REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Changes in accordance with NOR 5962-R025-93.	93-03-11	M. A. FRYE
B	Add case outline N. Techical and editorial changes throughout. Redrawn.	95-03-27	M. A. FRYE
C	Changes in accordance with NOR 5962-R132-96.	96-05-24	M. A. FRYE
D	Make changes to case outline N dimensions A, E, S, and S1. Redrawn. - ro	98-04-13	R. MONNIN
E	Add radiation hardness requirements. Add CAGEs 27851, 21845 and case outline M. Make changes to 1.2, 1.2.2, P_D, theta JC, and theta JA as specified under paragraph 1.3, table I, figure 1 and figure 2. - ro	00-01-28	R. MONNIN
F	Add case outlines 4 and 5. Make correction to case outline N pin descriptions. - ro	02-02-11	R. MONNIN

THE ORIGINAL FIRST SHEET OF THIS DRAWING HAS BEEN REPLACED.

REV																				
SHEET																				
REV	F	F	F																	
SHEET	15	16	17																	

REV STATUS	REV	F	F	F	F	F	F	F	F	F	F	F	F	F	F
OF SHEETS	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14

PMIC N/A

PREPARED BY
JOSEPH A. KERBY

DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43216
http://www.dscc.dla.mil

STANDARD MICROCIRCUIT DRAWING

THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE

AMSC N/A

CHECKED BY
CHARLES E. BESORE

APPROVED BY
MICHAEL A. FRYE

DRAWING APPROVAL DATE
89-08-28

MICROCIRCUIT, LINEAR, 5 VOLT NEGATIVE REGULATOR FIXED, MONOLITHIC

SILICON

REVISION LEVEL	SIZE	CAGE CODE	
F	A	**67268**	**5962-88746**

SHEET 1 OF 17

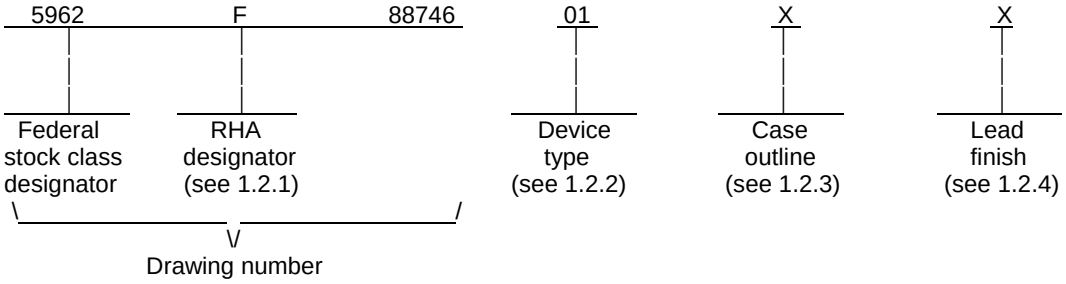
DSCC FORM 2233
APR 97

5962-E230-02

1. SCOPE

1.1 Scope. This drawing describes device requirements for MIL-STD-883 compliant, non-JAN class level B microcircuits in accordance with MIL-PRF-38535, appendix A.

1.2 Part or Identifying Number (PIN). The complete PIN is as shown in the following example:



1.2.1 RHA designator. RHA marked devices shall meet the MIL-PRF-38535 or MIL-PRF-38535, Appendix A specified RHA levels and shall be marked with the appropriate RHA designator. A dash (-) indicates a non-device.

1.2.2 Device type(s). The device type(s) identify the circuit function as follows:

Device type	Generic number	Circuit function
01	7905A	1.0 A negative regulator, fixed 5 volt

1.2.3 Case outline(s). The case outline(s) are as designated in MIL-STD-1835 and as follows:

Outline letter	Descriptive designator	Terminals	Package style
M	See figure 1	3	Surface mount
N	CBCC2-N3	3	Bottom terminal chip carrier
T	See figure 1	3	TO-257 Single row flange mount, glass sealed
U	See figure 1	3	TO-257 Single row flange mount with isolated tab, glass sealed
X	See figure 1	3	TO-39 Can
Y	See figure 1	2	TO-3 Flange mount
Z	MBFM4-P2	2	TO-66 Flange mount
2	CQCC1-N20	20	Square leadless chip carrier
4	See figure 1	3	Flange mount, glass sealed with gull wing leads
5	CBCC1-N3	3	Bottom terminal chip carrier

