								F	REVISI	ONS										
LTR					C	ESCF	RIPTIO	N					DA	ATE (Y	R-MO-E	DA)		APPF	ROVED)
A	Chai	nges ir	n acco	rdance	e with	NOR 9	5962-F	R127-9	6.				96-05-21			K. A. Cottongim				
В				02 with class K product assurance and radiation 98-05-06 unce levels.					K. A. Cottongim											
REV																				
SHEET																				
SHEET																				
SHEET REV SHEET REV STATU				RE'	V		В	В	В	В	В	В	В	В	В	В	В	В	В	E
REV SHEET REV SHEET REV STATE OF SHEET				—	V EET		B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B 10	B 11	B 12	B 13	B 14
SHEET REV SHEET REV STATE OF SHEET	·s			SHI			1	-			5	6 DEFEN	7 NSE S	8 UPPL P. C	9 Y CEN	10 NTER (3990	11 COLU	12 IMBUS	13	
SHEET REV SHEET REV STATU OF SHEET PMIC N/A STA	ANDA	CUI	T	SHI PREI Steve	EET PARED	ncan BY	1	-			5	6 DEFEN	7 NSE S	8 UPPL P. C	9 Y CEN	10	11 COLU	12 IMBUS	13	 -
SHEET REV SHEET REV STATUOF SHEET PMIC N/A STA MICRO DR. THIS DRAW FOR	ANDA OCIR AWIN WING IS A	CUI IG VAILABI ALL		SHI PREI Steve	PARED L. Dur CKED I	BY Jones	1	-		4 MICI	5 I	6 DEFEN	7 NSE S	8 UPPL P. C	9 Y CEN), BOX , OHIC	10 NTER (3990) 432	11 COLU	12 IMBUS	13	
SHEET REV SHEET REV STATE OF SHEET PMIC N/A STA MICRO DR. THIS DRAW FOR DEP	ANDA OCIR AWIN WING IS A I USE BY PARTMEN ENCIES C	CUI IG VAILABI ALL ITS OF THE	LE	SHI PREI Steve CHEC Mic	PARED E. Dur CKED I chael C.	BY Jones BY Cottongi	1	2		4 MICI	5 I ROCIF	6 CORCUIT, , DC/	7 NSE S	8 UPPL P. C MBUS RID,	9 Y CEN), BOX , OHIC	10 NTER (3990) 432 R, ±5	11 COLU 16-500 VOLT	12 IMBUS	13 AL	1.

DSCC FORM 2233

APR 9

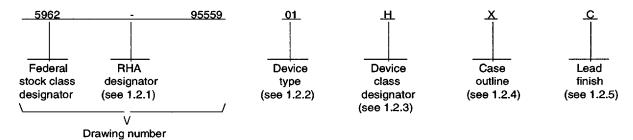
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

5962-E305-98

■ 9004708 0036543 65T **■**

1. SCOPE

- 1.1 <u>Scope</u>. This drawing documents five product assurance classes, class D (lowest reliability), class E, (exceptions), class G (lowest high reliability), class H (high reliability), and class K, (highest reliability) and a choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN). When available, a choice of radiation hardness assurance (RHA) levels are reflected in the PIN.
 - 1.2 PIN. The PIN shall be as shown in the following example:



- 1.2.1 <u>Radiation hardness assurance (RHA) designator</u>. Device classes H and K RHA marked devices shall meet the RHA levels and shall be marked with the appropriate RHA designator as specified in paragraph 4.3.5 herein. A dash (-) indicates a non-RHA device.
 - 1.2.2 <u>Device type(s)</u>. The device type(s) shall identify the circuit function as follows:

Device type	Generic number	Circuit function
01	MHF+2805D/883, MHF+2805DF/883	DC-DC converter, 12 W, ±5 V outputs
02	SMHF+2805D/XX, SMHF+2805DF/XX	DC-DC converter, 12 W, ±5 V outputs

