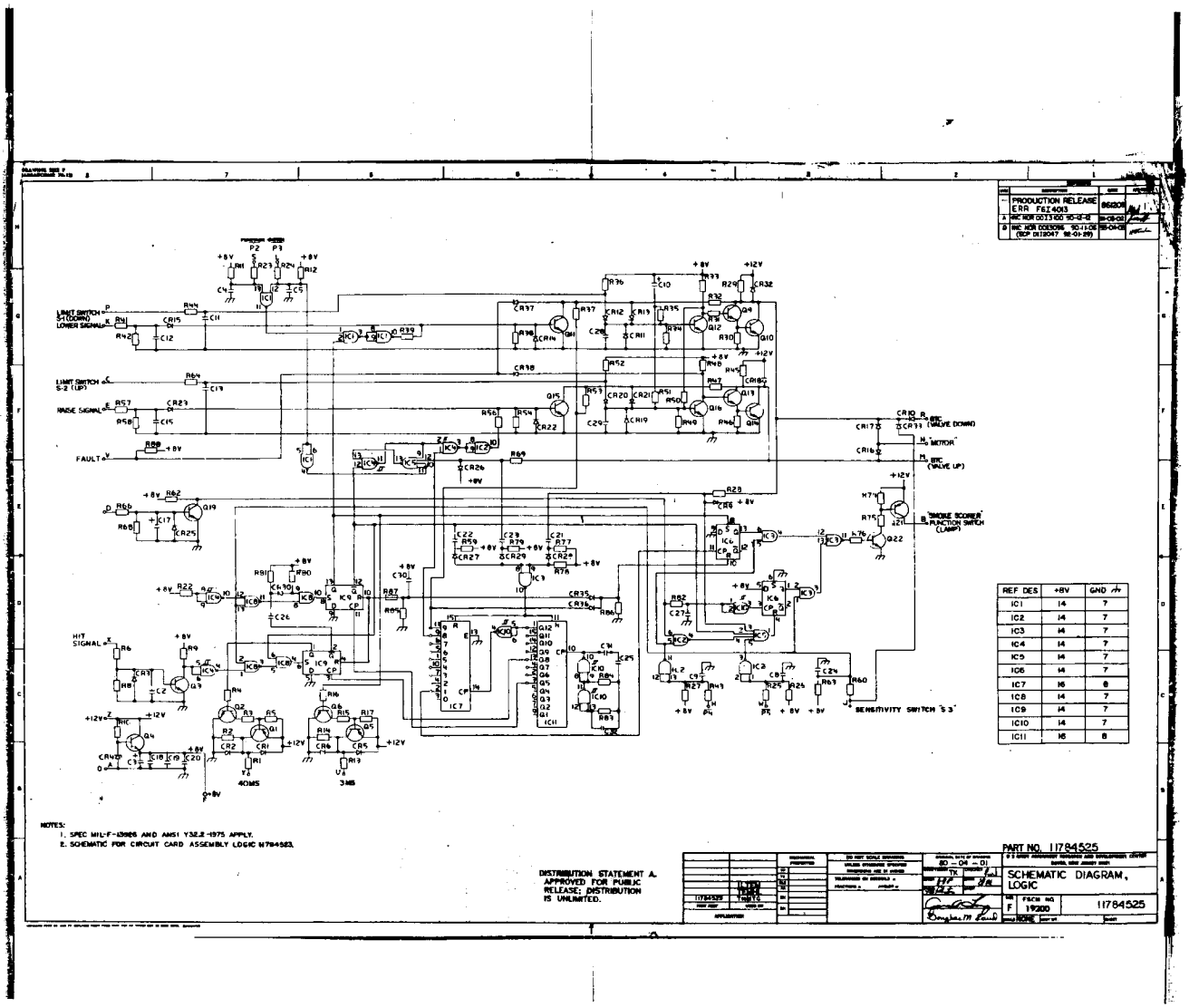
CONTRACT NUMBER
CONTRACTOR
DRAWN BY ML DATE (YR-MO-DA) 80-04-07
CHECKER WRS ENGINEER
DRAWING APPROVAL JAMES A. LONG
DESIGN APPROVAL DOULAS M. LAIRD

DESIGN ACTIVITY U.S. ARMY
ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
PICATINNY ARSENAL, NEW JERSEY 07806-5000

CIRCUIT BOARD, PRINTED

SIZE C CAGE CODE 19200 11784524
SCALE 1/1 UNIT WT. ___ SHEET 8

SMCAR FORM 67, 1 DEC 87(TEMP), REPLACES SMCAR FORM 67, 1 MAR 87(TEMP),
WHICH MAY BE USED UNTIL EXHAUSTED



REF DES	+8V	GND
IC1	14	7
IC2	14	7
IC3	14	7
IC4	14	7
IC5	14	7
IC6	14	7
IC7	16	8
IC8	14	7
IC9	14	7
IC10	14	7
IC11	16	8

NOTES:
1. SPEC MIL-F-13926 AND ANSI Y32.2-1975 APPLY.
2. SCHEMATIC FOR CIRCUIT CARD ASSEMBLY LOGIC N784583.

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

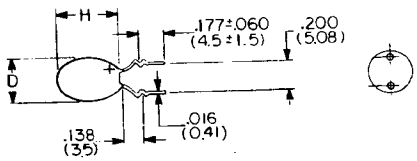
PART NO. 11784525

SCHEMATIC DIAGRAM, LOGIC

F 19200 11784525

DRAWING SIZE B
(ARRADCOM/R 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D9I2011 89-06-14	92-06-01	
B	INC NOR D013096 90-11-06 (ECP D1I2047 92-01-29)	93-03-24	



NOTES:

1. REQUIREMENTS:
   A. SPECIFICATIONS.
      CAPACITANCE TOLERANCE: ± 20%.
      TEMPERATURE RANGE: -55°C TO +85°C
      VOLTAGE: 10 V

2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

3. SUGGESTED SOURCES OF SUPPLY.
   AEG TELEFUNKEN
   POST FACH 1109, WEST GERMANY
   PART NO. SEE TABLE
   CAGE CODE D1597
   ITT CORP.
   ITT COMPONENTS
   5 JENNER ST.
   IRVINE, CA 92718
   PART NO. SEE TABLE
   CAGE CODE 05292

4. SPEC ANSI Y14.5-1973 APPLIES.

PART NO		D MAX.	H MAX.	CAPACITANCE	PART NO. TELEFUNKEN	PART NO. ITT	NEXT ASSY
11784590	-1	.196 (5.0)	.334 (8.5)	10 µF	TSS 10/S10	TAP-F10M10	11784811
	-2	.255 (6.5)	.393 (10)	33 µF	TSS 33/S10	TAP-F33M10	11784523

SPECIFICATION CONTROL DRAWING

DIMENSIONS IN ( ) ARE MILLIMETERS

PART NO. SEE TABLE

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

		MECHANICAL PROPERTIES	
		YP	
		TS	
		EL2	
	ILTEM	RA	
	TEMHL	BH	
SEE TABLE	THMTG	RH	
NEXT ASSY	USED ON		
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-24

DRAFTSMAN TK | CHECKER EMC
ENGR | ENGR
ENGR | ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

CAPACITOR, TANTALUM

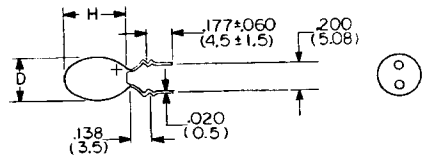
SIZE B | FSCM NO. 19200 | 11784590

SCALE 2/1 | UNIT WT. | SHEET

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1039 OCT 73 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 78-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D9I2011 89-06-14	92-06-01	
B	INC NOR D013096 90-11-06 (ECP D1I2047 92-01-29)	93-03-24	



NOTES:

1. REQUIREMENTS:
   A. SPECIFICATIONS:
      CAPACITANCE TOLERANCE: ± 20%,
      TEMPERATURE RANGE: -55°C TO +85°C
      VOLTAGE: 16 V
2. IDENTIFICATION OF THE 'SUGGESTED SOURCES OF SUPPLY' HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   AEG TELEFUNKEN
   POSTFACH 1109, WEST GERMANY
   PART NO. SEE TABLE
   CAGE CODE D1597

   ITT CORP.
   ITT COMPONENTS
   5 JENNER ST.
   IRVINE, CA. 92718
   PART NO. SEE TABLE
   CAGE CODE 05292
4. SPEC ANSI Y14.5-1973 APPLIES.

PART NO.		D MAX.	H MAX.	CAPACITANCE	TELEFUNKEN PART NO.	ITT COMP. PART NO.	NEXT ASSY
11784591	-1	.216 (5.5)	.354 (9.0)	10µF	TSS 10/516	TAP-F 10M16	11784523
	-2	.255 (6.5)	.393 (10.0)	22µF	TSS 22/516	TAP-F 22M16	11784523

SPECIFICATION CONTROL DRAWING

DIMENSIONS IN ( ) ARE MILLIMETERS

PART NO. SEE TABLE

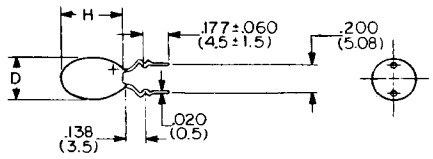
DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

		MECHANICAL PROPERTIES	DO NOT SCALE DRAWING	ORIGINAL DATE OF DRAWING 79-09-24	U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER DOVER, NEW JERSEY 07801
		YP	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAFTSMAN TK / CHECKER EMC	CAPACITOR, TANTALUM
		TS	TOLERANCES ON DECIMALS ± .010 (0.25)	ENGR / ENGR	
	ILTEM	EL2	FRACTIONS ± — ANGLES ± —	ENGR / ENGR	
	TEMHL	RA			
SEE TABLE	THMTG	BH			SIZE B / FSCM NO. 19200 / 11784591
NEXT ASSY	USED ON	RH			SCALE 2/1 / UNIT WT. / SHEET
APPLICATION					

ARRADCOM FORM 84 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D9I2011 89-06-14	92-06-01	
B	INC NOR D013096 90-11-06 (ECP D112047 92-01-29)	93-03-24	



NOTES:

1. REQUIRMENTS:
   A. SPECIFICATIONS.
      CAPACITANCE TOLERANCE: ± 20%.
      TEMPERATURE RANGE: -55°C TO +85°C
      VOLTAGE: 25V
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   AEG TELEFUNKEN
   POST FACH 1109, WEST GERMANY
   PART NO. SEE TABLE
   CAGE CODE D1897

   ITT CORP
   ITT COMPONENTS
   5 JENNER ST.
   IRVINE, CA. 92718
   PART NO. SEE TABLE
   CAGE CODE 05292
4. SPEC ANSI Y14.5-1973 APPLIES.