1.2.4 Lead finish. The lead finish is as specified in MIL-PRF-38535, appendix A.

1.3 Absolute maximum ratings.

Input voltage:
- Operating or input shorted to ground ..... -35 V dc
- Transient ..... -43 V dc 1/

Storage temperature range ..... -65°C to +150°C
Lead temperature (soldering, 10 seconds) ..... +300°C
Power dissipation (P_D):

T_C = +25°C:
- Cases M, N, T, U, Z, 4, and 5 ..... 15 W
- Cases X and 2 ..... 2 W
- Case Y ..... 20 W

T_A = +25°C:
- Cases M, T, U, and Z ..... 3.0 W
- Case N ..... 15.0 W
- Case X ..... 1.0 W
- Case Y ..... 3.6 W
- Case 2 ..... 1040 mW
- Case 4 ..... 1.7 W
- Case 5 ..... 1.3 W

Junction temperature (T_J) ..... +150°C 2/

Thermal resistance, junction-to-case (θ_{JC}):
- Case M ..... 5.5°C/W
- Cases N and T ..... 3.5°C/W
- Case U ..... 4.2°C/W
- Case X ..... 15°C/W
- Case Y ..... 3°C/W
- Case Z ..... 6°C/W
- Case 2 ..... 25°C/W
- Case 4 ..... 5.1°C/W
- Case 5 ..... 3.6°C/W

Thermal resistance, junction-to-ambient (θ_{JA}):
- Cases M, T, U, and Z (device type 01) ..... 42°C/W
- Cases N, X, and 2 ..... 120°C/W
- Case Y ..... 35°C/W
- Case 4 ..... 60°C/W
- Case 5 ..... 80°C/W

1.4 Recommended operating conditions.

Input voltage range (V_{IN}) ..... -7.5 V dc to -20 V dc
Ambient operating temperature range (T_A) ..... -55°C to +125°C

1.5 Radiation features: 3/

Maximum total dose available (dose rate = 50 – 300 rads(Si) / s) ..... 300 Krads

1/ The 43-volt input rating refers to the ability of the regulator to withstand high line or transient conditions without damage. Since the regulator's maximum current capability is reduced, the output may fall out of regulation at high input voltages under nominal loading.
2/ The device is protected by a thermal shutdown circuit which is designed to turn off the output transistor whenever the device junction temperature is in excess of +150°C.
3/ These parts may be dose rate sensitive in a space environment and may demonstrate enhanced low dose rate effects. Radiation end point limits for the noted parameters are guaranteed only for the conditions specified in MIL-STD-883, method 1019, condition A.

2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and handbooks. The following specification, standards, and handbooks 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 solicitation.

SPECIFICATION

DEPARTMENT OF DEFENSE

MIL-PRF-38535 - Integrated Circuits, Manufacturing, General Specification for.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-883 - Test Method Standard Microcircuits.
MIL-STD-1835 - Interface Standard Electronic Component Case Outlines.

HANDBOOKS

DEPARTMENT OF DEFENSE

MIL-HDBK-103 - List of Standard Microcircuit Drawings.
MIL-HDBK-780 - Standard Microcircuit Drawings.

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

2.2 Order of precedence. 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 requirements shall be in accordance with MIL-PRF-38535, appendix A for non-JAN class level B devices and as specified herein. Product built to this drawing that is produced by a Qualified Manufacturer Listing (QML) certified and qualified manufacturer or a manufacturer who has been granted transitional certification to MIL-PRF-38535 may be processed as QML product in accordance with the manufacturers approved program plan and qualifying activity approval in accordance with MIL-PRF-38535. This QML flow as documented in the Quality Management (QM) plan may make modifications to the requirements herein. These modifications shall not affect form, fit, or function of the device. These modifications shall not affect the PIN as described herein. A “Q” or “QML” certification mark in accordance with MIL-PRF-38535 is required to identify when the QML flow option is used.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535, appendix A and herein.

