

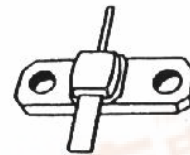
Microsemi
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Progress Powered by Technology

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SD1527-8

RF & MICROWAVE TRANSISTORS IFF/DME APPLICATIONS

- DESIGNATED FOR HIGH POWER PULSE IFF AND TACAN
- 5.0 WATTS (min.) IFF 1030-1090MHz
- 4.0 WATTS (typ.) TACAN 960-1215MHz
- GREATER THAN 11.5dB GAIN
- REFRACTORY BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- INFINITE LOAD - VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION



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

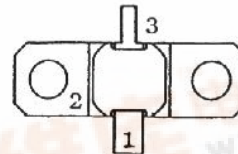
ORDER CODE
SD1527-08

BRANDING
SD1527-8

DESCRIPTION

The SD1527-8 is a gold metallized, silicon NPN power transistor. The SD1527-8 is designed for applications requiring peak power and low duty cycles such as IFF, DME, TACAN. The SD1527-8 is packaged in the .250" input matched hermetic stripline flange package resulting in improved broadband performance and a low thermal resistance.

PIN CONNECTION



S88SD1527-8-01

1 emitter
2 base4

3 collector

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	80.0	V
V_{CES}	Collector - Emitter Voltage	80.0	V
V_{EBO}	Emitter - Base Voltage	3.5	V
I_C	Collector Current (max.)	1.0	A
P_{TOT}	Total Device Dissipation at $+25^{\circ}C$	21.9	W
T_{STG}	Storage Temperature	- 65 to + 200	$^{\circ}C$
T_J	Junction Temperature	+ 200	$^{\circ}C$

THERMAL DATA

$R_{TH(J-C)}$	Junction-case Thermal Resistance	8.0	$^{\circ}C/W$
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May 1989

1/4

705

SD1527-8**ELECTRICAL CHARACTERISTICS** ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CE0}	$I_C = 10\text{mA}$	$I_B = 0$	80.0			V
BV_{CES}	$I_C = 25\text{mA}$	$V_{BE} = 0$	80.0			V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0$	3.5			V
I_{CES}	$V_{CB} = 50.0\text{V}$	$V_{BE} = 0$			1.0	mA

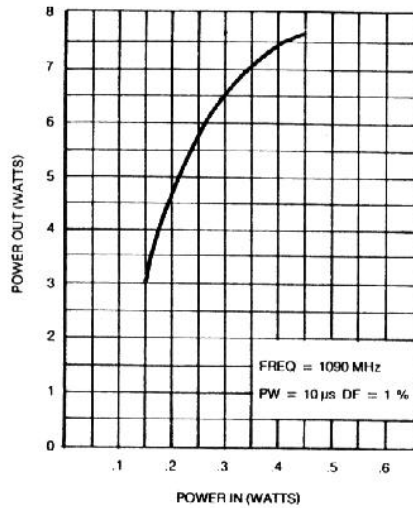
DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$P_{O^{**}}$	$f = 1090\text{MHz}$	$V_{CE} = 50.0\text{V}$	5.0			W
P_G	$f = 1090\text{MHz}$	$V_{CE} = 50.0\text{V}$	11.5			dB
$P_{O^{**}}$	$f = 1090\text{MHz}$	$V_{CE} = 28.0\text{V}$		4.0		W
P_G	$f = 1090\text{MHz}$	$V_{CE} = 28.0\text{V}$		9.0		dB
$P_{O^{***}}$	$f = 960/1215\text{MHz}$	$V_{CE} = 28.0\text{V}$		4.0		W
P_G	$f = 960/1215\text{MHz}$	$V_{CE} = 28.0\text{V}$		8.0		dB
Z_{in}	$f = 1090\text{MHz}$	$V_{CE} = 50.0\text{V}$	$P_i = .5\text{W}$		3.6-j2.9	Ω
Z_{ol}	$f = 1090\text{MHz}$	$V_{CE} = 50.0\text{V}$	$P_i = .5\text{W}$		4.7+j17.5	Ω