	PART NO	D MAX.	H MAX.	CAPACITANCE	TELEFUNKEN PART NO	ITT COMP. PART NO.	NEXT ASSY
11784592	-1	.196 (5.0)	.314 (8)	3.3µF	TSS 3.3/525	TAP-F 3.3M25	11784811 11784531
	-2	.236 (6.0)	.374 (9.5)	10.0µF	TSS 10/525	TAP-F 10M25	11784711 11784523

SPECIFICATION CONTROL DRAWING

DIMENSIONS IN ( ) ARE MILLIMETERS

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

PART NO. SEE TABLE

		MECHANICAL PROPERTIES	
		YP	
		TS	
		EL2	
	ILTEM	RA	
	TEMHL		
SEE TABLE	THMTG	BH	
NEXT ASSY	USED ON	RH	
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-17
DRAFTSMAN TK CHECKER EMC
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

CAPACITOR, TANTALUM

SIZE B FSCM NO. 19200 11784592
SCALE 2/1 UNIT WT. SHEET

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

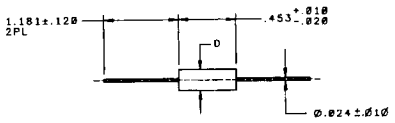
DRAWING SIZE D

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	NOR D013118 91-01-09	91-02-15	
B	INC NOR D013096 90-11-06 (EOP D012047 92-01-29)	93-04-02	

NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
   A. DOD-STD-00100 (AR)
   B. ANSI Y14.5-1973
   C. MIL-F-13926
2. REQUIREMENTS:
   A. CAPACITANCE TOLERANCE: ±2.5%
   B. TEMPERATURE RANGE: -25°C TO +85°C
   C. VOLTAGE: 100VDC
3. IDENTIFICATION OF THE SUGGESTED SOURCES OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

(4) ITEM IDENTIFICATION: APPLY THE INFORMATION SHOWN TO CONTAINER IN ACCORDANCE WITH MIL-STD-130.



PART NO.	D±.010	CAPACITANCE	VENDOR	VENDOR PART NO.	ITEM IDENT (4)
11784593-1	0.177	680 PF	SIEMENS	B33063-A1681-H	19200-11784593-1 MFR-92346-B33063-A1681-H
11784593-2	0.244	1500 PF		B330630A1152-H	19200-11784593-2 MFR-92346-B330630A1152-H
11784593-1	0.177	680 PF	TELEFUNKEN	NZP 680/2.5/160	19200-11784593-1 MFR-D1597-NZP 680/2.5/160
11784593-2	0.244	1500 PF		NZP 1500/2.5/160	19200-11784593-2 MFR-D1597-NZP 1500/2.5/160
11784593-1	0.197	680 PF	PHILIPS	703E1AD681PG401AX	19200-11784593-1 MFR-56699-703E1AD681PG401AX
11784593-2	0.197	1500 PF		703E1AD152PG251AX	19200-11784593-2 MFR-56699-703E1AD152PG251AX

SUGGESTED SOURCES OF SUPPLY				
PART NO.	VENDOR ADDRESS	VENDOR CAGE CODE	VENDOR PART NO.	ITEM IDENTIFICATION (4)
19200-11784593	SIEMENS AG MUNICH, WEST GERMANY	92346	SEE TABLE	SEE TABLE
19200-11784593	AEG TELEFUNKEN POSFACH 1109, WEST GERMANY	D1597	SEE TABLE	SEE TABLE
19200-11784593	PHILIPS COMPONENTS DISCRETE PRODUCTS DIV COLUMBIA, SC 29212-3198	56699	SEE TABLE	SEE TABLE

SPECIFICATION CONTROL DRAWING

PART NO. SEE TABLE

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

11784523	ITEM LEVEL THMTG	
NEXT ASSY	USED ON	
APPLICATION		

MECHANICAL PROPERTIES: TP, TS, ELE, PA, BH, RH

DO NOT SCALE DRAWING — UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS ± .010, FRACTIONS ± —, ANGLES ± —. THIRD ANGLE PROJECTION

ORIGINAL DATE OF DRAWING 79-10-17

DRAFTSMAN LK; ENGR JVP; PROJ ENGR PHR; DL; JL; TOPOGRAPHER EMC; CHIEF DM; ENGR

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

CAPACITOR, POLYPROPYLENE FILM

SIZE D | CAGE CODE 19200 | 11784593

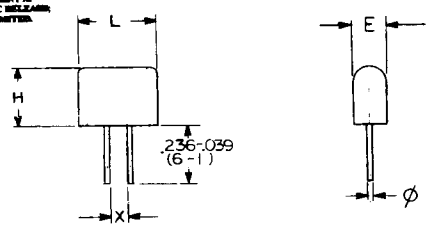
SCALE NONE | UNIT WT. | SHEET

SMCAR FORM 69, 1 MAR 87(TEMP), REPLACES SMCAR FORM 69, 1 JUN 86(TEMP), WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 78-12)

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION IS UNLIMITED.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	UM
A	INC NOR D013096 90-11-06 (ECP D112047 92-01-29)	95-05-24	[illegible]
B	NOR D3I3085/931116 (ECP D3I3087/931116) (ECP D3I3088/931116) (ECP D3I3089/931116)	931223	GHS



NOTES:
SPEC ANSI Y14.5-1973 APPLIES.
1. REQUIREMENTS:
   A. CAPACITANCE TOLERANCE: ±20%
   B. TEMPERATURE RANGE: -55° TO +100°C
   C. VOLTAGE (UP TO 85°C) 100V

2. IDENTIFICATION OF THE "SUGGESTED SOURCE OF SUPPLY" HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

3. SUGGESTED SOURCE OF SUPPLY:
WESTERMANN CO.
MANNHEIM, GERMANY BRD
PART NO. SEE TABLE
CAGE CODE 80183

ROEDERSTEIN ELECTRONIC INC.
2100 WEST FRONT ST.
P.O. BOX 5588
STATEVILLE, N.C. 28677
CAGE CODE 4U402

PART NO.	L (MAX)	X	E (MAX)	H (MAX)	Ø	CAPACITANCE	WESTERMANN PART NO.	NEXT ASSY	ROEDERSTEIN PART NO.
11784596-1	.283 (7.2)	.200 (5)	.098 (2.5)	.236 (6)	.020 (0.5)	1000 PF	FKS2-1000PF	11784526	MKT1817-210/016
11784596-2	.283 (7.2)	.200 (5)	.098 (2.5)	.236 (6)	.020 (0.5)	4700PF	FKS2-4700PF	11784523 11784719	MKT1817-247/016
11784596-3	.283 (7.2)	.200 (5)	.126 (3.2)	.275 (7)	.020 (0.5)	10,000PF	FKS2-10,000PF	11784523, 11784526, 11784711, 11784808, 11784811	MKT1817-310/016
11784596-4	.394 (10)	.300 (7.6)	.157 (4)	.374 (9.5)	.024 (0.6)	47,000 PF	FKS-47,000PF	11784523 11784711	MKT1818-347/015

DIMENSIONS IN ( ) ARE MILLEMETERS

SPECIFICATION CONTROL DRAWING
PART NO. 11784596-1 THRU-4

		MECHANICAL PROPERTIES	
		YP	
		TS	
	ILTEM	EL2	
	TEMHL	RA	
SEE TABLE	THMTG	BH	
NEXT ASSY	USED ON	RM	
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± —— ANGLES ± ——

ORIGINAL DATE OF DRAWING 79-09-14
DRAFTSMAN TK CHECKER EMC
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

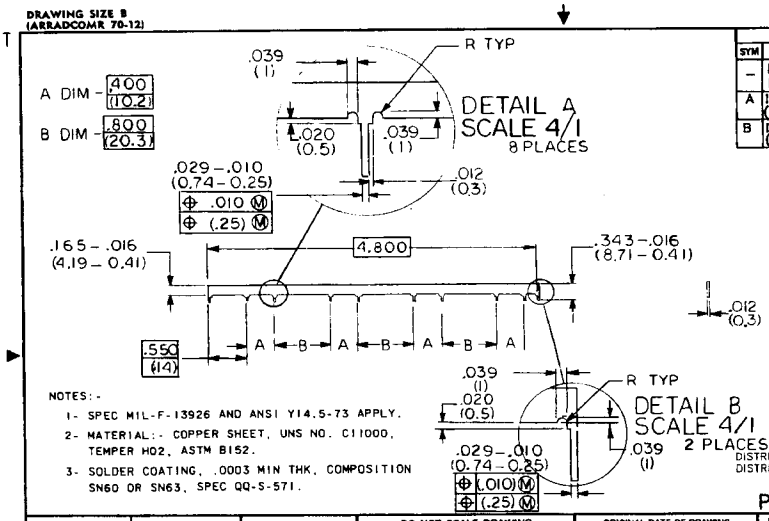
CAPACITOR, METALLIZED POLYESTER

SIZE	FSCM NO.	
B	19200	11784596
SCALE 4/1	UNIT WT.	SHEET

ARRADCOM FORM 66 AUG 77 REPLACES SARFA FORM 1039 OCT 72 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
–	PRODUCTION RELEASE ERR F6T4013	861209	
A	INC NOR D013020 90-09-19 (ECP D013099 90-12-26)	92-09-26	
B	INC NOR D013096 90-11-06 (ECP D112047 92-01-29)	93-03-25	



NOTES:-

1- SPEC MIL-F-13926 AND ANSI Y14.5-73 APPLY.