3.2.1 Case outlines. The case outlines shall be in accordance with 1.2.3 herein and on figure 1.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Radiation exposure circuit. The radiation exposure circuit shall be as specified on figure 3.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full ambient operating temperature range.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ 2/ 3/ $-55°C \le T_A \le +125°C$ unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Output voltage	V_{OUT}	T_A = +25°C	1	01	-4.95	-5.05	V
		V_{IN} = -7.5 V to -20 V 4/	1,2,3		-4.85	-5.15	
		M,D,P,L,R,F	1		-4.95	-5.05	
Line regulation 5/ 6/	V_{RLINE}	V_{IN} = -7.5 V to -20 V	1	01		12	mV
		$-55°C \le T_J \le +125°C$	2,3			25	
		M,D,P,L,R,F	1			12	
		V_{IN} = -8.0 V to -12 V	1			5	
		$-55°C \le T_J \le +125°C$	2,3			12	
		M,D,P,L,R,F	1			5	
Load regulation 5/	V_{RLOAD}	I_O = 5.0 mA to 1.5 A 7/	1	01		20	mV
		$-55°C \le T_J \le +125°C$	2,3			25	
		M,D,P,L,R,F	1			20	
		I_O = 250 mA to 750 mA 7/	1			15	
		$-55°C \le T_J \le +125°C$	2,3			30	
		M,D,P,L,R,F	1			15	
		I_O = 5.0 mA to 500 mA 8/	1			25	
		$-55°C \le T_J \le +125°C$	2,3			50	
Standby current drain	I_{SCD}		1	01		2.5	mA
			2,3			3.0	
		M,D,P,L,R,F	1			2.5	
Standby current drain change with line	ΔI_{SCD} (line)	V_{IN} = -7.0 V to -20 V	1,2,3	01		0.4	mA
		M,D,P,L,R,F	1			0.4	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ 3/ $-55°C \le T_A \le +125°C$ unless otherwise specified		Group A subgroups	Device type	Limits		Unit
						Min	Max	
Standby current drain change with load	ΔI_{SCD} (load)	I_O = 5.0 mA to 1000 mA		1,2,3	01		0.4	mA
			M,D,P,L,R,F	1			0.4	
Dropout voltage	V_{DO}	ΔV_{OUT} = 100 mV 7/ I_O = 1.0 A		1,2,3	01		2.5	V
			M,D,P,L,R,F	1			2.5	
		ΔV_{OUT} = 100 mV 8/ I_O = 500 mA		1,2,3			2.5	
Peak output current	$I_{O(PK)}$	T_A = +25°C 7/		1	01	1.5	3.3	A
			M,D,P,L,R,F	1		1.5	3.3	
		T_A = +25°C 8/		1		0.5	1.7	
Output noise voltage 9/	N_O	f = 10 Hz to 100 kHz, T_A = +25°C		7	01		40	µV/V rms
Long term stability 9/	$\Delta V_{OUT} / \Delta t$	t = 1000 hours, T_A = +25°C		7	01		75	mV
Short circuit current 10/	I_{OS}	V_{IN} = -35 V 7/		1	01		1.2	A
				2,3			2.8	
			M,D,P,L,R,F	1			1.2	
		V_{IN} = -35 V 8/		1			0.7	
				2,3			2.0	

See footnotes at end of table.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ 2/ 3/ $-55°C \le T_A \le +125°C$ unless otherwise specified		Group A subgroups	Device type	Limits		Unit
						Min	Max	
Ripple rejection	ΔV_{IN} / ΔV_{OUT}	f = 120 Hz, ΔV_{IN} = 10 V, V_{IN} = -8 V to -18 V		4	01	63		dB
				5,6 9/		60		
			M,D,P,L,R,F	4		63		

1/ Devices supplied to this drawing have been characterized through all levels M, D, P, L, R, F of irradiation. However, this device is only tested at the "F" level. Pre and Post irradiation values are identical unless otherwise specified in table I. When performing post irradiation electrical measurements for any RHA level, T_A = +25°C.

2/ These parts may be dose rate sensitive in a space environment and may demonstrate enhanced low dose rate effects. Radiation end point limits for the noted parameters are guaranteed only for the conditions specified in MIL-STD-883, method 1019, condition A.

3/ Unless otherwise specified, V_{IN} = -10 V and I_O = 500 mA for cases M, N, T, U, Y, Z, 4, and 5. V_{IN} = -10 V and I_O = 100 mA for cases X and 2. Maximum test current for cases X and 2 is 500 mA.

4/ For cases X and 2: I_O = 5 mA to 500 mA, P ≤ 2 W. For case Y: I_O = 5 mA to 1.0 A, P ≤ 20 W. For cases M, N, T, U, Z, 4, and 5: I_O = 5 mA to 1.0 A, P ≤ 15 W.

5/ All measurements except output noise voltage and ripple rejection are made at constant junction temperature and with low duty cycle.