1.2.3 <u>Device class designator</u>. This device class designator shall be a single letter identifying the product assurance level as follows:

Device class

Device performance documentation

D, E, G, H or K

Certification and qualification to MIL-PRF-38534

1.2.4 <u>Case outline(s)</u>. The case outline(s) shall be as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	<u>Terminals</u>	Package style
X	See figure 1	8	Dual-in-line
Z	See figure 1	8	Flange package

- 1.2.5 Lead finish. The lead finish shall be as specified in MIL-PRF-38534.
- 1.3 Absolute maximum ratings. 1/

Input voltage range	-0.5 V dc to +50 V dc
Power dissipation (PD)	8 W
Output power	12 W
Lead soldering temperature (10 seconds)	+300° C
Storage temperature range	-65°C to +150°C

1/ Stresses above the absolute maximum rating may cause permanent damage to the device. Extended operation at the maximum levels may degrade performance and affect reliability.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000		REVISION LEVEL B	SHEET 2

DSCC FORM 2234 APR 97

9004708 0036544 596 **3**

1.4 Recommended operating conditions.

 Input voltage range
 +16 V dc to +40 V dc

 Case operating temperature range (TC)
 -55°C to +125°C

2. APPLICABLE DOCUMENTS

2.1 <u>Government specification, standards, and handbook</u>. The following specification, standards, and handbook form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solitation.

SPECIFICATION

DEPARTMENT OF DEFENSE

MIL-PRF-38534 - Hybrid Microcircuits, General Specification for.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

MIL-STD-973 - Configuration Management.
MIL-STD-1835 - Microcircuit Case Outlines.

HANDBOOK

DEPARTMENT OF DEFENSE

MIL-HDBK-780 - Standard Microcircuit Drawings.

(Unless otherwise indicated, copies of the specification, standards, and handbook are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 <u>Order of precedence</u>. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

- 3.1 Item requirements. The individual item performance requirements for device classes D, E, G, H, and K shall be in accordance with MIL-PRF-38534. Compliance with MIL-PRF-38534 may include the performance of all tests herein or as designated in the device manufacturer's Quality Management (QM) plan or as designated for applicable device class. Therefore, the tests and inspections herein may not be performed for applicable device class (see MIL-PRF-38534). Futhermore, the manufacturers may take exceptions or use alternate methods to the tests and inspections herein and not perform them. However, the performance requirements as defined in MIL-PRF-38534 shall be met for the applicable device class. The modification in the QM plan shall not affect the form, fit, or function as described herein.
- 3.2 <u>Design, construction, and physical dimensions</u>. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38534 and herein.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	3

DSCC FORM 2234 APR 97

9004708 0036545 422

- 3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.4 herein and figure 1.
- 3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.
- 3.3 <u>Electrical performance characteristics</u>. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full specified operating temperature range.
- 3.4 <u>Electrical test requirements</u>. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are defined in table I.
- 3.5 <u>Marking of device(s)</u>. Marking of device(s) shall be in accordance with MIL-PRF-38534. The device shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's vendor similar PIN may also be marked as listed in QML-38534.
- 3.6 <u>Data</u>. In addition to the general performance requirements of MIL-PRF-38534, the manufacturer of the device described herein shall maintain the electrical test data (variables format) from the initial quality conformance inspection group A lot sample, for each device type listed herein. Also, the data should include a summary of all parameters manually tested, and for those which, if any, are guaranteed. This data shall be maintained under document revision level control by the manufacturer and be made available to the preparing activity (DSCC-VA) upon request.
- 3.7 <u>Certificate of compliance</u>. A certificate of compliance shall be required from a manufacturer in order to supply to this drawing. The certificate of compliance (original copy) submitted to DSCC-VA shall affirm that the manufacturer's product meets the performance requirements of MIL-PRF-38534 and herein.
- 3.8 <u>Certificate of conformance</u>. A certificate of conformance as required in MIL-PRF-38534 shall be provided with each lot of microcircuits delivered to this drawing.
 - 4. QUALITY ASSURANCE PROVISIONS
- 4.1 <u>Sampling and inspection</u>. Sampling and inspection procedures shall be in accordance with MIL-PRF-38534 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.
 - 4.2 Screening. Screening shall be in accordance with MIL-PRF-38534. The following additional criteria shall apply:
 - a. Burn-in test, method 1015 of MIL-STD-883.
 - (1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.
 - (2) T_C as specified in accordance with table I of method 1015 of MIL-STD-883.
 - b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	4