2- MATERIAL:- COPPER SHEET, UNS NO. C11000, TEMPER H02, ASTM B152.

3- SOLDER COATING, .0003 MIN THK, COMPOSITION SN60 OR SN63, SPEC QQ-S-571.

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

DIMENSIONS IN ( ) ARE MILLIMETERS

PART NO. 11784653

	TEMHL
11784711	ILTEM
11784523	THMTG
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES	
YP	
TS	
EL2	
RA	
BH	
RH	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .005
FRACTIONS ± — ANGLES ± 0°-15'

ORIGINAL DATE OF DRAWING 79-10-8

DRAFTSMAN TK CHECKER EMC
ENGR ENGR
ENGR ENGR

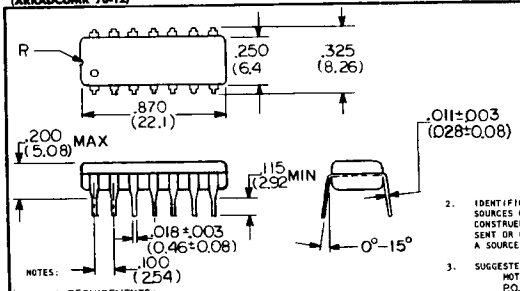
U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

CONDUCTOR, BUSS BAR

SIZE B FSCM NO. 19200 11784653
SCALE 1/1 UNIT WT. SHEET

ARRADCOM FORM 86 AUG 77 REPLACES SARPA FORM 1039 OCT 73 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)



NOTES:

1. REQUIREMENTS:
   - A. SUPPLY VOLTAGE VDD: -0.5 TO +16 VDC
   - B. INPUT VOLTAGE ALL INPUTS: -0.5 TO VDD VDC
   - C. DC CURRENT DRAIN PER PIN: 10 MA
   - D. OPERATING TEMPERATURE RANGE: -40 TO +85°C
   - E. STORAGE TEMPERATURE RANGE: -65 TO +150°C
   - F. SPEC ANSI Y14.5-1973 APPLIES.

2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

3. SUGGESTED SOURCES OF SUPPLY:
   MOTOROLA SEMI-CONDUCTOR PRODUCTS
   P.O. BOX 20912
   5005 E McDOWELL RD
   PHOENIX ARIZONA, 85036
   PART NO. MC14040BCP
   CAGE CODE 04713

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	NW
A	INC NOR DOI3096 90-11-06 (ECP DII2047 92-01-29)	93-03-26	[illegible]

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DRAWING

PART NO. 11784682

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

	TEMHL
11784808	ILTEM
11784523	THMTG
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES: YP, TS, EL2, RA, BH, RH

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010
FRACTIONS ± ~ ANGLES ± 1/2°

ORIGINAL DATE OF DRAWING 79 - 10 - 25
DRAFTSMAN TK CHECKER WB
ENGR JVP ENGR DM
ENGR [illegible] ENGR
[illegible]
Douglas M. David

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

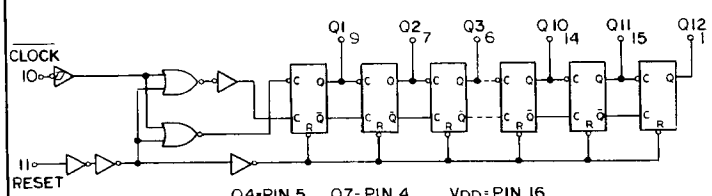
INTEGRATED CIRCUIT, DIGITAL, COUNTER, C-MOS

SIZE B | FSCM NO. 19200 | 11784682
SCALE 2/1 | UNIT WT. | SHEET 1 OF 2

ARRADCOM FORM 46 AUG 77 REPLACES SARPA FORM 1036 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
–	PRODUCTION RELEASE ERR F6I4013	861209	WW
A	INC NOR D013096 90-11-06 (ECP D1I2047 92-01-29)	93-03-26	[illegible]



Q4=PIN 5 Q7=PIN 4 V_{DD}=PIN 16
Q5=PIN 3 Q8=PIN 13 V_{SS}=PIN 8
Q6=PIN 2 Q9=PIN 12
4040B 12 BIT BINARY COUNTER

TRUTH TABLE

CLOCK	RESET	OUTPUT STATE
↑	0	NO CHANGE
↓	0	ADVANCE TO NEXT STATE
X	1	ALL OUTPUTS LOW

X=DON'T CARE

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE. DISTRIBUTION IS UNLIMITED

SPECIFICATION CONTROL DRAWING
PART NO. 11784682

	TEMHL
11784808	ILTEM
11784523	THMTG
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES: YP, TS, EL2, RA, BH, RH

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 TO .25, FRACTIONS ± — ANGLES ± 1/2°

ORIGINAL DATE OF DRAWING 79-10-25
DRAFTSMAN TK CHECKER WB
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

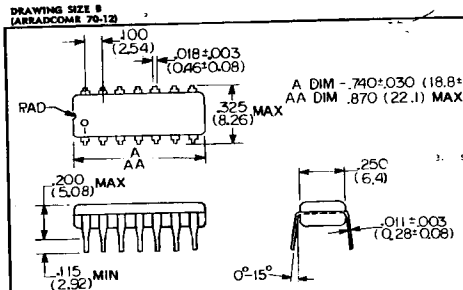
INTEGRATED CIRCUIT
DIGITAL, COUNTER, C-MOS

SIZE	FSCM NO.	
B	19200	11784682
SCALE	UNIT WT.	SHEET 2

ARRADCOM FORM 60 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOM 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
–	PRODUCTION RELEASE ERR F6I4013	861209	WN
A	INC NOR D013096 90-11-06 (ECP D112047 92-01-29)	93-03-25	



A DIM - .740±.030 (18.8±0.8) -14 PIN
AA DIM .870 (22.1) MAX 16 PIN

3. SUGGESTED SOURCES OF SUPPLY
MOTOROLA INC SEMI-CONDUCTOR PRODUCTS DIV
5005 E MCDOWELL RD
P.O. BOX 20912
PHOENIX, ARIZONA 85036
PART NO. SEE TABLE
CAGE CODE 04713

NOTES:

1. REQUIREMENTS:-
   A. SUPPLY VOLTAGE VDD: -0.5 TO +16 VDC
   B. INPUT VOLTAGE ALL INPUTS: -0.5 TO VDD VDC
   C. DC CURRENT DRAIN PER PIN: 10 MA
   D. OPERATING TEMPERATURE RANGE: -40 TO +85°C
   E. STORAGE TEMPERATURE RANGE: -65 TO +150°C
   F. SPEC ANSI Y14.5-1973 APPLIES.
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

PART NO.	FUNCTION	VENDOR NO.	NEXT ASSY
11784683-1	DUAL 5 INPUT MAJORITY GATE	MC14530BCP	11784808
11784683-2	QUAD 2 INPUT NAND SCHMITT	MC14093BCP	11784523

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION
CONTROL DRAWING
PART NO. SEE TABLE

		MECHANICAL PROPERTIES	
		VP	
		TS	
		EL2	
	TEMHL	RA	
	ILTEM	BH	
SEE TABLE	THMTG	RH	
NEXT ASSY	USED ON		
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± 0°12'

ORIGINAL DATE OF DRAWING 79 - 10 - 24
DRAFTSMAN TK CHECKER WB
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

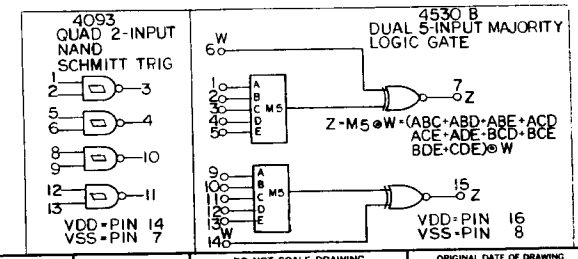
INTEGRATED CIRCUIT, DIGITAL, GATES, C-MOS

SIZE	FSCM NO.	
B	19200	11784683
SCALE 2/1	UNIT WT.	SHEET 1 OF 2

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	PRODUCTION RELEASE ERR F6I4013	861209	MN
A	INC NOR D0I3096 90-11-06 (ECP D1I2047 92-01-29)	93-03-25	[illegible]



DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

SPECIFICATION CONTROL DWG
PART NO. SEE TABLE

		MECHANICAL PROPERTIES	
		YP	
		TS	
	TEMHL	EL2	
	ILTEM	RA	
SEE TABLE	THMTG	BH	
NEXT ASSY	USED ON	RH	
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± ——
FRACTIONS ± —— ANGLES ± ——

ORIGINAL DATE OF DRAWING 79-10-23

DRAFTSMAN	TK	CHECKER	WB
ENGR	[illegible]	ENGR	DM
ENGR	[illegible]	ENGR	

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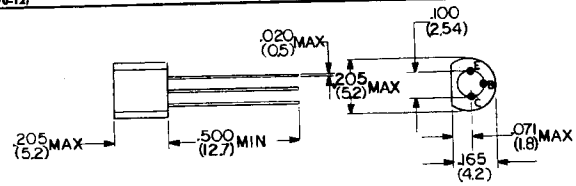
DOVER, NEW JERSEY 07801