6/ Minimum load current for full line regulation is 5.0 mA.

7/ For cases M, N, T, U, Y, Z, 4, and 5 only.

8/ For cases X and 2 only.

9/ Guaranteed, if not tested, to the limits specified.

10/ Short circuit protection is only assured up to V_{IN} = -35 V.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

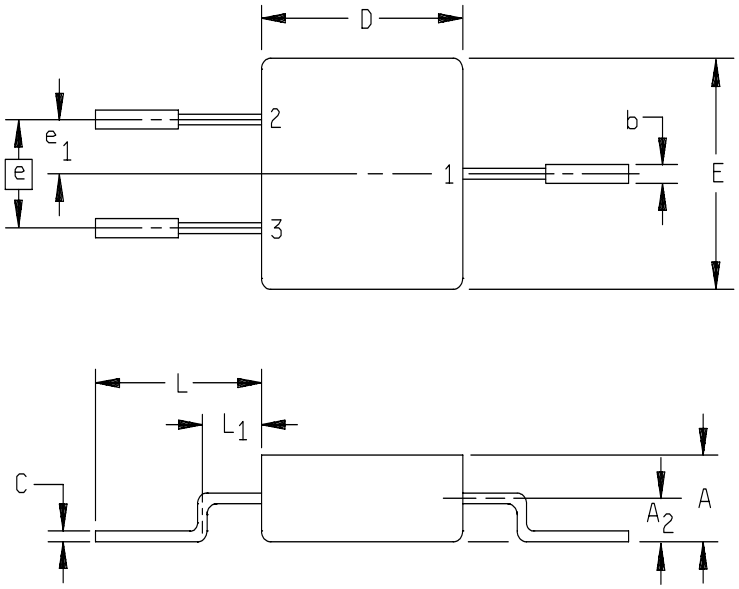
3.5 Marking. Marking shall be in accordance with MIL-PRF-38535, appendix A. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in MIL-HDBK-103 (see 6.6 herein). For packages where marking of the entire SMD PIN number is not feasible due to space limitations, the manufacturer has the option of not marking the "5962-" on the device.

3.5.1 Certification/compliance mark. A compliance indicator "C" shall be marked on all non-JAN devices built in compliance to MIL-PRF-38535, appendix A. The compliance indicator "C" shall be replaced with a "Q" or "QML" certification mark in accordance with MIL-PRF-38535 to identify when the QML flow option is used.

3.6 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in MIL-HDBK-103 (see 6.6 herein). The certificate of compliance submitted to DSCC-VA prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-PRF-38535, appendix A and the requirements herein.

3.7 Certificate of conformance. A certificate of conformance as required in MIL-PRF-38535, appendix A shall be provided with each lot of microcircuits delivered to this drawing.

Case outline M

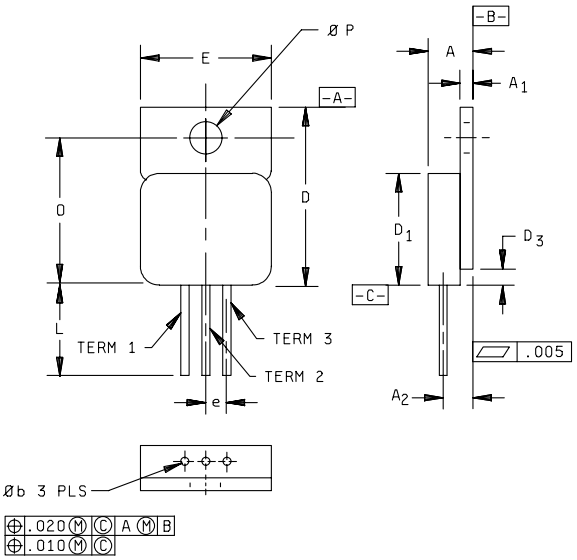


Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	.160	---	4.06	---
A_2	.080	---	2.03	---
b	---	.035	---	0.89
C	.020	---	0.51	---
D	---	.425	---	10.8
E	---	.425	---	10.8
e	.200 BSC		5.08 BSC	
e_1	.100 BSC		2.54 BSC	
L	.350	---	8.89	---
L_1	---	.135	---	3.43

NOTES:
1. The U.S. government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound units shall take precedence.
2. Metric equivalents are given for general information only.
3. Three leads.

FIGURE 1. Case outlines.