9004708 0036546 369

Test	Symbol	Symbol Conditions 1/ $-55^{\circ}C \leq T_{C} \leq +125^{\circ}C$ $V_{IN} = 28V \text{ dc } \pm 5 \text{ percent},$		Group A subgroups	Device type	Lin	nits	Unit										
		no external s	c ±5 percent, sync, C _L = 0, wise specified			Min	Мах											
Output voltage	+VOUT	+lOUT = +1.2 A		1	01,02	4.950	5.050	v										
				2,3	01,02	4.850	5.150											
			L, R	1,2,3	02	4.750	5.250											
	-Vout	-l _{OUT} = -1.2 A		1	01,02	-4.920	-5.080											
				2,3	01,02	-4.820	-5.180											
			L, R	1,2,3	02	-4.720	-5.280											
Output current 2/	lout	V _{IN} = 16, 28, and	d 40 V dc	1,2,3	01	0.0	2.4	A										
		(sum of both outp	outs)		02	0.0	2.4											
			L, R	1,2,3	02	0.0	2.4											
Output ripple 3/	V _{RIP}	±l _{OUT} = ±1.2 A, B.W. = 10 kHz to 2 MHz		1,2	01		80	mV p-										
voltage (±V _{OUT})	1	B.W. = 10 kHz to	2 MHz		02		160											
				3	01		120											
					02		240											
													L, R	1,2,3	02		300	
Line regulation +VOUT	VRLINE	±l _{OUT} = ±1.2 A, V _{IN} = 16 and 40	V dc	1,2,3	01,02		50	mV										
			L, R	1,2,3	02		100											
-Vout				1,2,3	01		80	mV										
					02		100											
			L, R	1,2,3	02		200	ļ <u></u>										
Load regulation +VOUT	VRLOAD	±l _{OUT} = 0 to ±1.	2 A	1,2,3	01,02		50	mV										
			L, R	1,2,3	02		100											
-Vout				1,2,3	01		100											
					02		150											
			L, R	1,2,3	02		300											

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	5

■ 9004708 0036547 2T5 ■

Test	Symbol	-55°C ≤	ditions <u>1</u> / T _C ≤ +125°C	Group A subgroups	Device type	Limits		Unit
		no externa	dc ±5 percent, Il sync, C _L = 0, erwise specified			Min	Мах	
Cross regulation 4/ (-VOUT)	X _{REG}	+l _{OUT} = +1.2 A to +0.24 mA, -l _{OUT} = -1.2 A, T _C = +25°C		1	01,02		7.5	%
		-l _{OUT} = -1.2 A +l _{OUT} = +1.2	to -0.24 mA, A, T _C = +25° C				7.5	
Input current	In IOUT = 0, inhibit		oit pin (pin 1) = 0	1,2,3	01,02		12	mA
			L, R		02		15	
		$I_{OUT} = 0$, inhib	IOUT = 0, inhibit pin (pin 1)		01		40	
		= open			02		50	
			L, R		02		100	
Input ripple current	IRIP	±10UT = ±1.2		1	01		50	mAp-p
		B. W. = 10 kHz	z to 10 MHz	2,3			80	
				1	02		80	
				2,3			120	
			L, R	1,2,3	02		150	
Efficiency	Eff	±l _{OUT} = ±1.2	A	1	01	77		%
				2,3		75		
				1	02	75		
				2,3]	72		
			L, R	1,2,3	02	68		
Isolation	ISO	500 V dc, T _C = +25°C	input to output	1	01,02	100		МΩ
			input to case		01,02	100		
			output to case		01,02	100		ŀ

