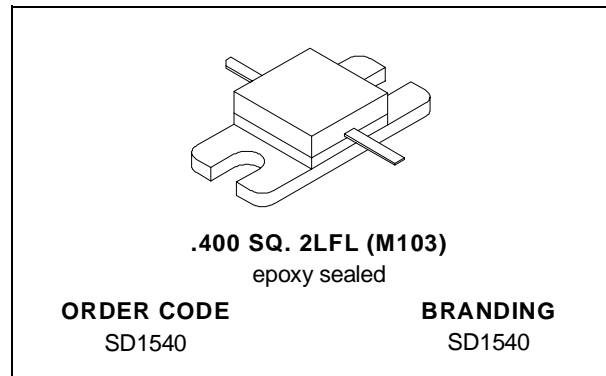
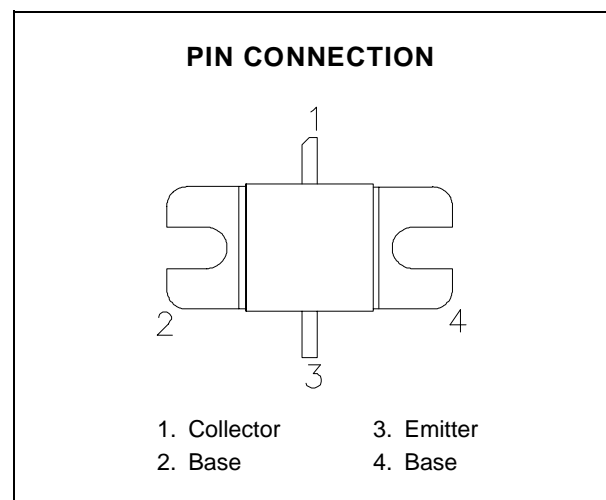


## RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 350 WATTS (typ.) IFF 1030 - 1090 MHz
- 300 WATTS (min.) DME 1025 - 1150 MHz
- 2900 WATTS (typ.) TACAN 960 - 1215 MHz
- 6.3 dB MIN. GAIN
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 30:1 LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT/OUTPUT MATCHED, COMMON BASE CONFIGURATION


**DESCRIPTION**

The SD1540 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.


**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
$I_C$	Device Current	22	A
$P_{DISS}$	Power Dissipation	875	W
$T_J$	Junction Temperature	+200	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}C$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.20	$^{\circ}C/W$
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# SD1540

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

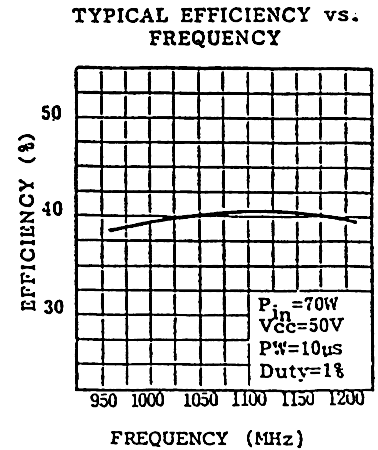
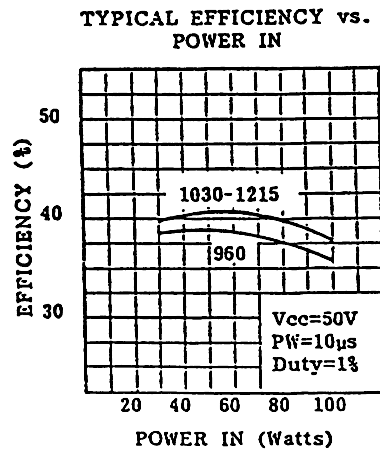
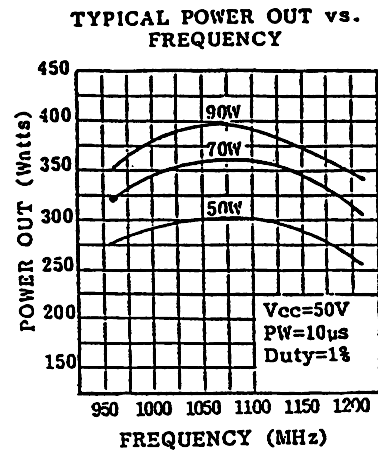
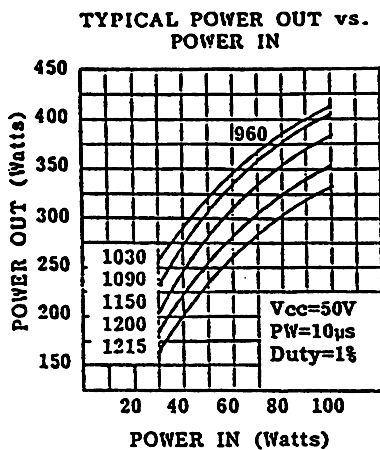
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 10mA	I <sub>E</sub> = 0mA	65	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5mA	I <sub>C</sub> = 0mA	3.5	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 50V	I <sub>E</sub> = 0mA	—	—	25	mA