INTEGRATED CIRCUIT
DIGITAL, GATES, C-MOS

SIZE	FSCM NO	
B	19200	11784683
SCALE	UNIT WT.	SHEET 2

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	[illegible]
A	INC NOR D8I2028 88-08-15 (ECP D9I2016 89-07-11)	89-11-03	[illegible]
B	INC NOR D0I3056 90-11-06 (ECP D1I2047 92-01-29)	93-03-25	[illegible]

NOTES:

1. REQUIREMENTS:
   A. COLLECTOR-EMITTER VOLTAGE (VCEO): 45 VDC
   B. EMITTER-BASE VOLTAGE (VEB): 5 VDC
   C. COLLECTOR CURRENT, PEAK (ICM): 1 AMP
   D. COLLECTOR CURRENT, CONTINUOUS (IC): .8 AMP
   E. TOTAL POWER DISSIPATION (PD): 625 MW MAX
   F. THERMAL RESISTANCE AT 25°C JUNCTION TO CASE (OJC): 4.0°C/W
   G. STORAGE TEMPERATURE RANGE (TSTG): -55°C TO +150°C
   H. CASE STYLE: TO-92F
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   A. MICRO ELECTRONICS CORP
      3370 MONTGOMERY DR,
      SANTA CLARA CA, 95051
      PART NO. BC 337
      CAGE CODE: 56652

   B. MEPCO/CENTRAL LAB
      HWY 20 WEST
      FORT DODGE, IA 50501
      CAGE CODE: 59821
      PART NO. BC337
4. SPEC ANSI Y14.5-1973 APPLIES.

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DWG

PART NO. 11784687

		MECHANICAL PROPERTIES	
		YP	
		TS	
		EL2	
	TEMHL	RA	
11784531	ILTEM	BH	
11784523	THMTG	RH	
NEXT ASSY	USED ON		
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-21
DRAFTSMAN TK CHECKER WB
ENGR JVP ENGR DM
ENGR [illegible] ENGR
[illegible]
Douglas M Baird

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

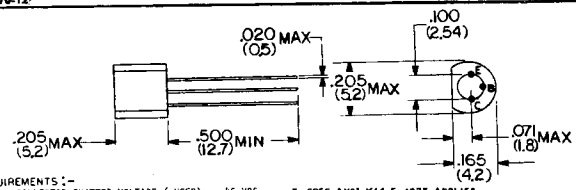
TRANSISTOR, NPN, SMALL SIGNAL, PLASTIC

SIZE B FSCM NO. 19200 11784687
SCALE 4/1 UNIT WT. SHEET

ARRADCOM FORM 86 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	OM
A	INC NOR D013096 90-11-06 (ECP D112047 92-06-23)	93-03-27	



NOTES:

1. REQUIREMENTS :-
   A. COLLECTOR-EMITTER VOLTAGE (-VCEO): -45 VDC
   B. EMITTER-BASE VOLTAGE (-VEBO): -5 VDC
   C. COLLECTOR CURRENT, PEAK (-ICM): -1 AMP
   D. COLLECTOR CURRENT, CONTINUOUS (-IC): -.8 AMP
   E. TOTAL POWER DISSIPATION (PD): 360 MW
   F. THERMAL RESISTANCE AT 25°C, JUNCTION TO CASE (OJC): 4.0°C/W
   G. STORAGE TEMPERATURE RANGE (TSTG): -55°C TO +150°C
   H. CASE STYLE: TO-92F

   I. SPEC ANSI Y14.5-1973 APPLIES.

2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.

3. SUGGESTED SOURCES OF SUPPLY:
   A. MOTOROLA SEMI-CONDUCTOR PROD. INC.
      5005 McDOWELL RD
      P.O.BOX 20912
      PHOENIX ARIZONA
      PART NO. BC327
      CAGE CODE 04713

   B. NATIONAL SEMICONDUCTOR CORP
      2900 SEMICONDUCTOR DR
      P.O.BOX 58090
      SANTA CLARA, CA 95051-8090
      CAGE CODE 27014
      PART NO. BC327

   C. PHILIPS COMPONENTS
      DISCRETE PRODUCTS DIV
      45 GEORGE WASHINGTON HWY
      SMITHFIELD, RI 02917
      P/N BC327

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DWG

PART NO. 11784688

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

		MECHANICAL PROPERTIES	
		YP	
		TS	
		EL2	
	TEMHL	RA	
11784531	ILT6M	BH	
11784523	THMTG		
NEXT ASSY	USED ON	RH	
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-21

DRAFTSMAN TK	CHECKER WB
ENGR JHP	ENGR UM
ENGR	ENGR

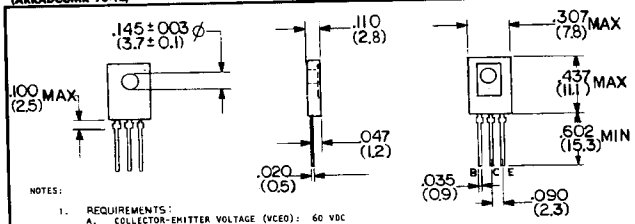
U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

TRANSISTOR, PNP, SMALL SIGNAL, PLASTIC

SIZE	FSCM NO.	
B	19200	11784688
SCALE 4/1	UNIT WT.	SHEET

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)



NOTES:

1. REQUIREMENTS:
   A. COLLECTOR-EMITTER VOLTAGE (VCEO): 60 VDC
   B. COLLECTOR-BASE VOLTAGE (VCBO): 60 VDC
   C.
   D. COLLECTOR CURRENT, PEAK (ICM): 6 ADC
   E. COLLECTOR CURRENT, CONTINUOUS (IC): 2 ADC
   F. TOTAL POWER DISSIPATION AT TC +25°C (PD): 25 WATT
   G. THERMAL RESISTANCE, JUNCTION TO CASE (θJC): 5.0°C/W
   H. OPERATING AND SHORTAGE TEMPERATURE RANGE (TJ, TSTG): -55 TO +150°C
   J. CASE STYLE: TO-126/SOT-32
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   SGS SEMI-CONDUCTOR CORP
   1000 E BELL RD
   PHOENIX AZ 85022
   PART NO. BD235
   CAGE CODE 66958
4. SPEC ANSI Y14.5-1975 APPLIES.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	DM
A	INC NOR D0I3096 90-11-06 (ECP D1I2047 92-01-29)	93-03-26	[illegible]

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DWG
PART NO. 11784689

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

		MECHANICAL PROPERTIES	
		YP	
		TS	
		EL2	
	TEMHL	RA	
11784711	ILTEM	BH	
11784523	THMTG		
NEXT ASSY	USED ON	RH	
APPLICATION			

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± (0.010/0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-21

DRAFTSMAN TK CHECKER WB
ENGR JJP ENGR DM
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

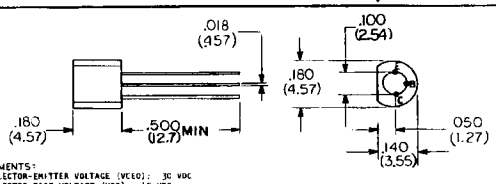
TRANSISTOR, NPN
POWER, PLASTIC

SIZE B FSCM NO. 19200 11784689
SCALE 2/1 UNIT WT. SHEET

ARRADCOM FORM 66 AUG 77 REPLACES DARPA FORM 1035 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOM R 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D0I3096 90-11-06 (ECP D1I2047 92-01-29)	88-03-26	



NOTES:

1. REQUIREMENTS:
   A. COLLECTOR-EMITTER VOLTAGE (VCEO): 30 VDC
   B. COLLECTOR-BASE VOLTAGE (VCB): 45 VDC
   C. EMITTER-BASE VOLTAGE (VEB): 50 VDC
   D. COLLECTOR CURRENT, PEAK (ICM): 100 MA
   E. TOTAL POWER DISSIPATION @ 25°C (PD): 300 MW
   F. OPERATING TEMPERATURE RANGE (TJ): -55 TO +150°C
   G. CASE STYLE: TO92
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   A. NATIONAL SEMI-CONDUCTOR CORP.....
      P.O.BOX 58090
      2900 SEMICONDUCTOR DR
      SANTA CLARA CALIFORNIA 95051
      PART NO. BC184C
      CAGE CODE 27014.
   B. MICRO ELECTRONICS CORP
      3370 MONTGOMERY DR
      SANTA CLARA CA 95051
      PART NO. BC184
      CAGE CODE 56652
4. SPEC ANSI Y14.5-1973 APPLIES.