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	6

Test	Symbol	Conditions 1/ -55°C ≤ T _C ≤ +125°C	Group A subgroups	Device Type	Lir	Unit			
		V _{IN} = 28V dc ±5 percent, no external sync, C _L = 0, unless otherwise specified			Min	Max			
Internal power	PD	PIN - POUT	1,2,3	01		6	w		
dissipation, short circuit			_	02	<u> </u>	8			
		L, R		02		8.5			
Switching frequency	FS		4	01,02	500	600	kHz		
			5,6	01,02	480	620			
		L, R	4,5,6	02	400	700			
Sync range 5/			4,5,6	01,02	500	600	kHz		
		L, R		02	500	600			
Output response to step transient load	VOTLOAD	+I _{OUT} = 0.6 A to/from 1.2 A, -I _{OUT} = 1.2 A	4,5,6	01,02	-600	+600	mV pk		
changes <u>6</u> / +VOUT				L, R		02	-1200	+1200	
-VOUT		-IOUT = 0.6 A to/from 1.2 A, -IOUT = 1.2 A	4,5,6	01,02	-600	+600			
00.		L, R		02	-1200	+1200			
Recovery time, step transient load	TT _{LOAD}	+I _{OUT} = 0.6 A to/from 1.2 A, -I _{OUT} = 1.2 A	4,5,6	01,02		500	μs		
changes <u>6</u> / <u>7</u> / +VOUT		L, R		02		1000			
-Vout		-lout = 0.6 A to/from 1.2 A, +lout = 1.2 A	4,5,6	01,02		500			
001		L, R		02		1000			

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	7

■ 9004708 0036549 078 ■

Test	Symbol	-55°C ≤ T _C	ions <u>1</u> / c ≤ +125°C	Group A subgroups	Device type	Limits		Unit
		V _{IN} = 28V do no external s unless otherw	c ±5 percent, sync, CL = 0, wise specified			Min	Max	
Output response to transient step line	VOTLINE	V _{IN} = 16 V to 4		4,5,6	01,02	-800	+800	mV pk
changes <u>8</u> / <u>9</u> /			L, R]	02	-1600	+1600	
		V _{IN} = 40 V to I _{OUT} = ±1.2 A			01,02	-800	+800	
			L, R		02	-1600	+1600	
Recovery time to transient step line	TTLINE	V _{IN} = 16 V to I _{OUT} = ±1.2 A		4,5,6	01,02		1.2	ms
changes <u>8</u> / <u>9</u> /			L, R]	02		2.4	
		$V_{IN} = 40 \text{ V to}$ $I_{OUT} = \pm 1.2 \text{ A}$			01,02		1.2	
			L, R		02		2.4	
Turn-on delay 10/	TonD	V _{IN} = 0 to 40		4,5,6	01		20	ms
		IOUT = ±1.2 A	<u> </u>		02		30	
			L, R	<u>l</u>	02		50	
Turn-on overshoot 8/	VtonOS	l _{OUT} = ±1.2 Å	4	4	01		100	mV p
				5,6			250	
				4,5,6	02		500	
			L, R	4,5,6	02		1000	
Load fault recovery	TrLF	I _{OUT} = ±1.2 A	4	4,5,6	01,02		30	ms
Z/ 8 /			L, R	}	02		50	
Capacitive load, 8/ 11/ (each output)	CL	No effect on d	lc	4	01,02		47	μf
		1	L, R	4	02		47	

See footnotes at end of table.

STANDARD
MICROCIRCUIT DRAWING
DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43216-5000

SIZE

A

5962-95559

REVISION LEVEL
B

SHEET
8

DSCC FORM 2234 APR 97

■ 9004708 0036550 89T ■

TABLE I. Electrical performance characteristics - Continued.