Case outlines T and U



Inches	mm
.005	0.13
.010	0.25
.020	0.51

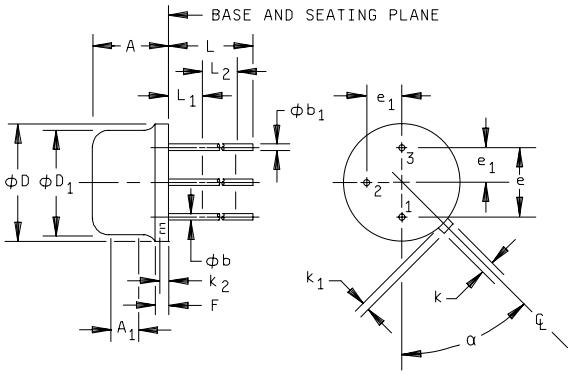
Letter	Inches		Millimeters	
	Min	Max	Min	Max
A	.190	.200	4.83	5.08
A1	.035	.045	0.89	1.14
A2	.120 BSC		3.05 BSC	
ϕb	.025	.035	0.64	0.89
D	.645	.665	16.38	16.89
D1	.410	.430	10.41	10.92
D3	.000	.065	0.00	1.65
e	.100 BSC		2.54 BSC	
E	.410	.422	10.41	10.71
L	.500	.750	12.70	19.05
O	.527	.537	13.39	16.64
ϕP	.140	.150	3.56	3.81

NOTE:

The U.S. government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound units shall take precedence.

FIGURE 1. Case outlines. - Continued.

Case outline X

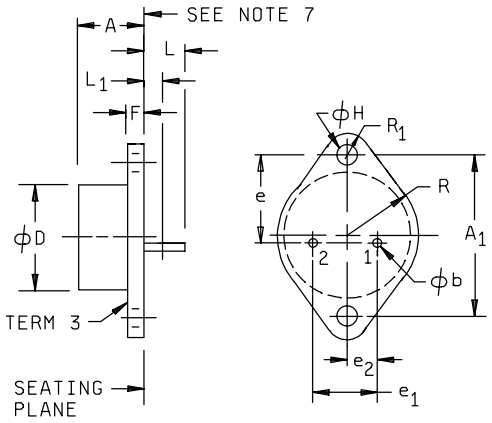


Letter	Inches		Millimeters		Notes
	Min	Max	Min	Max	
A	.165	.185	4.19	4.70	
A1	.100 TP		2.54 T.P.		
ϕb	.016	.019	0.41	0.48	2
ϕb1	.016	.021	0.41	0.53	2
ϕD	.335	.370	8.51	9.40	
ϕD1	.305	.335	7.75	8.51	
e	.200 T.P.		5.08 T.P.		4
e1	.100 T.P.		2.54 T.P.		4
F		.050		1.27	
k	.028	.034	0.71	0.86	
k1	.029	.045	0.74	1.14	3
k2	.009	.041	0.23	1.04	
L	.500		12.70		
L1		.050		1.27	
L2	.250		6.35		
α	45° T.P.		45° T.P.		

NOTES:
1. The U.S. government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound units shall take precedence.
2. (All leads) ϕb applies between the L1 and L2. ϕb1 applies between the L2 and .500 inch (12.70 mm) from the reference plane. Diameter is uncontrolled in L1 and beyond .500 inch (12.70 mm) from the reference plane.
3. Measured from the maximum diameter of the product.
4. Leads having a maximum diameter of .019 inch (0.48 mm) measured in gauging plane .054 inch (1.37 mm) + .001 inch (0.03 mm) - .000 inch (0.00 mm) below the base plane of the product shall be within .007 inch (0.18 mm) of their true-position relative to a maximum width tab.
5. The product may be measured by direct methods or by gauge.