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DWG

PART NO. 11784690

APPLICATION	
NEXT ASSY	USED ON
11784811	
11784808	
11784211	ILTEM
11784214	TEMHL
11784521	THMTG

MECHANICAL PROPERTIES	
YP	
TS	
EL2	
RA	
RH1	
RH	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-21
DRAFTSMAN TK CHECKER J.C.S.
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

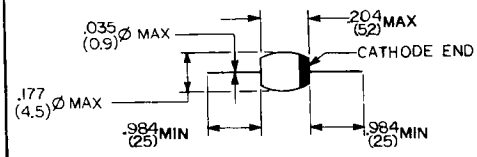
TRANSISTOR, NPN
SMALL SIGNAL, PLASTIC

SIZE B FSCM NO. 19200 11784690
SCALE 4/1 UNIT WT. SHEET

ARRADCOM FORM 68 AUG 77 REPLACES SMRPA FORM 1030 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
—	PRODUCTION RELEASE ERR F6I4013	861209	KM
A	INC NOR D0I3096 90-11-06 (ECP D1I2047 92-06-23)	93-03-26	



NOTES:

1. REQUIREMENTS:
   A. REVERSE VOLTAGE (VR): 400 V
   B. REPETITIVE REVERSE VOLTAGE MAX. (VRRM): 400 V
   C. PEAK SURGE FORWARD CURRENT (IFSM): 30 AMP
   D. AVERAGE FORWARD CURRENT (IF): 1 AMP
   E. FORWARD VOLTAGE DROP AT 1 AMP (VF): 1.2 V
   F. TEMPERATURE RANGE (TJ): -65°C TO +175°C
   G. SPEC ANSI Y14.5-1973 APPLIES.
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   A. GENERAL ELECTRIC
      SEMI-CONDUCTOR DIV
      BLDG 7 ELECTRONICS PARK
      SYRACUSE, N Y 13221
      PART NO. 1N5060
      CAGE CODE 03508
   B. FAIRCHILD SEMI-CONDUCTOR CORP
      10400 RIDGEVIEW CT
      CUPERTINO, CA 95014
      PART NO. 1N4004
      CAGE CODE 07263
   3. NOTE 3 CONTINUED
      MOTOROLA SEMICONDUCTOR PRODUCTS
      5005 E. MCDOWELL RD.
      PHOENIX AZ 85036
      CAGE CODE 04713
      P/N 1N4004
      GENERAL INSTRUMENT
      POWER SEMICONDUCTOR DIV
      600 W. JOHN ST
      HICKSVILLE, NY 11802-0709
      CAGE CODE 14936
      P/N 1N4004

DIMENSIONS IN ( ) ARE MILLIMETERS

SPECIFICATION CONTROL DWG
PART NO. 11784693

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

11784523	TEMHL
11784514	ILTEM
11784504	THMTG
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES	
YP	
TS	
EL2	
RA	
BH	
RH	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± —

ORIGINAL DATE OF DRAWING 79-09-14
DRAFTSMAN TK CHECKER EMC
ENGR JVP ENGR DM
ENGR ENGR

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DOVER, NEW JERSEY 07801

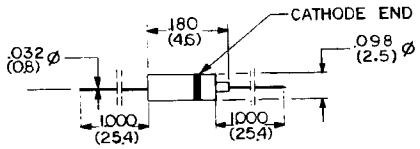
DIODE

SIZE	FSCM NO.	
B	19200	11784693
SCALE 4/1	UNIT WT.	SHEET

ARRADCOM FORM 66 AUG 77 REPLACES SARPA FORM 1038 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

DRAWING SIZE B
(ARRADCOMR 70-12)

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
–	PRODUCTION RELEASE ERR F6I4013	861209	
A	INC NOR D8I4545 89-02-14	89-05-03	
B	INC NOR D8I2028 88-08-15 (ECP D9I2016 89-07-11)	89-11-07	
C	INC NOR D9I4466 90-02-21	90-07-20	
D	INC NOR D0I3086 90-11-06 (ECP D1I2047 92-06-23)	93-03-26	



NOTES:

1. REQUIREMENTS:-
   A. ZENER VOLTAGE: 9.1 V
   B. ZENER VOLTAGE TOLERANCE: ±5%
   C. POWER DISSIPATION: 1 WATT
   D. OUTLINE DIMENSION EQUAL TO DO-41
   E. SPEC ANSI Y14.5-1973 APPLIES.
2. IDENTIFICATION OF THE "SUGGESTED SOURCES OF SUPPLY" HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM.
3. SUGGESTED SOURCES OF SUPPLY:
   FENWAL ELECTRONICS/APD
   450 FORTUNE BLVD.
   MILFORD, MA 01757
   PART NO. IN4739A
   CAGE CODE 50273

   MOTOROLA SEMICONDUCTOR PRODUCTS
   PO. BOX 20912
   5005 E. MCDOWELL RD
   PHOENIX AZ 85036
   CAGE CODE 04713
   P/N IN4739A

DIMENSIONS IN ( ) ARE MILLIMETERS

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

SPECIFICATION CONTROL DWG
PART NO. 11784696

	TEMHL
	ILTEM
11784523	THMTG
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES	
YP	
TS	
EL2	
RA	
BH	
RH	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ± .010 (0.25)
FRACTIONS ± — ANGLES ± 1/2

ORIGINAL DATE OF DRAWING 79-09-21
DRAFTSMAN TK CHECKER WB
ENGR ENGR
ENGR ENGR

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

DIODE ZENER, 1WATT

SIZE	FSCM NO.	
B	19200	11784696
SCALE 4/1	UNIT WT.	SHEET

ARRADCOM FORM 66 AUG 77 REPLACES DARPA FORM 1039 OCT 75 WHICH MAY BE USED UNTIL EXHAUSTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
	A	REDRAWN WITH CHANGE NOR G722000	88-01-08	88-01-08
	B	NOR G352002 93070(	93036	

ANSI Y14.5M-1982 SYMBOLS

DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION	SYMBOLS
MAX MATERIAL COND	Ⓜ	SPHERICAL DIAMETER	SØ	DIMENSION ORIGIN	⊕	CBORE OR SPOTFACE	⌴	ALL AROUND	
REGARDLESS OF FEATURE SIZE	Ⓢ	RADIUS	R	TARGET POINT	×	DEPTH	↧	REFERENCE	(XXX)
LEAST MATERIAL COND	Ⓛ	SPHERICAL RADIUS	SR	OUT OF SCALE	XXX	NUMBER OF PLACES	6X	ARC LENGTH	XXX⌒
DIAMETER	Ø	BASIC DIMENSION	[XXX]	SQUARE	□	SLOPE		DATUM TARGET	Øx / xx
		DATUM FEATURE	-X-	COUNTERSINK	∨	CONICAL TAPER			

GEOMETRIC AND POSITIONAL TOLERANCE TABLE

CHARACTERISTIC	D-30-1-7 (1946)		MIL-STD-8A (1953)	MIL-STD-8B (1959)		MIL-STD-8C (1963)		USASI Y14.5-1966		ANSI Y14.5-1973		ANSI Y14.5M-1982	
	INDEPENDENT	DEPENDENT	INDEPENDENT	RFS	MMC	RFS	MMC	RFS	MMC	RFS	MMC	RFS	MMC
CONCENTRICITY (COAXIALITY)	◎A XXX	A XXX	◎A XXXTIR	◎A XXXTIR	◎A Ⓢ XXXTIR Ⓢ	◎A XXXTIR	◎A Ⓢ XXXTIR Ⓢ	↗A XXX ◎A XXX DIA	◎A XXX DIA	↗A XXX TOTAL ◎A Ø XXX	◎A Ⓢ Ø XXX Ⓢ	↗XXX A ◎Ø XXX A	◎Ø XXX Ⓜ A Ⓜ
PERPENDICULARITY (SQUARENESS)	⊥A XXX	A XXX	⊥A XXX	⊥A XXX	⊥A Ⓢ XXX Ⓢ	⊥A XXX	⊥A Ⓢ XXX Ⓢ	⊥A XXX	⊥A Ⓢ XXX Ⓢ	⊥A XXX	⊥A Ⓢ XXX Ⓢ	⊥XXX A	⊥XXX Ⓜ A Ⓜ
PARALLELISM	∥A XXX	A XXX	∥A XXX	∥A XXX	∥A Ⓢ XXX Ⓢ	∥A XXX	∥A Ⓢ XXX Ⓢ	∥A XXX	∥A Ⓢ XXX Ⓢ	//A XXX	//A Ⓢ XXX Ⓢ	//XXX A	//XXX Ⓜ A Ⓜ
SYMMETRY	⌯A XXX	A XXX	—	⌯A XXX	⌯A Ⓢ XXX Ⓢ	⌯A XXX	⌯A Ⓢ XXX Ⓢ	⌯A XXX TOTAL ◎A XXX TOTAL	◎A XXX TOTAL	⌯A XXX ◎A Ⓢ XXX Ⓢ	◎A Ⓢ XXX Ⓢ	◎XXX Ⓜ A Ⓜ	◎XXX Ⓜ A Ⓜ
ANGULARITY	—	—	∠A XXX	∠A XXX	∠A Ⓢ XXX Ⓢ	∠A XXX	∠A Ⓢ XXX Ⓢ	∠A XXX	∠A Ⓢ XXX Ⓢ	∠A XXX	∠A Ⓢ XXX Ⓢ	∠XXX A	∠XXX Ⓜ A Ⓜ
INTERRELATED CHARACTERISTICS (DIA AND SURFACE AT RIGHT ANGLE TO COMMON AXIS)	◎ A D XXX	A D XXX	—	◎ A D XXX TIR (TOL RFS)	◎ A Ⓢ D XXX TIR Ⓢ (DATUM MMC)	◎ A D XXX TIR (DATUM RFS)	◎ A Ⓢ D XXX TIR Ⓢ (TOL RFS)	↗A Ø XXX (DATUM MMC)	↗A Ø D XXX DIA (TOL RFS)	↗A B XXX TOTAL (DATUM MMC)	↗A Ⓢ B XXX Ⓢ (TOL RFS)	↗XXX A B (DATUM MMC)	◎Ø XXX Ⓜ A Ⓜ B ↗XXX A Ⓜ B Ⓜ (TOL RFS)
FLATNESS	—	—	⏥XXX	⏥XXX	—	—XXX	—	⏥XXX	—	⏥XXX	—	⏥XXX XXX .010/.25X.25	—
STRAIGHTNESS	—	—	⏜XXX	⏜XXX	⏜XXX Ⓢ	—XXX	—XXX Ⓢ	—XXX	—	—XXX —Ø XXX	—Ø XXX Ⓢ	—XXX —Ø XXX Ø XXX Ø XXX/XXX	—Ø XXX Ⓢ
POSITION (HOLES)	—	XXX	⌖A XXX DIA	⌖A Ⓢ XXX DIA Ⓢ	⌖A XXX DIA	⌖A Ⓢ XXX DIA Ⓢ	⌖A XXX DIA	⌖A Ⓢ XXX DIA Ⓢ	⌖A XXX DIA	⌖A Ⓢ Ø XXX Ⓢ	⌖A Ⓢ Ø XXX Ⓢ	⌖Ø XXX Ⓜ A Ⓜ	⌖Ø XXX Ⓜ A Ⓜ
POSITION (SLOTS)	—	—	—	⌖A Ⓢ XXX TOTAL Ⓢ	⌖A XXX TOTAL	⌖A Ⓢ XXX TOTAL Ⓢ	⌖A XXX TOTAL	⌖A Ⓢ XXX TOTAL Ⓢ	⌖A XXX TOTAL	⌖A Ⓢ XXX Ⓢ	⌖A Ⓢ XXX Ⓢ	⌖XXX Ⓜ A Ⓜ	⌖XXX Ⓜ A Ⓜ
ROUNDNESS (RADIAL)	—	—	—	—	—	○XXX ON R	—	○XXX	—	○XXX	—	○XXX	—
ROUNDNESS (DIAMETRAL)	—	—	—	○XXX NOTE 1	—	○XXX NOTE 1	—	—	—	—	—	—	—
PROJECTED TOL ZONE	—	—	—	—	—	⌖ XXX DIA Ⓢ TOL ZONE PROJECTED XXX	⌖ XXX DIA TOL ZONE PROJECTED XXX	⌖XXX DIA Ⓢ TOL ZONE PROJECTED XXX	⌖XXX DIA TOL ZONE PROJECTED XXX	⌖A Ø XXX Ⓢ XXX Ⓢ	⌖A Ø XXX Ⓢ XXX Ⓢ	⌖Ø XXX Ⓜ A XXX Ⓜ	⌖Ø XXX Ⓜ A XXX Ⓜ
PROFILE OF A LINE	—	—	—	—	—	—	—	⌒XXX	—	⌒XXX	—	⌒XXX	—
PROFILE OF A SURFACE	—	—	—	—	—	—	USED NOTE	⌓XXX	—	⌓A XXX	—	⌓XXX A	—
RUNOUT (CIRCULAR)	—	—	—	—	—	—	—	↗A B XXX CIRCULAR	—	↗A XXX	—	↗XXX A	—
RUNOUT (TOTAL)	—	—	—	—	—	—	—	↗A B XXX	—	↗A XXX TOTAL	—	↗XXX A	—
CYLINDRICITY	—	—	—	—	—	—	—	⌭XXX	—	⌭XXX	—	⌭XXX	—
POSITION (COMPOSITE FEATURE CONTROL SYMBOL)	—	—	—	—	—	—	—	—	—	⌖ A B C Ø XXX Ⓢ A Ø XXX Ⓢ	⌖ A B C Ø XXX Ⓢ A Ø XXX Ⓢ	⌖ Ø XXX Ⓜ A B C Ø XXX Ⓜ A	⌖ Ø XXX Ⓜ A B C Ø XXX Ⓜ A
RUNOUT (TWO DATUM DIAMETERS WITH COMMON AXIS)	—	—	—	—	—	—	—	—	—	↗A-B XXX TOTAL	—	↗XXX A-B	—

