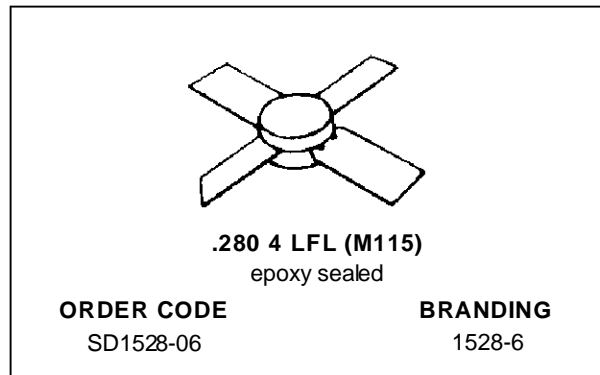
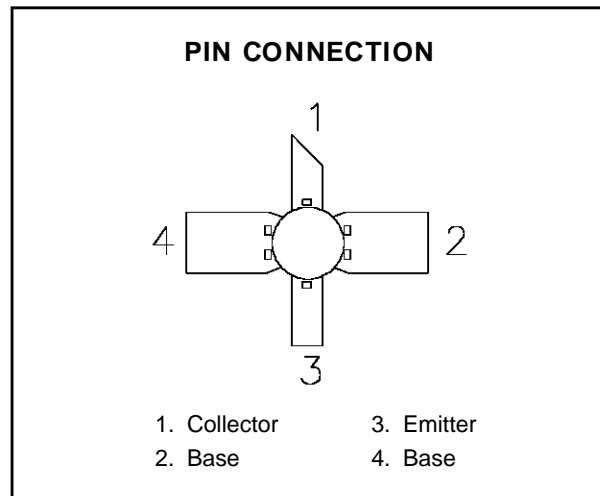


**RF & MICROWAVE TRANSISTORS  
AVIONICS APPLICATIONS**

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 20 W (typ.) IFF 1030 - 1090 MHz
- 15 W (min.) DME 1025 - 1150 MHz
- 15 W (typ.) TACAN 960 - 1215 MHz
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTED AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 20:1 LOAD VSWR CAPABILITY @ SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION


**DESCRIPTION**

The SD1528-06 is a gold metallized epitaxial silicon NPN power transistor. The SD1528-06 is designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1528-06 is packaged in the .280" input matched stripline package, resulting in improved broadband performance and 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	1.5	A
$P_{DISS}$	Power Dissipation	87.5	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	2.0	$^{\circ}C/W$
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# SD1528-06

## 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>CES</sub>	I <sub>C</sub> = 25mA	V <sub>BE</sub> = 0V	65	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	I <sub>C</sub> = 0mA	3.5	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 50V	I <sub>E</sub> = 0mA	—	—	2	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = .1A	10	—	200	—

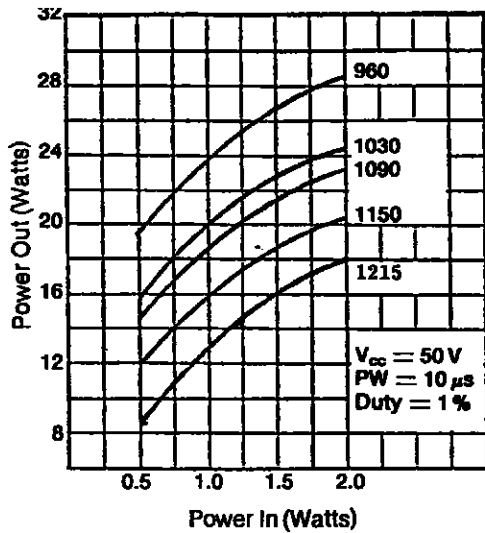
### DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1025 — 1150MHz	P <sub>IN</sub> = 1.5 W V <sub>CE</sub> = 50 V	15	—	—	W
G <sub>P</sub>	f = 1025 — 1150MHz	P <sub>IN</sub> = 1.5 W V <sub>CE</sub> = 50 V	10	—	—	dB
η <sub>C</sub>	f = 1025 — 1150MHz	P <sub>IN</sub> = 1.5 W V <sub>CE</sub> = 50 V	30	—	—	%

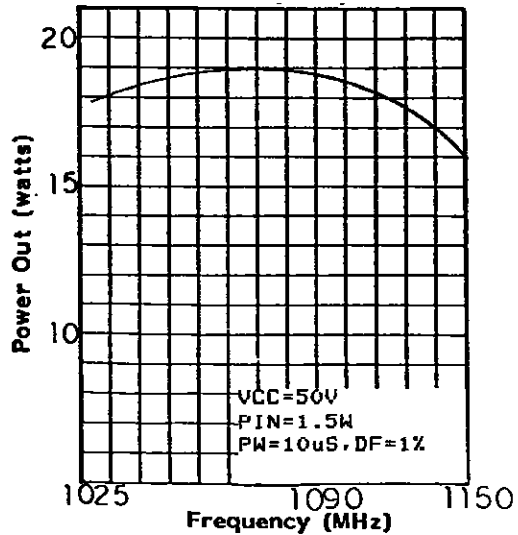
Note: Pulse Width = 10μsec, Duty Cycle = 1%

### TYPICAL PERFORMANCE

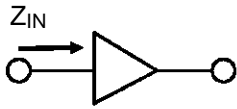
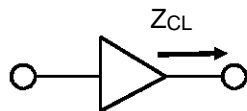
POWER OUTPUT vs POWER INPUT



POWER OUTPUT vs FREQUENCY



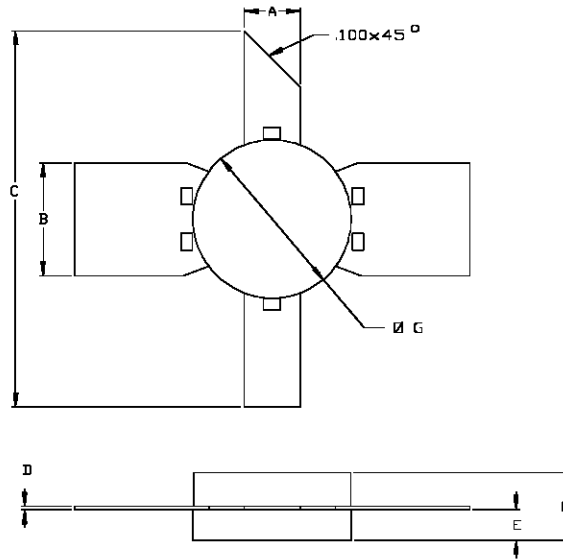
## IMPEDANCE DATA

TYPICAL INPUT  
IMPEDANCETYPICAL COLLECTOR  
LOAD IMPEDANCE

FREQ.	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
960 MHz	2.5 + j 12.5	17.0 + j 15.5
1030 MHz	3.5 + j 12.5	17.0 + j 14.5
1090 MHz	3.0 + j 13.5	19.5 + j 12.5
1150 MHz	3.5 + j 14.0	18.0 + j 12.0
1215 MHz	5.0 + j 17.0	16.0 + j 12.0

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0115



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.095/2,41	.105/2,67
B	.195/4,95	.205/5,21
C	1.000/25,40	
D	.004/0,10	.007/0,18
E	.050/1,27	.065/1,65
F		.145/3,68
G	.275/6,99	.285/7,21

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