FIGURE 1. Case outlines – Continued

Case outline Y

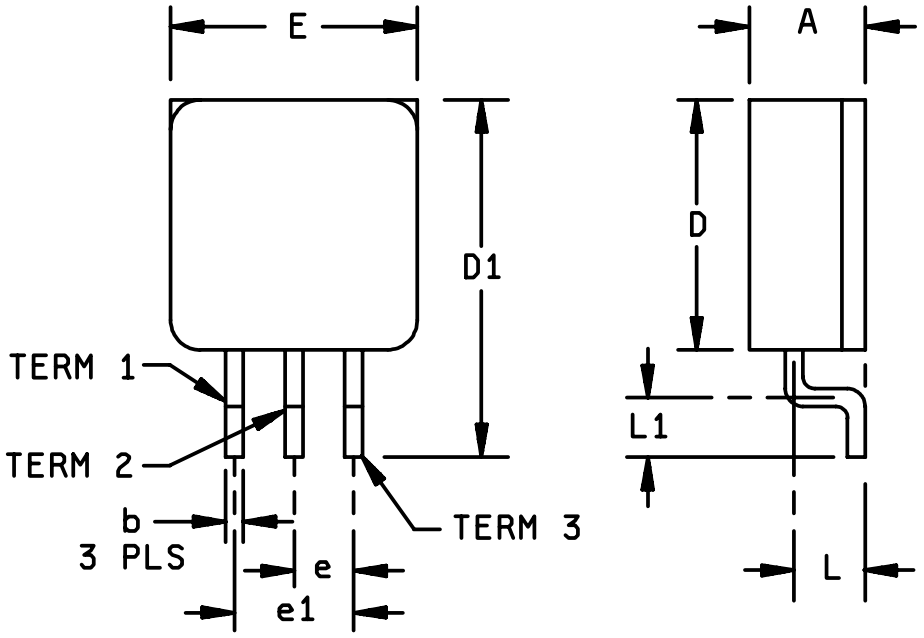


Letter	Inches		Millimeters		Notes
	Min	Max	Min	Max	
A	.250	.450	6.35	11.43	
A1	1.177	1.197	29.90	30.40	
ϕb	.038	.043	0.97	1.09	2, 6
ϕD		.875		22.22	
e	.655	.675	16.64	17.14	4
e1	.420	.440	10.67	11.16	4
e2	.205	.225	5.21	5.72	
F	.060	.135	1.52	3.43	
ϕH	.151	.161	3.84	4.09	4, 5
L	.312	.500	7.92	12.70	3
L1		.050		1.27	2, 3
R	.495	.525	12.57	13.34	
R1	.131	.188	3.33	4.78	

NOTES:
1. The U.S. government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound units shall take precedence.
2. (Two leads) ϕb applies between the L1 and .500 inch (12.70 mm) from the seating plane. Diameter is uncontrolled in L1 and beyond .500 inch (12.70 mm) from the seating plane.
3. Two leads.
4. Two holes.
5. Two holes located at true position within diameter .010 inch (0.25 mm).
6. Leads having a maximum diameter of .043 inch (1.09 mm) measured in gauging plane .054 inch (1.37 mm) + .001 inch (0.03 mm) - .000 inch (0.00 mm) below the seating plane shall be located at true-position within diameter .014 inch (0.36 mm).
7. The mounting surface of the header shall be flat to convex within .003 inch (0.08 mm) inside a .930 inch (23.62 mm) diameter circle on the center of the header and flat to convex within .006 inch (0.15 mm) overall.

FIGURE 1. Case outlines - Continued.