NOTES:-

1- THE TOLERANCE GOVERNING THE ROUNDNESS OF A FEATURE IS THE DIFFERENCE IN THE DIAMETER OF TWO CONCENTRIC CIRCLES (IN PLANES NORMAL TO THE AXIS) BETWEEN WHICH THE SURFACE SO TOLERANCED MUST LIE.

2- PURPOSE OF THIS TABLE:
   A. TO DETERMINE WHICH DIMENSIONING AND TOLERANCING STANDARD APPLIES BASED ON SYMBOLS SHOWN ON COMPONENT DRAWINGS.
   B. TO PROVIDE FOR INTERPRETATION OF GEOMETRIC REQUIREMENTS IN ACCORDANCE WITH ANSI Y14.5M-1982, REGARDLESS OF WHICH STANDARD (IF ANY) IS SPECIFIED ON COMPONENT DRAWINGS.

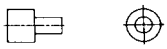
3- USE OF THIS TABLE:
   BY COMPARING DRAWING REQUIREMENTS "◎Ⓢ Ø .005 TIR Ⓢ" WITH THE TABLE AND LOCATING THE COMPARABLE GEOMETRIC TOLERANCE SYMBOL "◎Ⓜ A Ⓜ XXX TIR Ⓜ" FOR CONCENTRICITY, THE APPLICABLE STANDARD FOR INTERPRETATION WOULD BE MIL-STD-8B. IF MIL-STD-8B IS NOT AVAILABLE, THE REQUIREMENT CAN BE INTERPRETED USING ANSI Y14.5M-1982 BY USE OF THE GEOMETRIC TOLERANCE SYMBOL FOR MMC CONCENTRICITY, "⌖Ø XXX Ⓜ A Ⓜ".

4- INTERPRETATION WHEN NO TOLERANCE OF FORM AND/OR ORIENTATION IS SPECIFIED:
   A. WHEN SPECIFIC GEOMETRIC CONTROLS ARE NOT PRESCRIBED ON A DRAWING, NO ELEMENT OF ANY FEATURE SHALL EXTEND BEYOND THE BOUNDARY OF PERFECT FORM AT THE MAXIMUM MATERIAL CONDITION (MMC). SURFACES SHOWN AT IMPLIED 90° ANGLES SHALL BE PERFECTLY PERPENDICULAR AT MMC.
   B. THE ENVELOPE OF PERFECT FORM AT MAXIMUM MATERIAL CONDITION (MMC) APPLIES TO ORIENTATION (ANGULARITY, PARALLELISM, AND PERPENDICULARITY) CONTROL, SYMMETRY, COAXIALITY, INDIVIDUAL FEATURES, AND RELATIONSHIPS BETWEEN INDIVIDUAL FEATURES.
   C. DEPARTURE FROM PERFECT FORM IS ALLOWED WHEN THE FEATURE(S) DEPART FROM MMC. A TOLERANCE OF POSITION, LIMITS OF SIZE, AND ORIENTATION COMBINED IS ALLOWED EQUAL TO THE AMOUNT OF SUCH DEPARTURE.

D. WHERE THE ACTUAL SIZE OF THE FEATURE HAS DEPARTED FROM MMC TOWARD LMC, A VARIATION IN FORM IS ALLOWED EQUAL TO THE AMOUNT OF SUCH DEPARTURE.

E. THE TOTAL PERMISSIBLE VARIATION IS MAXIMUM WHEN THE FEATURE IS AT LEAST MATERIAL CONDITION (LMC), BUT CONTAINED WITHIN THE MMC BOUNDARY OF PERFECT FORM.

5- MIL-STD-8 (1949), DOES NOT PROVIDE FOR USE OF GEOMETRIC SYMBOLS; HOWEVER, DOES INCLUDE THE INTERPRETATION OF LIMITS AS DEFINED IN NOTE 4.



PERFECT FORM AT MMC
INTERRELATIONSHIP OF FEATURES AT MMC (PERFECT)

INTERRELATIONSHIP OF FEATURES AT LMC
BOUNDARY OF PERFECT FORM AT MMC

BOUNDARY OF FORM AT LMC
BOUNDARY OF PERFECT FORM AT MMC

VARIATION OF FORM ALLOWED BY SIZE TOLERANCE
RELATIONSHIP OF INDIVIDUAL FEATURES ALLOWED BY SIZE TOLERANCE

DIMENSIONS: PROPERTIES	FINIS: N/A	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON: 2 PLACE ± 3 PLACE ±	CONTRACT NUMBER / CONTRACTOR
NEXT ASSY	USED ON	MATL GRADE	DRAWN BY / CHECKED BY / DRAWING APPROVAL / DESIGN APPROVAL
APPL SCAT NOM			DESIGN ACTIVITY: NAVAL AIRWORTHY ENGINEERING, DEVELOPMENT AND ENGINEERING CENTER, PATUXENT RIVER, NAVAL AIR STATION, NEW JERSEY 07008-5049

GEOMETRIC SYMBOLS FOR DIMENSIONING AND TOLERANCING

SIZE E | CAGE CODE 19200 | 12579607 | SCALE: — | UNIT WT | SHEET

DISTRIBUTION STATEMENT A
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	NOR D513003 950321	950421	TPT

NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
   A. DOD-STD-00100D (AR)
   B. ANSI Y14.5M-1982
   C. MIL-STD-883
   D. MIL-M-38510

2. IDENTIFICATION OF THE SUGGESTED SOURCE(S) OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S).

3. ITEM IDENTIFICATION: APPLY THE FOLLOWING MARKING TO CONTAINER IN ACCORDANCE WITH MIL-STD-130.

4. ABSOLUTE MAXIMUM RATINGS (ALL IC'S):
   A. SUPPLY VOLTAGE RANGE VDD-Vss: -0.5V TO +18V
   B. INPUT CURRENT (EACH INPUT): ±10 MA
   C. INPUT VOLTAGE RANGE: (Vss-0.5V)<VI<(VDD+0.5V)
   D. STORAGE TEMP RANGE: -65°C TO +175°C
   E. MAX POWER DISSIPATION (PD): 200 MW
   F. LEAD TEMP (SOLDERING, 10 SEC): +300°C
   G. JUNCTION TEMP (TJ): +175°C

5. RECOMMENDED OPERATING CONDITIONS (ALL IC'S):
   A. SUPPLY VOLTAGE VDD-Vss: 4.5VDC TO 15VDC
   B. INPUT LOW VOLTAGE RANGE (VIL): 0-1.5VDC @ VDD=5VDC
      VOL=10% VDD
      VOH=90% VDD
      0-2.0VDC @ VDD=10VDC
      0-4.0VDC @ VDD=15VDC
   C. INPUT HIGH VOLTAGE RANGE (VIH): 3.5-5.0VDC @ VDD=5VDC
      VOL=10% VDD
      VOH=90% VDD
      8-10VDC @ VDD=10VDC
      11-15VDC @ VDD=15VDC
   D. AMBIENT OPERATING TEMP. (TA): -55°C TO +125°C
   E. LOAD CAPACITANCE: 50pF MAXIMUM

