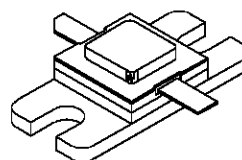


RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- 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.



.400 x .400. 2LFL (M138)
hermetically sealed

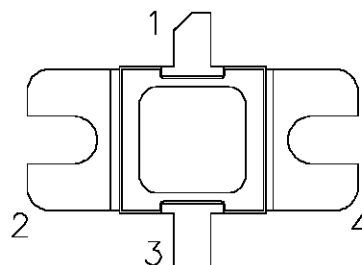
ORDER CODE

SD1540-08

BRANDING

SD1540-8

PIN CONNECTION



- | | |
|--------------|------------|
| 1. Collector | 3. Emitter |
| 2. Base | 4. Base |

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°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
I _C	Device Current	22	A
P _{DISS}	Power Dissipation	875	W
T _J	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
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ELECTRICAL SPECIFICATIONS ($T_{\text{case}} = 25^{\circ}\text{C}$)

STATIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 10\text{mA}$ $I_E = 0\text{mA}$	65	—	—	V
BV_{CES}	$I_C = 25\text{mA}$ $V_{BE} = 0\text{V}$	65	—	—	V
BV_{EBO}	$I_E = 5\text{mA}$ $I_C = 0\text{mA}$	3.5	—	—	V
I_{CES}	$V_{CE} = 50\text{V}$ $I_E = 0\text{mA}$	—	—	25	mA
h_{FE}	$V_{CE} = 5\text{V}$ $I_C = 1\text{A}$	10	—	—	—

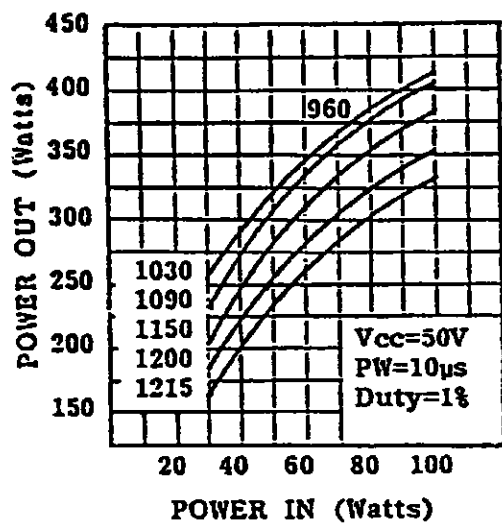
DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 1025 \text{ — } 1150\text{MHz}$ $P_{IN} = 70 \text{ W}$ $V_{CE} = 50 \text{ V}$	300	—	—	W
G_P	$f = 1025 \text{ — } 1150\text{MHz}$ $P_{IN} = 70 \text{ W}$ $V_{CE} = 50 \text{ V}$	6.3	—	—	dB
η_C	$f = 1025 \text{ — } 1150\text{MHz}$ $P_{IN} = 70 \text{ W}$ $V_{CE} = 50 \text{ V}$	35	—	—	%

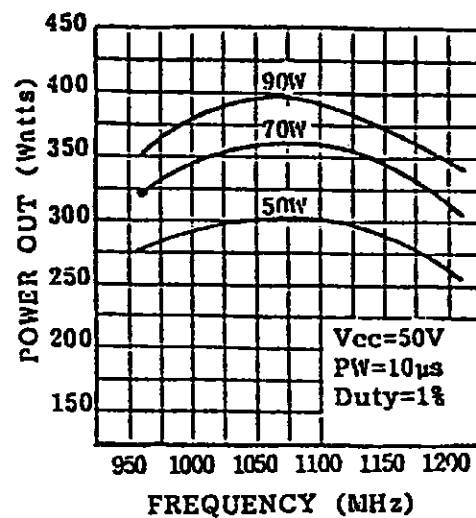
Note: Pulse Width = $10\mu\text{Sec}$, Duty Cycle = 1%
 This device is suitable for use under other pulse width/duty cycle conditions.
 Please contact the factory for specific applications assistance.