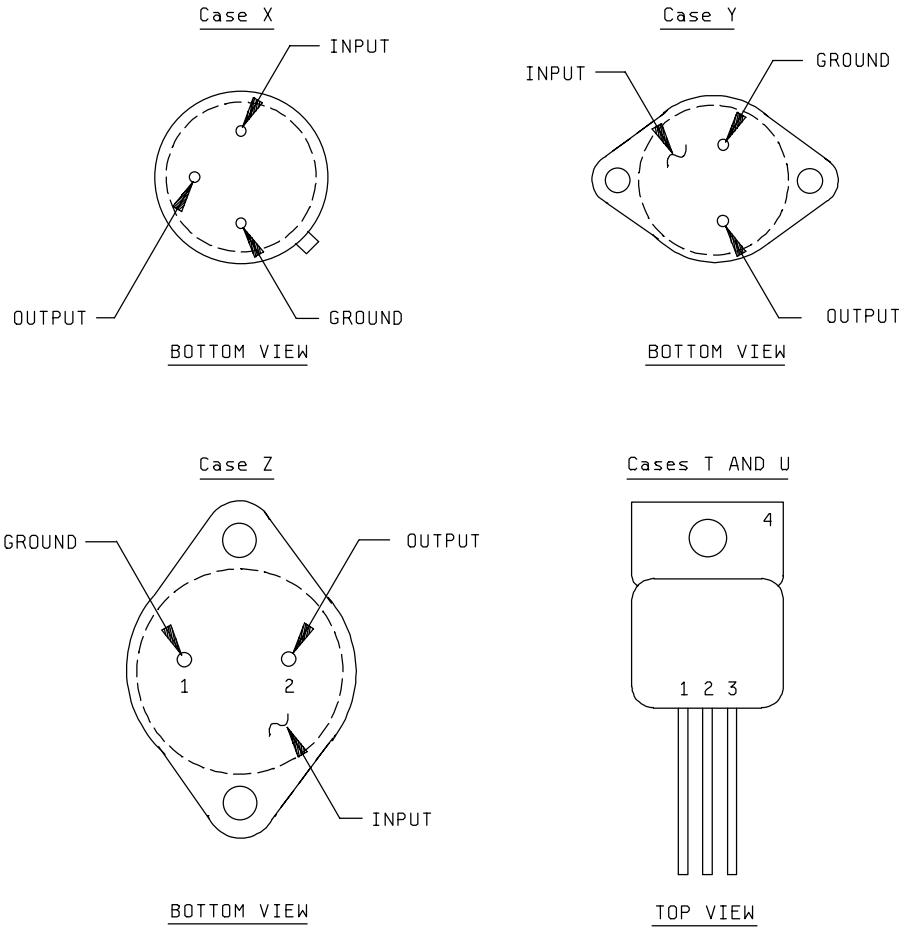
Case outline 4



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	.190	.210	4.83	5.33
b	---	.030	---	0.76
D	.410	.430	10.41	10.92
D1	.580	.610	14.73	15.49
e	---	.100	---	2.54
e1	---	.200	---	5.08
E	.410	.420	10.41	10.67
L1	.090	.110	2.29	2.79
L	.115	.125	2.92	3.18
N	3		3	

NOTE:
The U.S. government preferred system of measurement is the metric SI system. However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch-pound units shall take precedence.

FIGURE 1. Case outline – Continued.



Case T	Case U
1 - GROUND	1 - GROUND
2 - INPUT	2 - INPUT
3 - OUTPUT	3 - OUTPUT
4 - INPUT	4 - NC

FIGURE 2. Terminal connections.

Device type	01				
Case outlines	M	N	2	4	5
Terminal number	Terminal symbol				
1	V_{OUT}	OUTPUT	NC	GROUND	OUTPUT
2	ADJUST	GROUND	V_{IN}	INPUT	GROUND
3	V_{IN}	INPUT	NC	OUTPUT	INPUT
4	ISOLATED (CASE)	---	V_{OUT}	---	---
5	---	---	V_{OUT}	---	---
6	---	---	NC	---	---
7	---	---	V_{OUT}	---	---
8	---	---	NC	---	---
9	---	---	NC	---	---
10	---	---	NC	---	---
11	---	---	NC	---	---
12	---	---	NC	---	---
13	---	---	NC	---	---
14	---	---	NC	---	---
15	---	---	GND	---	---
16	---	---	NC	---	---
17	---	---	GND	---	---
18	---	---	NC	---	---
19	---	---	NC	---	---
20	---	---	V_{IN}	---	---

NOTE:

1. For case outline 2 normal operation, the input pins (2 and 20) are to be connected together, the output pins (4, 5, and 7) are to be connected together, and GND pins (15 and 17) are to be connected together.

2. NC = No connection

FIGURE 2. Terminal connections - Continued.

Case outline U

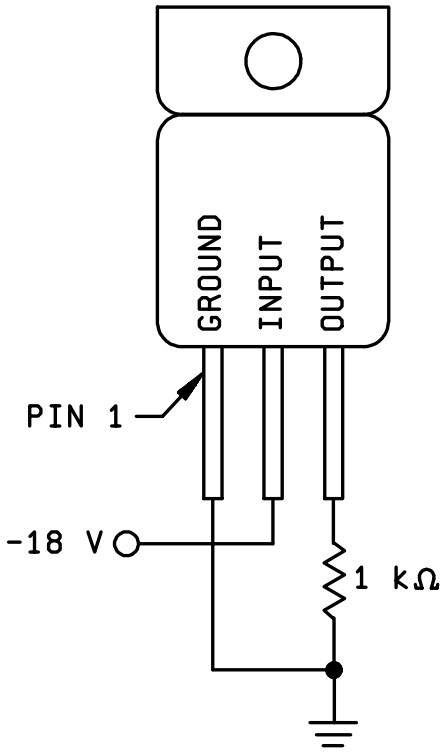


FIGURE 3. Radiation exposure circuit.