SUGGESTED SOURCE(S) OF SUPPLY

PART NO.	VENDOR ADDRESS	VENDOR CAGE CODE	VENDOR PART NO.	ITEM IDENTIFICATION (3)
9200-9356087-1	NATIONAL SEMICONDUCTOR 2900 SEMICONDUCTOR DR. SANTA CLARA, CA	27014	CD4011BMJ/883	19200-9356087-1 MFR-27014-CD4011BMJ/883
	MOTOROLA SEMICONDUCTOR PRODUCTS, INC. 5005 EAST MCDOWELL RD. PHOENIX, AZ 85008	04713	14011B/BCAJC	19200-9356087-1 MFR-04713-14011B/BCAJC
19200-9356087-2	HARRIS SEMICONDUCTOR 1301 WOODY BURKE RD. MELBOURNE, FL 32902	34371	CD40128F/3A	19200-9356087-2 MFR-34371-CD40128F/3A
	NATIONAL SEMICONDUCTOR	27014	CD4012BMJ/883	19200-9356087-2 MFR-27014-CD4012BMJ/883
	MOTOROLA SEMICONDUCTOR	04713	14012B/BCAJC	19200-9356087-2 MFR-04713-14012B/BCAJC
19200-9356087-3	NATIONAL SEMICONDUCTOR	27014	CD4013BMJ/883	19200-9356087-3 MFR-27014-CD4013BMJ/883
	MOTOROLA SEMICONDUCTOR	04713	14013B/BCAJC	19200-9356087-3 MFR-04713-14013B/BCAJC
19200-9356087-4	NATIONAL SEMICONDUCTOR	27014	CD4017BMJ/883	19200-9356087-4 MFR-27014-CD4017BMJ/883
	MOTOROLA SEMICONDUCTOR	04713	14017B/BEAJC	19200-9356087-4 MFR-04713-14017B/BEAJC

-	-	-	-	A	REV	REV STATUS
5	4	3	2	1	SHEET	OF SHEETS

SPECIFICATION CONTROL DRAWING

PART NO. 9356087

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PMSC

MECHANICAL PROPERTIES

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMAL 2 PL ± 3 PL ± FRACTION ±
THIRD ANGLE PROJECTION

NEXT ASSY | USED ON
APPLICATION

CONTRACT NUMBER
CONTRACTOR
DRAWN BY CB DATE(YR-MO-DA) 92-11-13
CHECKER
DRAWING APPROVAL
DESIGN APPROVAL

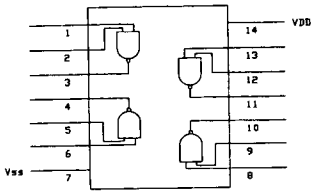
DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

INTEGRATED CIRCUIT

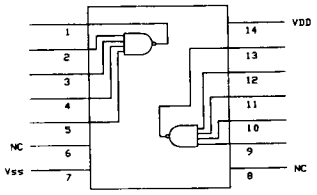
SIZE D | CAGE CODE 19200 | 9356087

SCALE ~ | UNIT WT. | SHEET 1 OF 5

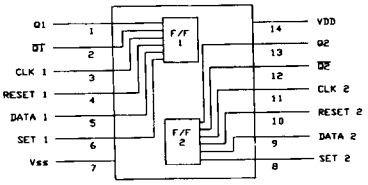
SYM	DESCRIPTION	DATE	APPROVAL
-	INC NOR DO13028 90-09-19 (ECP DO13124 91-01-09)	92-11-13	



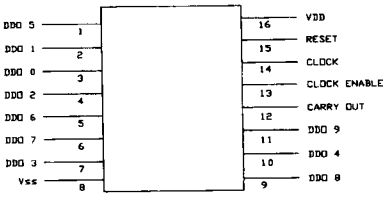
9356087-1
2 INPUT NAND GATES



9356087-2
4 INPUT NAND GATES



9356087-3
D-TYPE FLIP-FLOPS



9356087-4
DECADE COUNTER/DIVIDER

DDO: DECODED DECIMAL OUTPUT

SPECIFICATION CONTROL DRAWING

PART NO. 9356087

DISTRIBUTION STATEMENT A.
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DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

CONTRACT NUMBER

CONTRACTOR

DRAWN BY CB 92-11-13

CHECKED

DESIGN APPROVAL

DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

INTEGRATED CIRCUIT

SIZE D | CAGE CODE 19200 | 9356087

SCALE ~ | UNIT WT. | SHEET 2

SYM	DESCRIPTION	DATE	APP
-	INC NOR 00I3029 99-09-19 (EOF 00I3124 91-01-09)	92-11-12	

ELECTRICAL PERFORMANCE CHARACTERISTICS

TEST	SYMBOL	CONDITIONS Vss=0V -55°C ≤ Tc* ≤ 125°C UNLESS OTHERWISE SPECIFIED	DEVICE TYPE (PART NO.) 9356087-X	LIMITS MIN	LIMITS MAX	UNIT
POSITIVE CLAMPING INPUT TO VDD 1	VIC(POS)	Tc=25°C, VDD=GND Vss=OPEN, OUTPUT=OPEN I_I =1 MA	ALL		1.5	Vdc
NEGATIVE CLAMPING INPUT TO Vss 2	VIC(NEG)	Tc=25°C, VDD=OPEN Vss=GND, OUTPUT=OPEN I_I =-1 MA	ALL		-6	Vdc
QUIESCENT SUPPLY CURRENT	Iss	VDD=+18 V ANY COMBINATION OF INPUTS	1,2		-750	NA
			3		-2.5	µA
			4		-5	µA
HIGH LEVEL OUTPUT VOLTAGE	VOH_1	VDD=5V, IOH=-0.175 MA ANY ONE INPUT = VIL	1,2	4.2		Vdc
	VOH_2	VDD=5V, IOH=0 ANY ONE INPUT = VIL		4.95		
	VOH_3	VDD=12.5V, IOH=0 ANY ONE INPUT = VIL		11.25		
	VOH_4	VDD=15V, IOH=0		14.95		
	VOH_5	VDD=5V, IOH=0	3	14.95		Vdc
	VOH_6	VDD=15V, IOH=0		14.95		
	VOH_7	VDD=15V, IOH=0	4	14.95		Vdc
LOW LEVEL OUTPUT VOLTAGE	VOL_1	VDD=5V, IOL=0 ALL INPUTS = VIH	1,2		0.05	Vdc
	VOL_2	VDD=12.5, IOL=0 ALL INPUTS = VIH			1.25	
	VOL_3	VDD=15V, IOL=0			0.05	
	VOL_4	VDD=15V, IOL=0	3		0.05	
	VOL_5	VDD=15V, IOL=0	4		0.05	

ELECTRICAL PERFORMANCE CHARACTERISTICS

TEST	SYMBOL	CONDITIONS Vss=0V -55°C ≤ Tc* ≤ 125°C UNLESS OTHERWISE SPECIFIED		DEVICE TYPE (PART NO.) 9356087-X	LIMITS MIN	LIMITS MAX	UNIT
INPUT HIGH VOLTAGE	VIH_1	VDD=5V	Vo=0.5V |Io| ≤ 1µA	1,2		3.5	Vdc
	VIH_2	VDD=10V	Vo=1.0V |Io| ≤ 1µA			7.0	
	VIH_3	VDD=15V	Vo=1.5V |Io| ≤ 1µA			11.0	
	VIH_1	VDD=5V	Vo=4.5V |Io| ≤ 1µA	3		3.5	Vdc
	VIH_2	VDD=10V	Vo=9.0V |Io| ≤ 1µA			7.0	
	VIH_3	VDD=15V	Vo=13.5V |Io| ≤ 1µA			11.0	
	VIH_1	VDD=5V		4		3.5	Vdc
	VIH_2	VDD=10V				7.0	
	VIH_3	VDD=15V				11.0	
INPUT LOW VOLTAGE	VIL_1	VDD=5V	Vo=4.5V |Io| ≤ 1µA	1,2,3		1.5	Vdc
	VIL_2	VDD=10V	Vo=9.0V |Io| ≤ 1µA			3	
	VIL_3	VDD=15V	Vo=13.5V |Io| ≤ 1µA			4	
	VIL_1	VDD=5V		4		1.5	Vdc
	VIL_2	VDD=10V				3	
	VIL_3	VDD=15V				4	

* Tc=FREE AIR TEMP
[1] VDD=POSITIVE SUPPLY VOLTAGE
[2] Vss=NEGATIVE SUPPLY VOLTAGE
[3] C_L = INPUT TERMINAL-TO-Vss CAPACITANCE

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SPECIFICATION CONTROL DRAWING

PART NO. 9356087

DO NOT SCALE DRAWING	CONTRACT NUMBER	DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000	INTEGRATED CIRCUIT
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMAL ± FRACTION ±	CONTRACTOR		
2 PL ± 3 PL ±	DRAWN BY CR 92-11-12		
THIRD ANGLE PROJECTION	CHECKER MR		
NEXT ASSY / USED ON	DRAWING APPROVAL		SIZE D / CAGE CODE 19200 / 9356087
APPLICATION	DESIGN APPROVAL		SCALE ~ / UNIT WT. / SHEET 3