- 1/ Post irradiation testing shall be in accordance with 4.3.5. herein.
- 2/ The total output power available is 80 percent from either output up to 9.6 watts, providing the opposite output is simultaneously carrying 20 percent of the total output power. Each output must carry a minimum of 20 percent of the total output power in order to maintain regulation on the negative output.
- 3/ Bandwidth guaranteed by design. Tested for 10 kHz to 2 MHz.
- 4/ Cross regulation is the percent change in the measured -V_{OUT} relative to the magnitude of -V_{OUT} when the loads are equal and at full load, ±6 W.
- 5/ A TTL level waveform (V_{IH} = 4.5 V minimum, V_{IL} = 0.8 V maximum) with a 50 percent ±10 percent duty cycle applied to the sync input pin (pin 5) within the sync range frequency shall cause the converters switching frequency to become synchronous with the frequency applied to the sync input pin (pin 5).
- 6/ Load step transition time is 10 microseconds minimum.
- Z/ Recovery time is measured from the initiation of the transient to where VOUT has returned to within ±1 percent of VOUT final value.
- 8/ Parameter shall be tested as part of design characterization and after design or process changes. Therefore, the parameter shall be guaranteed to the limits specified in table I.
- 9/ Input step transition time greater than 10 microseconds.
- 10/ Tum-on delay time measurement is for either a step application of power at the input or the removal of a ground signal from the inhibit pin (pin 1) while power is applied to the input.
- 11/ Capacitive load may be any value from 0 to the maximum limit without compromising dc performance. Each output should have equal capacitive loading.

STANDARD
MICROCIRCUIT DRAWING
DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43216-5000

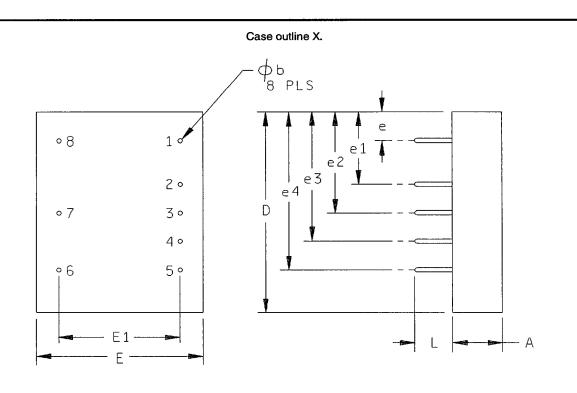
SIZE
A

5962-95559

REVISION LEVEL
B
SHEET
9

DSCC FORM 2234 APR 97

9004708 0036551 726 **11**



Symbol	Millime	eters	Incl	nes
	Min	Max	Min	Max
A		8.38		0.330
ф b	0.64	0.89	0.025	0.035
D	36,70	36.96	1.445	1.455
e	5.08	5.33	0.200	0.210
e1	12.70	12.95	0.500	0.510
e2	17.78	18.03	0.700	0.710
e3	22.86	23.11	0.900	0.910
e4	27.94	28.19	1.100	1.110
E	28.32	28.57	1.115	1,125
E1	20.19	20.44	0,795	0.805
L	6.09	6.60	0.240	0.260

NOTES:

- 1. The case outline X was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound shall take precedence.
- 2. Device weight: 30 grams maximum.

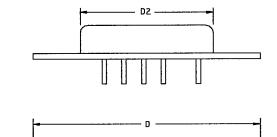
FIGURE 1. Case outline(s).

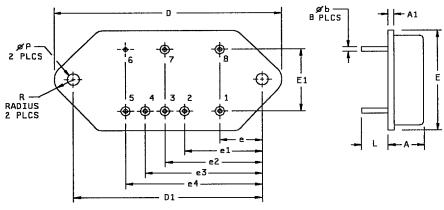
STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	10

DSCC FORM 2234 APR 97

9004708 0036552 662

Case outline Z.





