RF Products
Microsemi
Progress Powered by Technology

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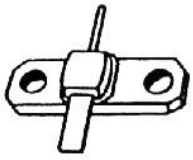
SD1536-8

RF & MICROWAVE TRANSISTORS IFF/DME APPLICATIONS

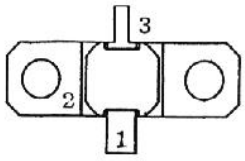
- DESIGNATED FOR HIGH POWER PULSE IFF, DME TACAN
- 100 WATTS (typ.) IFF 1030-1090MHz
- 90 WATTS (min.) DME 1025-1150MHz
- 90 WATTS (typ.) TACAN 960-1215MHz
- GREATER THAN 8.8dB GAIN
- REFRACTORY GOLD METALLIZATION
- BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- 20:1 LOAD — VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION



.250 x .250 2LFL (M105)
hermetic sealed

ORDER CODE	BRANDING
SD1536-08	SD1536-8

PIN CONNECTION



S88SD1536-8-01

1 emitter
2 base
3 collector

DESCRIPTION

The SD1536-8 is a gold metallized, silicon NPN power transistor. The SD1536-8 is designed for applications requiring high peak power and low duty cycles such as IFF, DME, and TACAN. The SD1536-8 is packaged in the .250" input matched hermetic stripline flange package resulting in improved broadband performance and a low thermal resistance.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	65.0	V
V_{CEO}	Collector - Emitter Voltage	65.0	V
V_{EBO}	Emitter - Base Voltage	3.5	V
I_C	Collector Current (max.)	10.0	A
P_{TOT}	Total Device Dissipation at + 25°C	292.0	W
T_{STG}	Storage Temperature	– 65 to + 200	°C
T_J	Junction Temperature	+ 200	°C

THERMAL DATA

$R_{TH(J-C)}$	Junction-case Thermal Resistance	.60	°C/W

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

STATIC

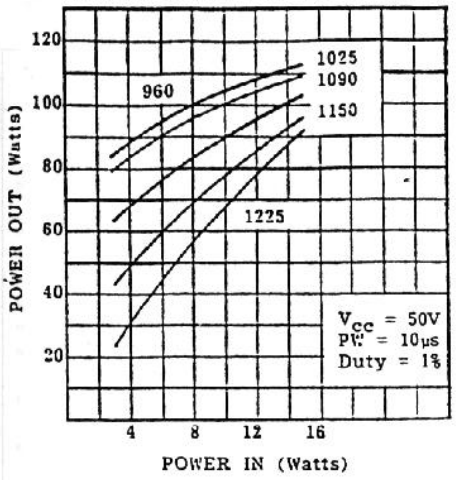
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	I_C = 10mA	I_B = 0	65.0			V
BV_{CES}	I_C = 25mA	V_{BE} = 0	65.0			V
BV_{EBO}	I_E = 10mA	I_C = 0	3.5			V
I_{CES}	V_{CE} = 50.0V	V_{BE} = 0			10.0	mA

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_O**	f = 1090MHz	V_{cc} = 50.0V	P_i = 13W		100.0		W
P_G	f = 1090MHz	V_{cc} = 50.0V	P_i = 13W		8.8		dB
P_o**	f = 1025/1150MHz	V_{cc} = 50.0V	P_i = 13W	90.0	95.0		W
P_g	f = 1025/1150MHz	V_{cc} = 50.0V	P_i = 13W	8.4	8.6		dB
P_o***	f = 960/1215MHz	V_{cc} = 50.0V	P_i = 13W		90.0		W
P_g	f = 960/1215MHz	V_{cc} = 50.0V	P_i = 13W		8.4		dB

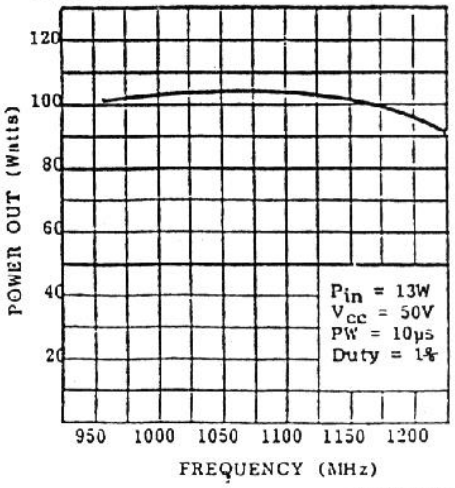
** Pulse width 10µs, duty cycle 1%.
*** Pulse width 10µs, duty cycle 10%.