** Pulse width 10 μs , duty cycle 1%.

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

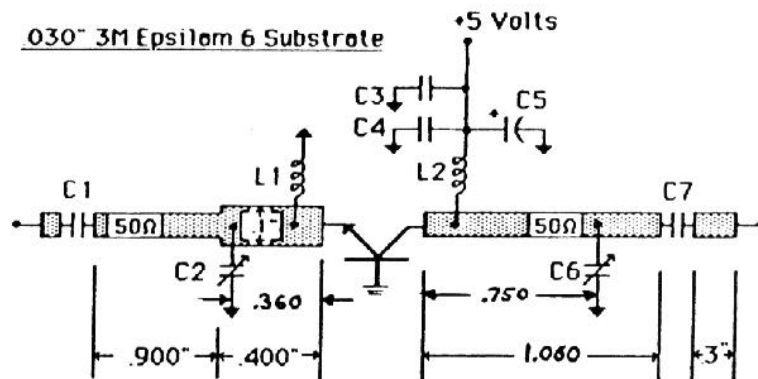
TYPICAL POWER OUT vs. POWER IN



S88SD1527-8-02

CIRCUIT DIAGRAM

1025 - 1150 WIDE BAND



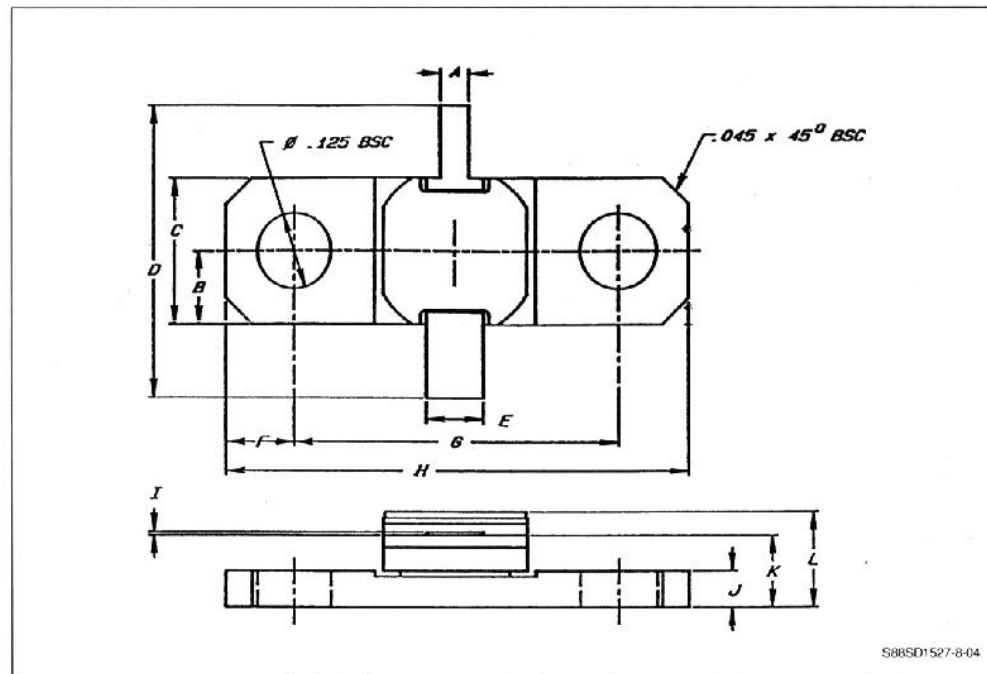
S88SD1527-8-03

Component	L1	L2	C2, C6	C1, C3, C4, C7	C5
Value	4.5	8.5	.6 - 4.5	470	2200
Units	Turns AWG #22	Turns AWG #24	pF	pF	μ F

SD1527-8

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