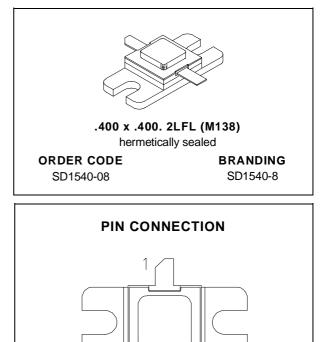


SD1540-08

4

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 350 WATTS (typ.) IFF 1030 1090 MHz
- 300 WATTS (min.) DME 1025 1150 MHz
- 290 WATTS (typ.) TACAN 960 1215 MHz
- 6.3 dB MIN. GAIN
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 20:1 LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT/OUTPUT MATCHED, COMMON BASE CONFIGURATION



DESCRIPTION

The SD1540-08 is a gold metallized silicon, NPN power transistor designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1540 is packaged in a metal/ceramic package with internal input/output matching resulting in improved broadband performance and a low thermal resistance.

1. Collector3. Emitter2. Base4. Base

3

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	65	V
V _{CES}	Collector-Emitter Voltage	65	V
V _{EBO}	Emitter-Base Voltage	3.5	V
lc	Device Current	22	А
PDISS	Power Dissipation	875	W
TJ	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	0.20	°C/W	
November 1992			1/5	

SD1540-08

ELECTRICAL SPECIFICATIONS ($T_{case} = 25^{\circ}C$)

STATIC

Symbol	Test Conditions	Value			Unit		
		Min.	Тур.	Max.	Unit		
ВVсво	$I_C = 10 mA$	$I_E = 0mA$		65	_	—	V
BVCES	$I_C = 25 mA$	$V_{BE} = 0V$		65	_	—	V
BVEBO	$I_E = 5mA$	$I_C = 0mA$		3.5	_	_	V
ICES	$V_{CE} = 50V$	$I_E = 0mA$				25	mA
hfe	$V_{CE} = 5V$	$I_C = 1A$		10	_		_

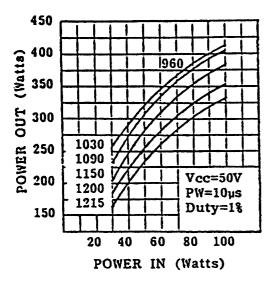
DYNAMIC

Symbol	Test Conditions		Value		Unit	
Symbol			Min.	Тур.	Max.	Unit
Роит	$f = 1025 - 1150MHz P_{IN} = 70 W$	$V_{\text{CE}}=50~\text{V}$	300	—	—	W
GP	f = 1025 — 1150MHz P _{IN} = 70 W	$V_{CE} = 50 V$	6.3			dB
η _c	$f = 1025 - 1150MHz P_{IN} = 70 W$	$V_{CE} = 50 V$	35			%

Note: Pulse Width = 10μ Sec, Duty Cycle = 1%

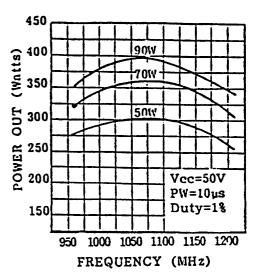
This device is suitable for use under other pulse width/duty cycle conditions. Please contact the factory for specific applications assistance.