Symbol	Millin	neters	Incl	hes
,	Min	Max	Min	Max
Α		8.38		0.330
A1	0.94	1.45	0.037	0.057
фb	0.64	0.89	0.025	0.035
Ď		50.80		2.000
D1	43.82	44.07	1.725	1.735
D2		36.83		1.450
е	8.64	8.89	0.340	0.350
e1	16.26	16.51	0.640	0.650
e2	21.37	21.59	0.840	0.850
e3	26.41	26.67	1.040	1.050
e4	31.50	31.75	1.240	1.250
E		28.70		1.130
E1	20.07	20.57	0.790	0.810
L	6.10	6.60	0.240	0.260
αф	3.20	3.30	0.126	0.130
R	3.18	3.43	0.125	0.135

- NOTES:

 1. The case outline Z was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound shall take precedence.

 2. Device weight: 30 grams maximum

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	11

DSCC FORM 2234 **APR 97**

9004708 0036553 579 📟

Device types	01 and 02
Case outlines	X and Z
Terminal number	Terminal symbol
1	Inhibit
2	Positive output
3	Output return
4	Negative output
5	Sync input
6	Case ground
7	Input return
8	Input

FIGURE 2. Terminal connections.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	12

9004708 0036554 435

TABLE II. Electrical test requirements.

MIL-PRF-38534 test requirements	Subgroups (in accordance with MIL-PRF-38534, group A test table)
Interim electrical parameters	
Final electrical parameters	1*, 2, 3, 4, 5, 6
Group A test requirements	1, 2, 3, 4, 5, 6
Group C end-point electrical parameters	1
Post irradiation end-point electrical parameters for RHA devices	1, 2, 3, 4, 5, 6

^{*} PDA applies to subgroup 1.

- 4.3 <u>Conformance and periodic inspections</u>. Conformance inspection (CI) and periodic inspection (PI) shall be in accordance with MIL-PRF-38534 and as specified herein.
 - 4.3.1 Group A inspection (CI). Group A inspection shall be in accordance with MIL-PRF-38534 and as follows:
 - a. Tests shall be as specified in table II herein.
 - b. Subgroups 7, 8, 9, 10, and 11 shall be omitted.
 - 4.3.2 Group B inspection (PI). Group B inspection shall be in accordance with MIL-PRF-38534.
 - 4.3.3 Group C inspection (PI). Group C inspection shall be in accordance with MIL-PRF-38534 and as follows:
 - a. End-point electrical parameters shall be as specified in table II herein.
 - b. Steady-state life test, method 1005 of MIL-STD-883.
 - (1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.
 - (2) TC as specified in accordance with table I of method 1005 of MIL-STD-883.
 - (3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.
 - 4.3.4 Group D inspection (PI). Group D inspection shall be in accordance with MIL-PRF-38534.

STANDARD MICROCIRCUIT DRAWING	SIZE A		5962-95559
DEFENSE SUPPLY CENTER COLUMBUS		REVISION LEVEL	SHEET
COLUMBUS, OHIO 43216-5000		B	13

9004708 0036555 371 **3**

4.3.5 <u>Radiation hardness assurance (RHA)</u>. RHA qualification is required only for those devices with the RHA designator as specified herein.

	RHA level L	RHA level R	Units
Total ionizing dose tolerance level	50	100	krad(Si)
Single event upset survival level (LET)	No guarantee	40	MeV