SYM	DESCRIPTION	DATE	APPROVAL
-	INC NOR DOI3020 90-09-19 (ECP DOI3124 91-01-09)	92-11-13	

ELECTRICAL PERFORMANCE CHARACTERISTICS

TEST	SYMBOL	CONDITIONS Vss=0V -55°C ≤ Tc= ≤ 125°C UNLESS OTHERWISE SPECIFIED	DEVICE TYPE (PART NO.) 9356087-X	LIMITS MIN	LIMITS MAX	UNIT
OUTPUT LOW (SINK) CURRENT	I_{OL1}	VDD=5V, Vin=5V VOL=0.4V	1,2	0.36		MA
	I_{OL2}	VDD=15V, Vin=15V VOL=1.5V		2.4		
	I_{OL1}	VDD=5V, VOL=0.4V	3	0.36		MA
	I_{OL2}	VDD=15V, VOL=1.5V		2.4		
	I_{OL1}	VDD=5V, Vin=0V OR 5V VOL=0.4V	4	0.36		MA
	I_{OL2}	VDD=15V, Vin=0v or 15v VOL=1.5V		2.4		
OUTPUT HIGH (SOURCE) CURRENT	I_{OH1}	VDD=5V, ANY ONE INPUT=Vss ALL OTHER INPUTS = VDD VOH=4.6V	1,2	-0.36		MA
	I_{OH2}	VDD=15V, ANY ONE INPUT=Vss ALL OTHER INPUTS = VDD VOH=13.5V		-2.4		
	I_{OH1}	VDD=5V, VOH=4.6V	3	-0.36		MA
	I_{OH2}	VDD=15V, VOH=13.5V		-2.4		
	I_{OH1}	VDD=5V, Vin=0V OR 5V VOH=4.6V	4	-0.36		MA
	I_{OH2}	VDD=15V, Vin=0V OR 15V VOH=13.5V		-2.4		
INPUT LEAKAGE CURRENT	I_{IH}	EACH INPUT VDD=18V MEASURE INPUTS SEQUENTIALLY	ALL		45	NA
	I_I				-45	
INPUT TEST VOLTAGE	V_{ZAP}		ALL	400		V
INPUT CAPACITANCE	C_I	VDD=0V, f=1 MHZ Tc=25°C	ALL		12	pF

ELECTRICAL PERFORMANCE CHARACTERISTICS

TEST	SYMBOL	CONDITIONS Vss=0V -55°C ≤ Tc= ≤ 125°C UNLESS OTHERWISE SPECIFIED	DEVICE TYPE (PART NO.) 9356087-X	LIMITS MIN	LIMITS MAX	UNIT
PROPAGATION DELAY TIME HIGH TO LOW LEVEL	t_{PHL}	VDD=5V, C_L =50pf	1	10	300	nS
			2	16	490	nS
			3	25	750	nS
		VDD=5V, CLOCK TO DECODED OUTPUTS	4		1.40	µS
		VDD=5V, RESET TO DECODED OUTPUTS 1-9			1.40	µS
		VDD=5V, CLOCK TO CARRY OUTPUT			1.12	µS
PROPAGATION DELAY TIME LOW TO HIGH LEVEL	t_{PLH}	VDD=5V, C_L =50pf	1	8	225	nS
			2	13	375	nS
			3	28	825	nS
		VDD=5V, CLOCK TO DECODED OUTPUTS	4		1.40	µS
		VDD=5V, CLOCK TO CARRY OUTPUT			1.12	µS
		VDD=5V, RESET TO 0 OUTPUT			1.40	µS
		VDD=5V, RESET TO CARRY OUTPUT			1.12	µS
PROPAGATION DELAY TIME HIGH TO LOW LEVEL (SET AND RESET)	t_{PHL} (R OR S)	VDD=5V, C_L =50pf	3	28	825	nS
PROPAGATION DELAY TIME LOW TO HIGH LEVEL (SET AND RESET)	t_{PLH} (R OR S)	VDD=5V, C_L =50pf	3	21	630	nS
TRANSITION TIME HIGH TO LOW LEVEL	t_{THL}	VDD=5V, C_L =50pf	1	15	450	nS
			2	28	825	nS
			3	15	450	nS
		VDD=5V, CARRY AND DECODED OUTPUTS	4	10	280	nS

SPECIFICATION CONTROL DRAWING

PART NO. 9356087

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DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMAL ± FRACTION ±
2 PL ±
3 PL ±
THIRD ANGLE PROJECTION

CONTRACT NUMBER
CONTRACTOR
DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

INTEGRATED CIRCUIT

DRAWN BY CB 92-11-13
CHECKED RC
DRAWING APPROVAL
DESIGN APPROVAL

SIZE D CAGE CODE 19200 9356087

SCALE ~ UNIT WT. SHEET 4

MECHANICAL PROPERTIES
NEXT ASSY USED ON
APPLICATION
MFG ENGR

SYM	DESCRIPTION	DATE	APPROVAL
-	INC NOR B013020 90-09-19 (ECP B013124 91-01-09)	92-11-13	

ELECTRICAL PERFORMANCE CHARACTERISTICS

TEST	SYMBOL	CONDITIONS Vss=0V -55°C ≤ Tc≤ 125°C UNLESS OTHERWISE SPECIFIED	DEVICE TYPE (PART NO.) 9356087-X	LIMITS MIN	LIMITS MAX	UNIT
TRANSITION TIME LOW TO HIGH	t_{TLH}	VDD=5V, C_L =50pf	1	15	450	nS
			2	21	640	nS
			3	18	525	nS
		VDD=5V, CARRY AND DECODED OUTPUTS	4	10	504	nS
MAXIMUM CLOCK FREQUENCY	f_{MAX}	VDD=5V, C_L =50pf	3		1	MHZ
			4		1.43	MHZ
MAXIMUM CLOCK TRANSITION TIME	t_{TLHCL}	VDD=5V, C_L =50pf	3		10	µS
MINIMUM CLOCK PULSE WIDTH	t_p	VDD=5V, C_L =50pf	3	300		nS
		VDD=5V, VIH=5V	4	350		nS
MINIMUM RESET PULSE WIDTH	t_{pH}	VDD=5V, VIH=5V	4	560		nS
SET-UP TIMES	t_{SHL} t_{SLH}	VDD=5V, C_L =50pf	3		225	nS
HOLD TIMES	t_{HHL} t_{HLH}	VDD=5V, C_L =50pf	3		225	nS
MINIMUM SETUP TIME, HIGH TO LOW LEVEL	t_{SHL}	VDD=5V, CLOCK INPUT TO CLOCK ENABLE (CARRY, DECODED OUTPUTS)	4	336		nS
		VDD=5V, CLOCK INPUT TO RESET		560		nS

SPECIFICATION CONTROL DRAWING

PART NO. 9356087

DISTRIBUTION STATEMENT A. APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

NEXT ASSY | USED ON

APPLICATION

CONTRACT NUMBER

CONTRACTOR

DRAWN BY CB 92-11-13

CHECKED

DESIGN APPROVAL

DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000

INTEGRATED CIRCUIT

SIZE D | CODE IDENT 19200 | 9356087

SCALE ~ | LAST SY. | SHEET 5

DRAWING SIZE A

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION	DATE(YR-MO-DA)	APPROVED
		C	NOR D4I3066 941028	950119	HJS
		D	NOR H7K2000 970423	970514	JB

1. PACKAGING: THE MATERIAL, METHODS, PROOCESSES, AND PROCEDURES SPECIFIED HEREON SHALL CONFORM TO THE REQUIREMENTS OF MIL-STD-2073-1C.
2. PRESERVATION
2.1 LEVEL A: THE PRINTED CIRCUIT BOARD SHALL BE PACKAGED METHOD 41 WITH A SUPPLEMENTARY UNIT CONTAINER.
2.1.1 CLEANING SHALL BE AS SPECIFIED ON THE APPLICABLE SPECIAL PACKAGING INSTRUCTION (SPI).
2.1.2 DRYING SHALL BE AS SPECIFIED ON THE APPLICABLE SPI.
2.1.3 PRESERVATIVE: N/A
2.1.4 UNIT PACK:
   A. THE CLEAN AND DRIED CIRCUIT CARD SHALL BE WRAPPED IN MIL-B-81705, TYPE II, CLASS 1 OR PLACED IN A BAG MADE OF THE SPECIFIED MATERIAL.
   B. PLACE THE WRAPPED OR BAGGED CARD IN A BAG MADE IN ACCORDANCE WITH (IAW) MIL-B-117, TYPE I, CLASS F.
   C. PLACE THE WRAPPED AND BAGGED CARD IN A FAST PACK IAW PPP-B-1672, TYPE II, STYLE D (SIZE AS REQUIRED). CARDS THAT WILL NOT FIT IN A PPP-B-1672 MAY BE UNIT PACKED IN A FIBERBOARD CONTAINER (IAW ASTM D5118) CUSHIONED WITH ANTISTATIC CUSHIONING (SIZE OF CONTAINER AS APPROPRIATE. CLOSE IAW APPLICABLE CONTAINER SPECIFICATION).
2.2 LEVEL B: N/A
2.3 LEVEL C: N/A
3. PACKING: SEE SPI
4. MARKING: MARK IAW MIL-STD-129
4.1 SPECIAL MARKING: ESD-CAUTION LABEL REQUIRED.

DISTRIBUTION STATEMENT A.
APPROVED FOR PUBLIC RELEASE;
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PART NO. 9370051

DO NOT SCALE DRAWING	CONTRACT NUMBER	DESIGN ACTIVITY U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER PICATINNY ARSENAL, NEW JERSEY 07806-5000
PMIC	CONTRACTOR	PACKAGING FOR PRINTED CIRCUIT BOARDS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMAL 2 PL ± 3 PL ± FRACTION ±	DRAWN BY JS / DATE(YR-MO-DA) 83-08-01	
THIRD ANGLE PROJECTION	CHECKER / ENGINEER	
MATL ENGR / CADDS REV - 887	DRAWING APPROVAL JAMES SPILMAN	SIZE A / CAGE CODE 19200 / 9370051
	DESIGN APPROVAL PHILIP KORMAN	SCALE / UNIT WT. / SHEET

SMCAR FORM 65, 1 NOV 88(TEMP) REPLACES SMCAR FORM 65, 1 JUL 87(TEMP) WHICH MAY BE USED UNTIL EXHAUSTED