TYPICAL PERFORMANCE

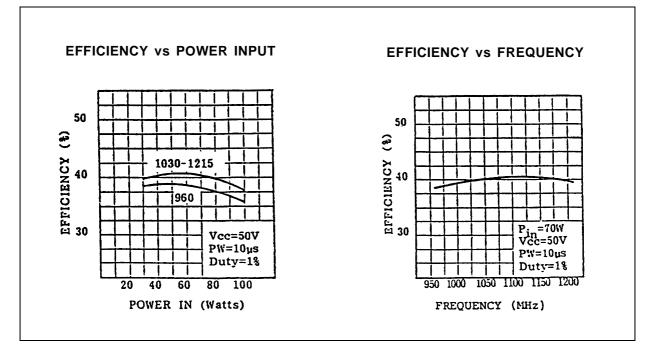


POWER OUTPUT vs POWER INPUT

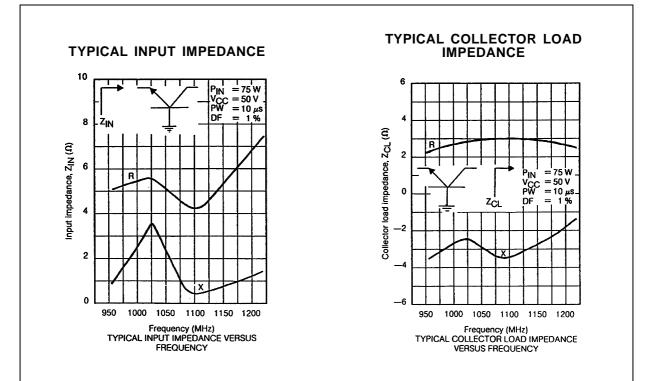
POWER OUTPUT vs FREQUENCY



TYPICAL PERFORMANCE (cont'd)



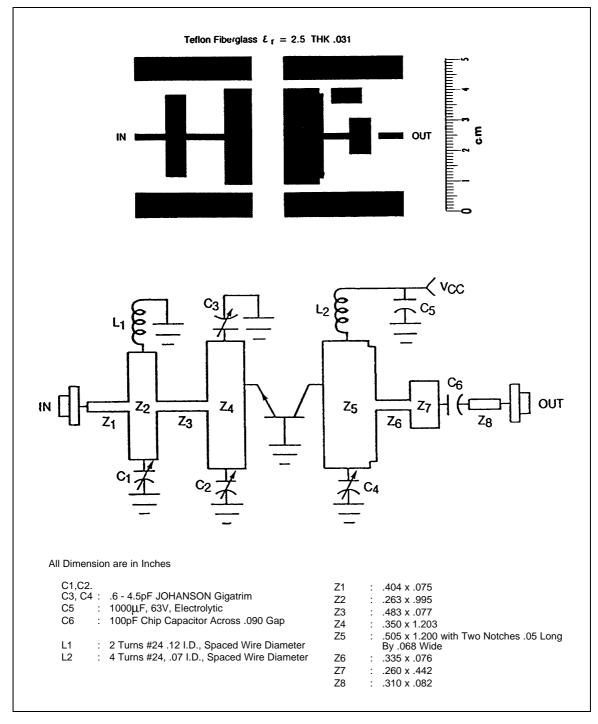
IMPEDANCE DATA





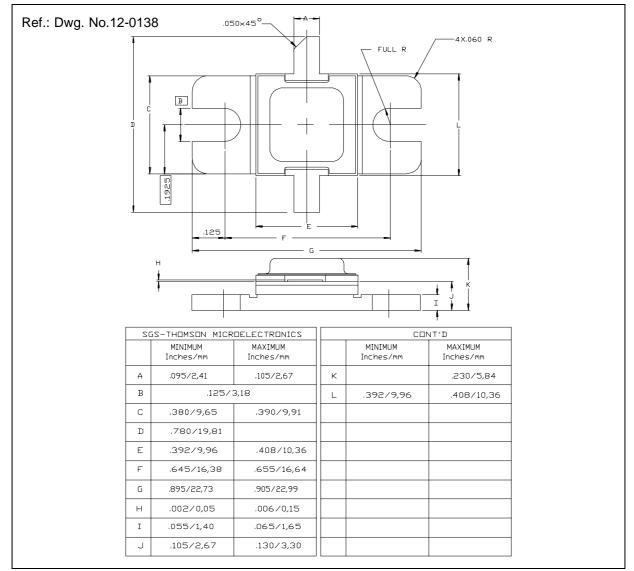
SD1540-08

TEST CIRCUIT





PACKAGE MECHANICAL DATA



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