- a. The manufacturer shall perform a worst-case and radiation susceptibility analysis on the device. This analysis shall show that the minimum performance requirements of each component has adequate design margin under worst-case operating conditions (extremes of line voltage, temperatures, load, frequency, radiation environment, etc.). This analysis guarantees the post-irradiation parameter limits specified in table I.
- b. RHA testing shall be performed at the component level for initial device qualification, and after design changes that may affect the RHA performance of the device. As an alternative to testing, components may be procured to manufacturer radiation guarantees that meet the minimum performance requirements. Component radiation performance guarantees shall be established in compliance with MIL-PRF-19500, Group D or MIL-PRF-38535, Group E, as applicable. For components with less than adequate performance margin, component lot radiation acceptance screening shall be performed.
- c. The manufacturer shall establish procedures controlling component radiation testing, and shall establish radiation test plans used to implement component lot qualification during procurement. Test plans and test reports shall be filed and controlled in accordance with the manufacturer's configuration management system.
- d. The device manufacturer shall designate a RHA program manager to oversee component lot qualification, and to monitor design changes for continued compliance to RHA requirements.
- 5. PACKAGING
- 5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38534.
- 6. NOTES
- 6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.
- 6.2 <u>Replaceability</u>. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.
- 6.3 <u>Configuration control of SMD's</u>. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-973 using DD Form 1692, Engineering Change Proposal.
- 6.4 <u>Record of users</u>. Military and industrial users shall inform Defense Supply Center Columbus when a system application requires configuration control and the applicable SMD. DSCC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DSCC-VA, telephone (614) 692-7603.
- 6.5 <u>Comments</u>. Comments on this drawing should be directed to DSCC-VA, P. O. Box 3990, Columbus, Ohio 43216-5000, or telephone (614) 692-0676.
- 6.6 <u>Sources of supply</u>. Sources of supply are listed in QML-38534. The vendors listed in QML-38534 have submitted a certificate of compliance (see 3.7 herein) to DSCC-VA and have agreed to this drawing.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43216-5000

SIZE A		5962-95559
	REVISION LEVEL B	SHEET 14

DSCC FORM 2234 APR 97

9004708 0036556 208

STANDARD MICROCIRCUIT DRAWING SOURCE APPROVAL BULLETIN

DATE: 98-05-06

Approved sources of supply for SMD 5962-95559 are listed below for immediate acquisition only and shall be added to QML-38534 during the next revision. QML-38534 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DSCC-VA. This bulletin is superseded by the next dated revision of QML-38534.

Standard	Vendor	Vendor
microcircuit drawing	CAGE	similar
PIN 1/	number	PIN <u>2</u> /
5962-9555901HXA	50821	MHF+2805D/883
5962-9555901HXC	50821	MHF+2805D/883
5962-9555901HZA	50821	MHF+2805DF/883
5962-9555901HZC	50821	MHF+2805DF/883
5962-9555902HXA	50821	SMHF+2805D/HO
5962-9555902HXC	50821	SMHF+2805D/HO
5962-9555902HZA	50821	SMHF+2805DF/HO
5962-9555902HZC	50821	SMHF+2805DF/HO
5962L9555902HXA	50821	SMHF+2805D/HL
5962L9555902HXC	50821	SMHF+2805D/HL
5962L9555902HZA	50821	SMHF+2805DF/HL
5962L9555902HZC	50821	SMHF+2805DF/HL
5962R9555902HXA	50821	SMHF+2805D/HR
5962R9555902HXC	50821	SMHF+2805D/HR
5962R9555902HZA	50821	SMHF+2805DF/HR
5962R9555902HZC	50821	SMHF+2805DF/HR
5962L9555902KXA	50821	SMHF+2805D/KL
5962L9555902KXC	50821	SMHF+2805D/KL
5962L9555902KZA	50821	SMHF+2805DF/KL
5962L9555902KZC	50821	SMHF+2805DF/KL
5962R9555902KXA	50821	SMHF+2805D/KR
5962R9555902KXC	50821	SMHF+2805D/KR
5962R9555902KZA	50821	SMHF+2805DF/KR
5962R9555902KZC	50821	SMHF+2805DF/KR

The lead finish shown for each PIN representing a hermetic package is the most readily available from the manufacturer listed for that part. If the desired lead finish is not specified contact the vendor to determine its availability. Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

Vendor CAGE number

50821

Interpoint Corporation 10301 Willows Road Redmond, WA 98073-9705

Vendor name and address

The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in this information bulletin.

9004708 0036557 144