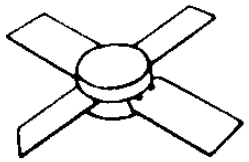
SGS-THOMSON MICROELECTRONICS

SD1528-06

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

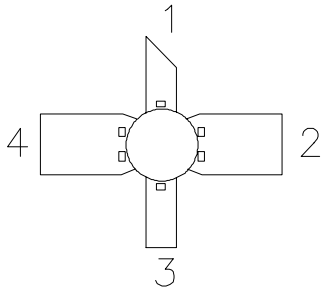
- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 20 W (typ.) IFF 1030 - 1090 MHz
- 15 W (min.) DME 1025 - 1150 MHz
- 15 W (typ.) TACAN 960 - 1215 MHz
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTED AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 20:1 LOAD VSWR CAPABILITY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



.280 4 LFL (M115)
epoxy sealed

ORDER CODE	BRANDING
SD1528-06	1528-6

PIN CONNECTION



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

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

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	—

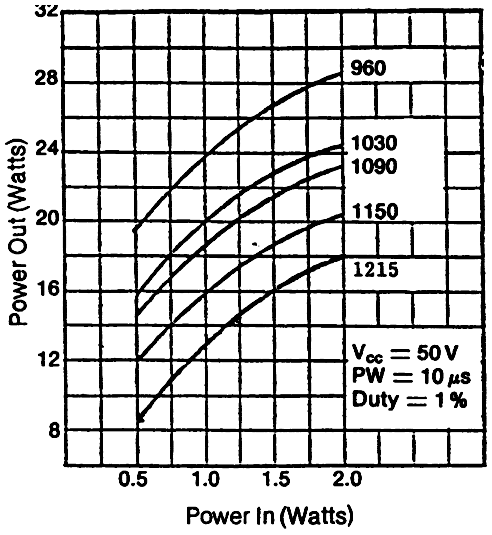
DYNAMIC

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	—	—	%

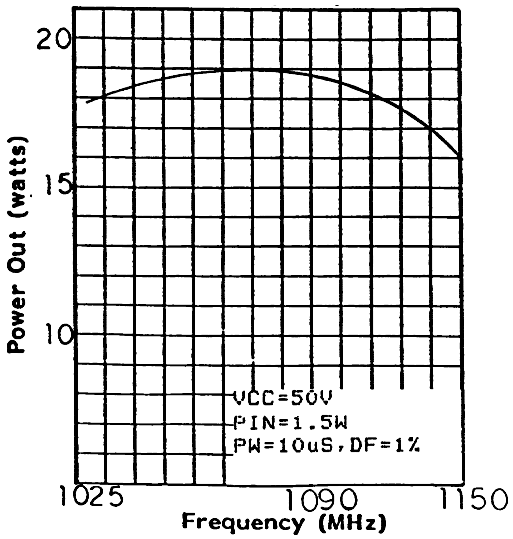
Note: Pulse Width = 10μsec, Duty Cycle = 1%

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT



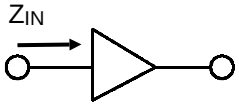
POWER OUTPUT vs FREQUENCY



IMPEDANCE DATA

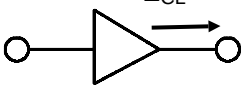
TYPICAL INPUT IMPEDANCE

Z_{IN}



TYPICAL COLLECTOR LOAD IMPEDANCE

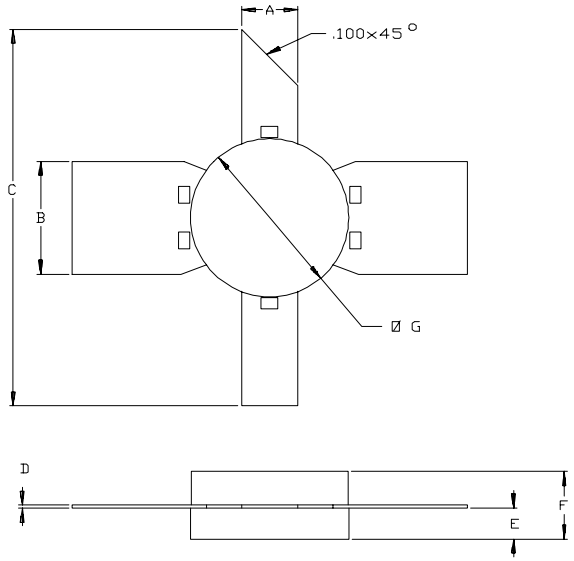
Z_{CL}



FREQ.	Z_{IN} (Ω)	Z_{CL} (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