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT

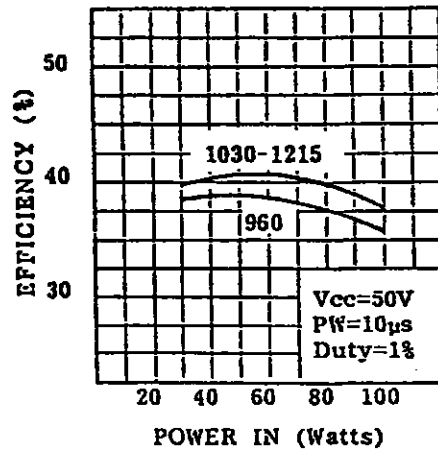


POWER OUTPUT vs FREQUENCY

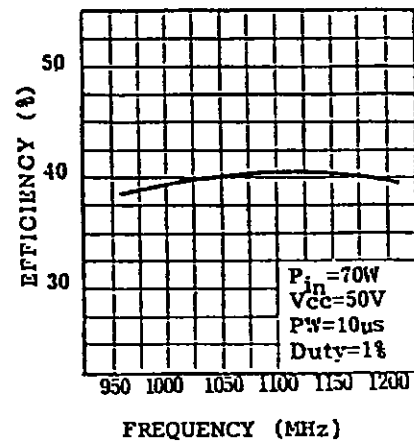


TYPICAL PERFORMANCE (cont'd)