3.8 Notification of change. Notification of change to DSCC-VA shall be required in accordance with MIL-PRF-38535, appendix A.

3.9 Verification and review. DSCC, DSCC's agent, and the acquiring activity retain the option to review the manufacturer's facility and applicable required documentation. Offshore documentation shall be made available onshore at the option of the reviewer.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535, appendix A.

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to quality conformance inspection. 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 the preparing or acquiring activity upon request. 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_A = +125°C, minimum.

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.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with method 5005 of MIL-STD-883 including groups A, B, C, and D inspections. The following additional criteria shall apply.

4.3.1 Group A inspection.

a. Tests shall be as specified in table II herein.

b. Subgroups 8, 9, 10, and 11 in table I, method 5005 of MIL-STD-883 shall be omitted.

4.3.2 Groups C and D inspections.

a. End-point electrical parameters shall be as specified in table II herein.

b. Steady-state life test conditions, 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 the preparing or acquiring activity upon request. 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) T_A = +125°C, minimum.

(3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.3.3 Group E inspection. Group E inspection is required only for parts intended to be marked as radiation hardness assured (see 3.5 herein). RHA levels shall be as specified in MIL-PRF-38535 or MIL-PRF-38535, Appendix A. End-point parameters shall be as specified in table II herein.

4.3.3.1 Total dose irradiation testing. Total dose irradiation testing shall be performed in accordance with MIL-STD-883 method 1019, condition A and as specified herein.

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (in accordance with MIL-STD-883, method 5005, table I)
Interim electrical parameters (method 5004)	1
Final electrical test parameters (method 5004)	1*, 2, 3, 4
Group A test requirements (method 5005)	1, 2, 3, 4, 5**, 6**, 7**
Groups C and D end-point electrical parameters (method 5005)	1
Group E end-point electrical parameters (method 5005)	1, 4

* PDA applies to subgroup 1.
** Subgroups 5, 6, and 7, if not tested, shall be guaranteed to the limits specified in table I.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38535, appendix A.

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 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished using DD Form 1692, Engineering Change Proposal.

6.4 Record of users. 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 microelectronics devices (FSC 5962) should contact DSCC-VA, telephone (614) 692-0544.

6.5 Comments. Comments on this drawing should be directed to DSCC-VA, Columbus, Ohio 43216-5000, or telephone (614) 692-0547.

6.6 Approved sources of supply. Approved sources of supply are listed in MIL-HDBK-103. The vendors listed in MIL-HDBK-103 have agreed to this drawing and a certificate of compliance (see 3.6 herein) has been submitted to and accepted by DSCC-VA.

STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 02-02-11

Approved sources of supply for SMD 5962-88746 are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38535 during the next revision. MIL-HDBK-103 and QML-38535 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 MIL-HDBK-103 and QML-38535.

Standard microcircuit drawing PIN 1/	Vendor CAGE number	Vendor similar PIN 2/
5962-8874601MA	69210	OM1905SM/883B
5962-8874601NA	21845	SDP7905ANMD
	69210	OM7905NM/883B
5962-8874601TA	21845	SDP7905ATMD
	69210	OM7905AH/883B
5962-8874601UA	21845	SDP7905AUMD
	27851	FM905S7
	34333	SG7905AIG/883B
	69210	OM7905AIH/883B
5962-8874601XA	34333	SG7905AT/883B
5962-8874601YA	34333	SG7905AK/883B
	69210	OM7905NK/883B
5962-8874601ZA	21845	SDP7905AZMD
	34333	SG7905AR/883B

Standard microcircuit drawing PIN 1/	Vendor CAGE number	Vendor similar PIN 2/
5962-88746012A	21845	SDP7905A2MD
	34333	SG7905AL/883B
	69210	OM1905N2/883B
5962-88746014A	69210	OM1905SRM/883B
5962-88746015A	69210	OM1905N5M/883B
5962F8874601UA	69210	OM1905STM/883B

1/ 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 listed contact the vendor to determine its availability.

2/ 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	Vendor name and address
21845	Solitron Devices, Incorporated 3301 Electronics Way West Palm Beach, FL 33407-4697
27851	Film Microelectronics, Incorporated 530 Turnpike Street North Andover, MA 01845-5812
34333	Linfinity Microelectronics Incorporated 11861 Western Avenue Garden Grove, CA 92641-1816
69210	Omnirel Corporation 205 Crawford Street Leominster, MA 01453-2353