### DYNAMIC

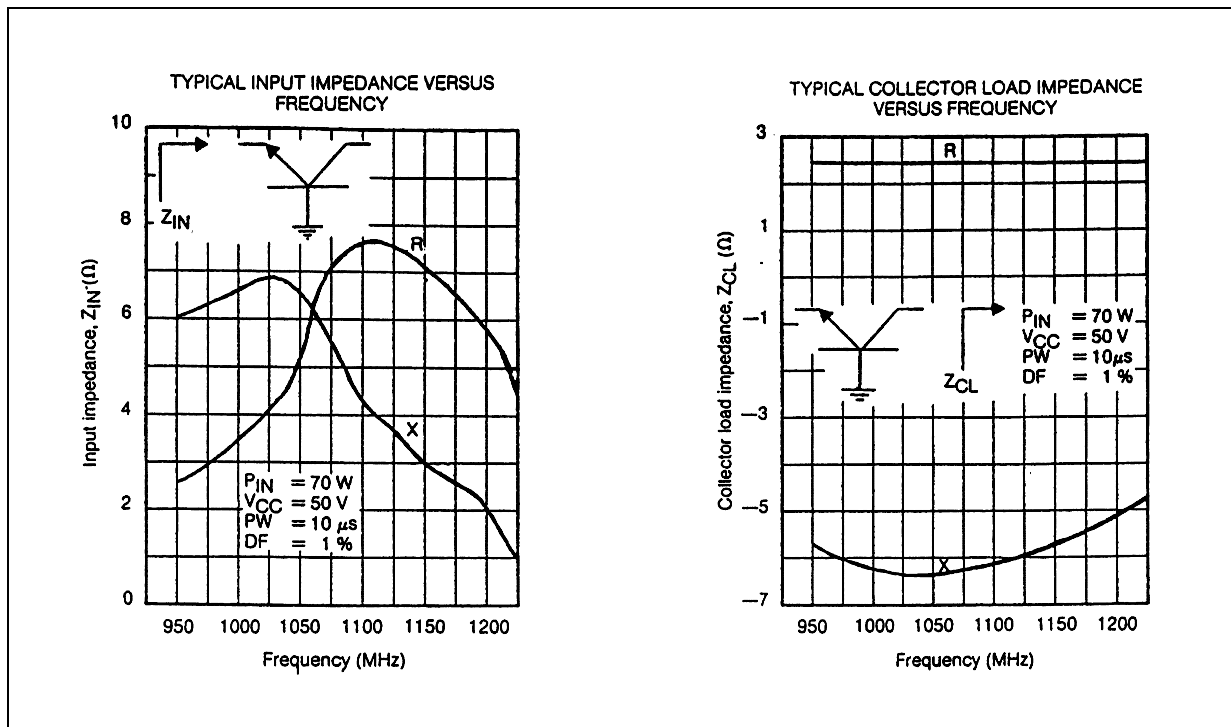
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1025 — 1150MHz	P <sub>IN</sub> = 70 W      V <sub>CE</sub> = 50 V	300	—	—	W
G <sub>P</sub>	f = 1025 — 1150MHz	P <sub>IN</sub> = 70 W      V <sub>CE</sub> = 50 V	6.3	—	—	dB

Note: Pulse Width = 10μSec, 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



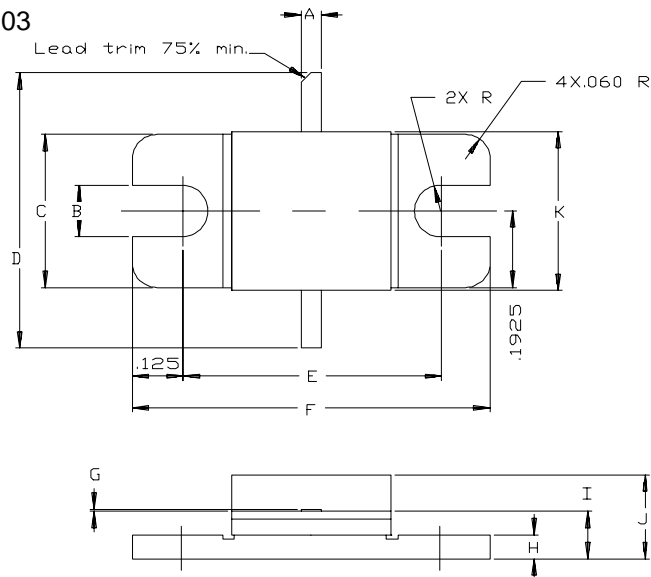
## IMPEDANCE DATA





## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0103



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.045/1,14	.055/1,40	K	.390/9,91	.410/10,41
B	.130/3,30				
C	.380/ 9,65	.390/ 9,91			
D	.880/22,35	.920/23,37			
E	.645/16,38	.655/16,64			
F	.890/22,61	.910/23,11			
G	.002/0,05	.006/0,15			
H	.055/1,40	.065/1,65			
I	.110/2,79	.130/3,30			
J	.190/4,83	.215/5,46			

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