EFFICIENCY vs POWER INPUT

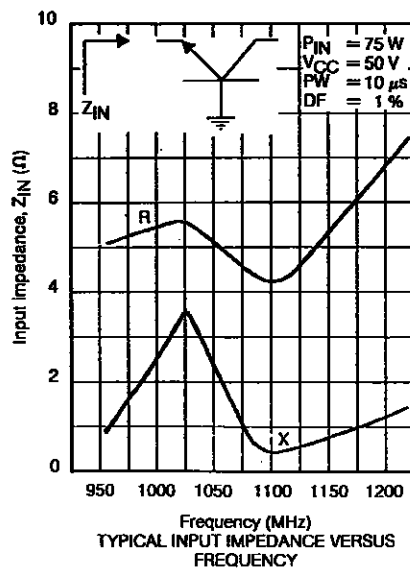


EFFICIENCY vs FREQUENCY

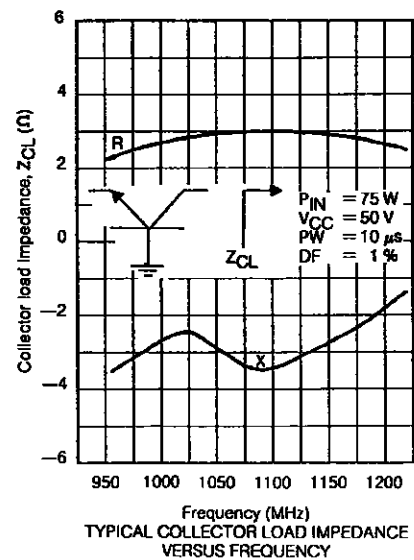


IMPEDANCE DATA

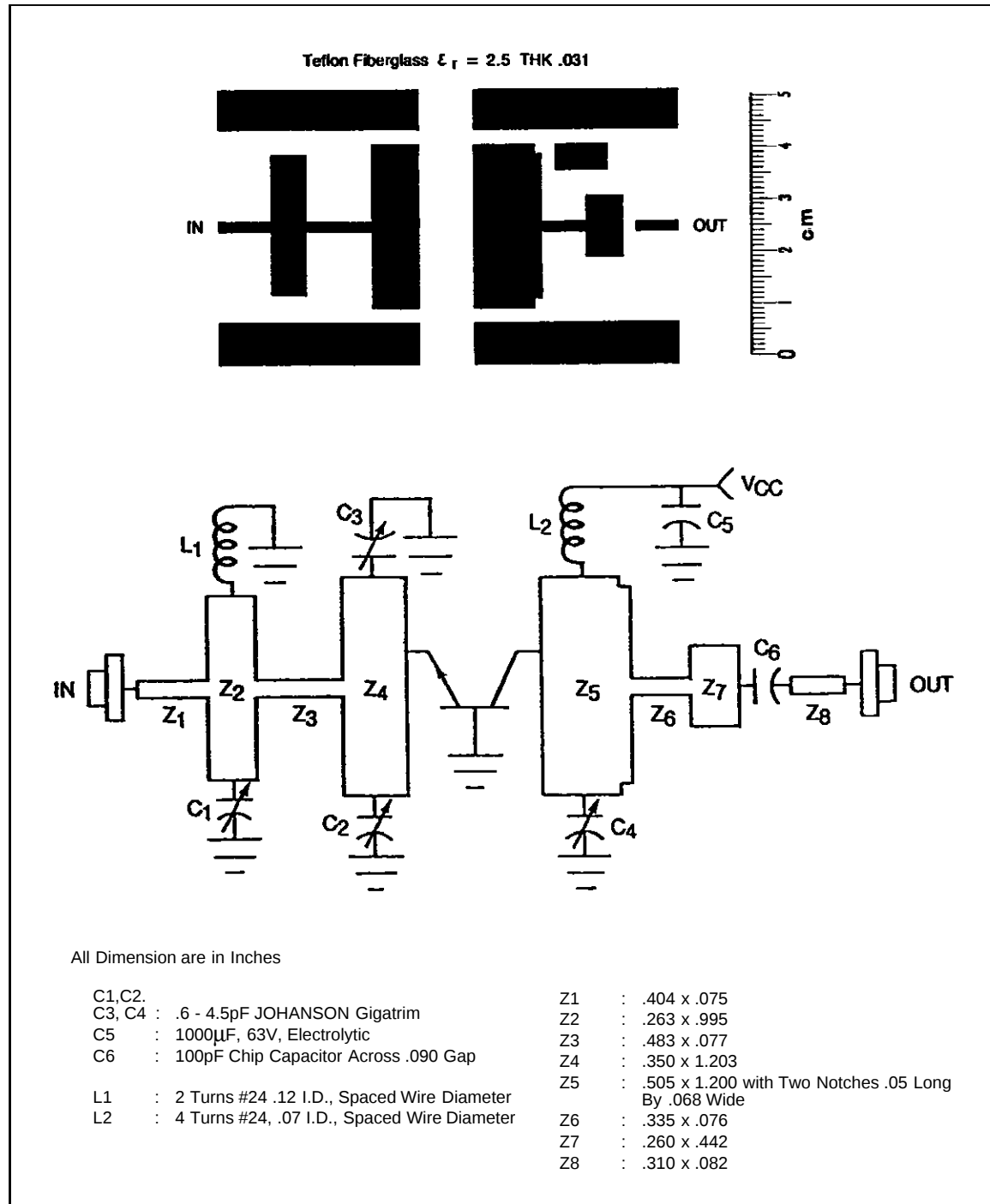
TYPICAL INPUT IMPEDANCE



TYPICAL COLLECTOR LOAD IMPEDANCE

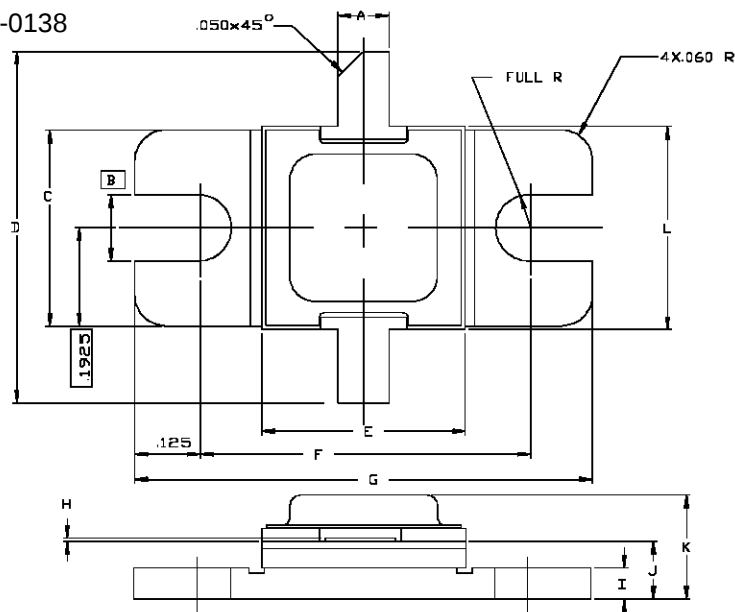


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0138



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.095/2,41	.105/2,67	K		.230/5,84
B	.125/3,18		L	.392/9,96	.408/10,36
C	.380/9,65	.390/9,91			
D	.780/19,81				
E	.392/9,96	.408/10,36			
F	.645/16,38	.655/16,64			
G	.895/22,73	.905/22,99			
H	.002/0,05	.006/0,15			
I	.055/1,40	.065/1,65			
J	.105/2,67	.130/3,30			

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