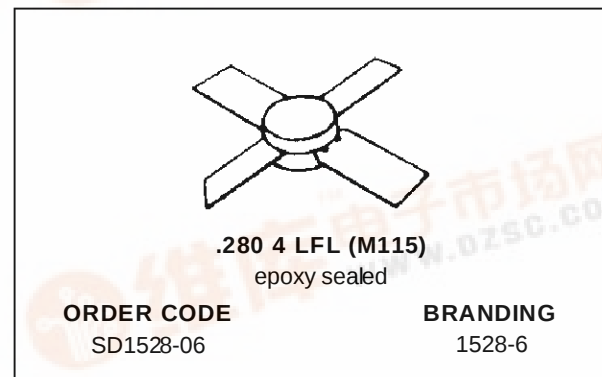


**SD1528-06**

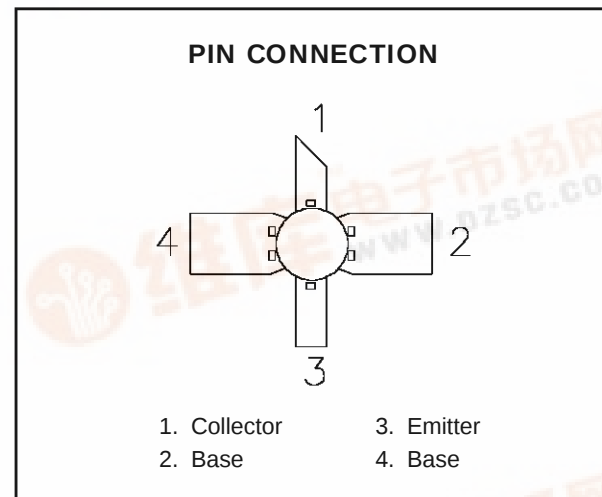
RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- 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°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	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	2.0	°C/W
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SD1528-06

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 10mA	I _E = 0mA	65	—	—	V
BV _{CES}	I _C = 25mA	V _{BE} = 0V	65	—	—	V
BV _{EBO}	I _E = 1mA	I _C = 0mA	3.5	—	—	V
I _{CES}	V _{CE} = 50V	I _E = 0mA	—	—	2	mA
h _{FE}	V _{CE} = 5V	I _C = .1A	10	—	200	—

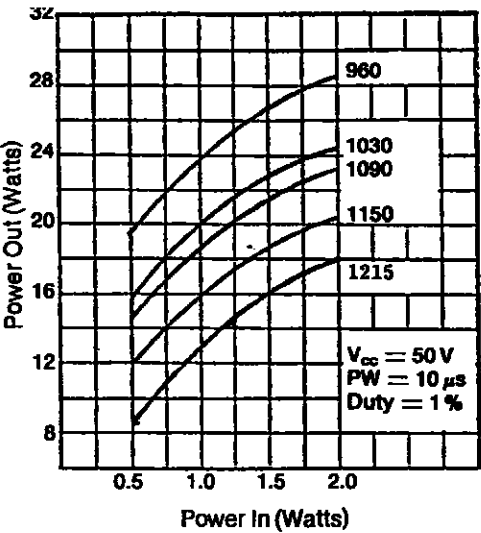
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 1025 — 1150MHz	P _{IN} = 1.5 W	V _{CE} = 50 V	15	—	—	W
G _p	f = 1025 — 1150MHz	P _{IN} = 1.5 W	V _{CE} = 50 V	10	—	—	dB
η _c	f = 1025 — 1150MHz	P _{IN} = 1.5 W	V _{CE} = 50 V	30	—	—	%

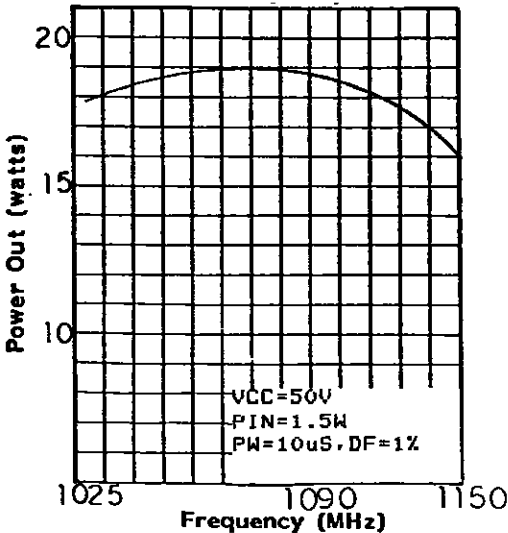
Note: Pulse Width = 10μsec, Duty Cycle = 1%

TYPICAL PERFORMANCE

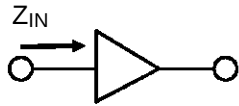
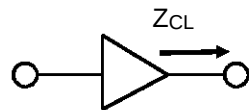
POWER OUTPUT vs POWER INPUT



POWER OUTPUT vs FREQUENCY



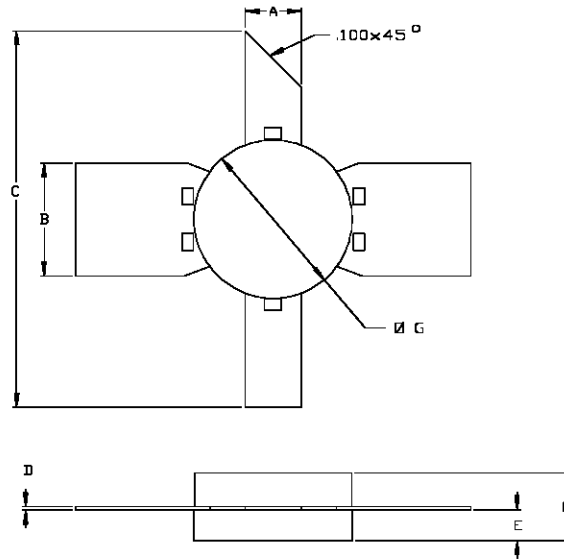
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL COLLECTOR
LOAD IMPEDANCE

FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
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



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	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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