TYPICAL POWER OUT vs. POWER IN



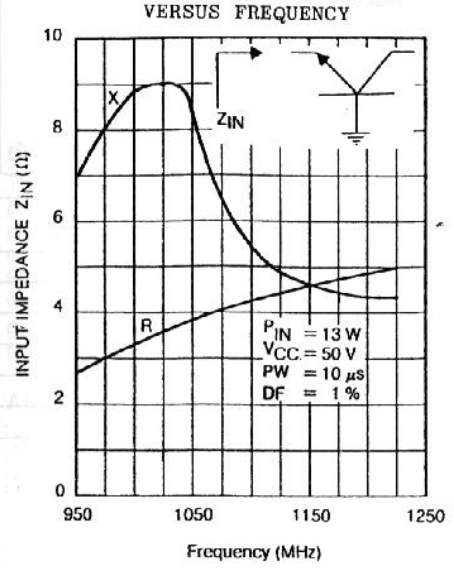
S88SD1536-8-02

TYPICAL POWER OUT vs. FREQUENCY



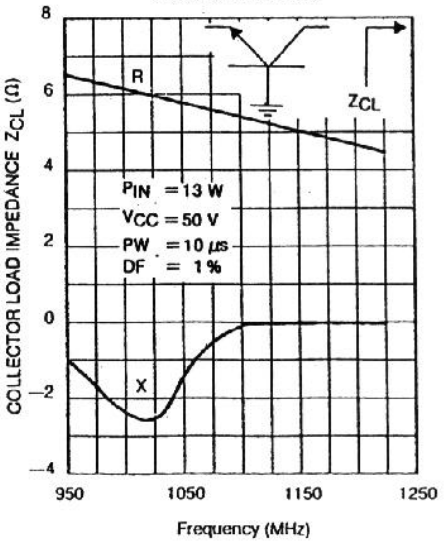
S88SD1536-8-03

TYPICAL INPUT IMPEDANCE
VERSUS FREQUENCY



S88SD1536-8-04

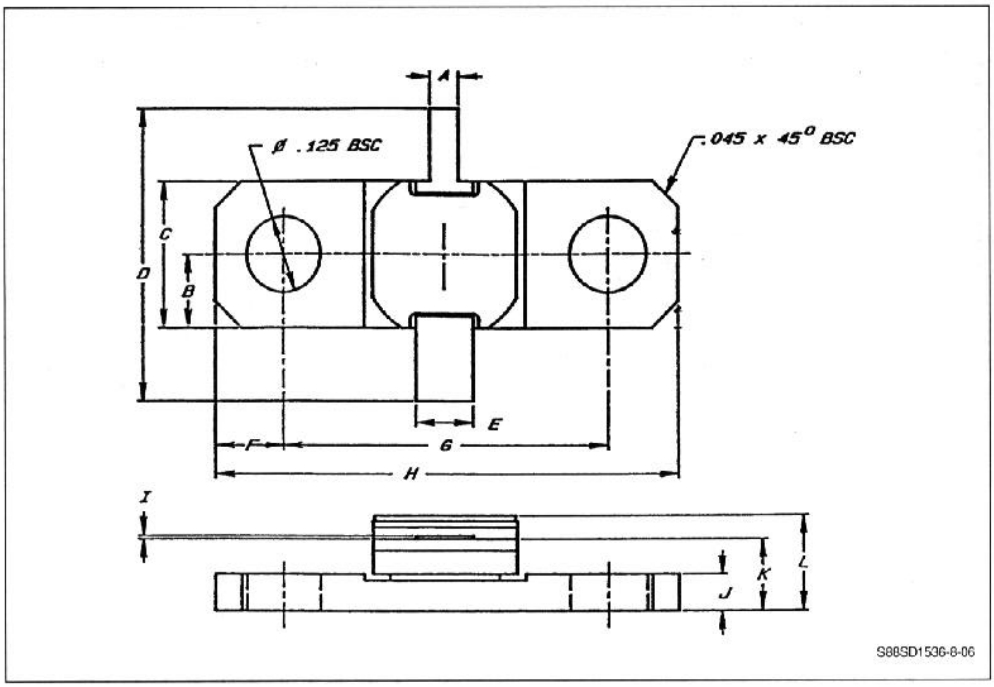
TYPICAL COLLECTOR LOAD IMPEDANCE
VERSUS FREQUENCY



S88SD1536-8-05

PACKAGE MECHANICAL DATA

.250 x .250 2LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.045/1.14	.055/1.40
B	.125/3.18 BSC	
C	.245/6.22	.255/6.48
D	1.235/31.37	
E	.095/2.41	.105/2.67
F	.119/3.02 BSC	

	Minimum Inches/mm	Maximum Inches/mm
G	.557/14.15	.567/14.40
H	.795/20.19	.805/20.45
I	.002/0.05	.006/0.15
J	.057/1.45	.067/1.70
K	.112/2.84	.132/3.35
L		.175/4.45