

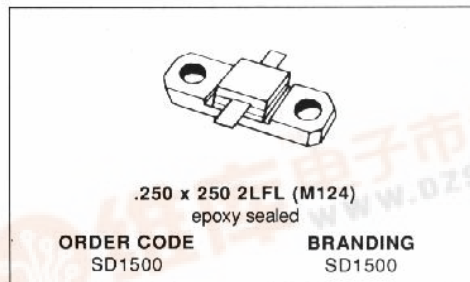
Microsemi
RF Products
Progress Powered by Technology

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SD1500

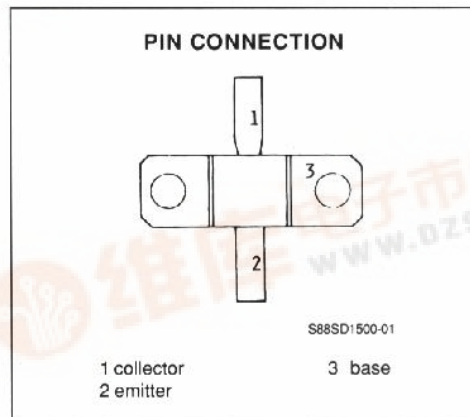
RF & MICROWAVE TRANSISTORS L BAND RADAR APPLICATIONS

- DESIGNED FOR USE IN LONG PULSE L-BAND APPLICATIONS LIKE RADAR, JTIDS, ETC.
- EXTREMELY RUGGED
- THERMALLY STABLE
- GOLD METALLIZATION
- CAPABLE OF OPERATION AT GREATER THAN 500 μ s AND 20%
- STRIPLINE FLANGE PACKAGE



DESCRIPTION

The SD1500 is a gold metallized silicon NPN Planar Pulsed Transistor that has been designed for use in extended pulse width and duty cycle applications from 1200 to 1400MHz. This device is extremely rugged, thermally stable, and is capable of operation at pulse widths in excess of 500 μ s and duty cycles greater than 20%.



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	65.0	V
V_{CEO}	Collector - Emitter Voltage	30.0	V
V_{EBO}	Emitter - Base Voltage	4.0	V
I_C	Collector Current (max.)	2.0	A
P_{TOT}	Total Device Dissipation at + 25 $^{\circ}C$	53.0	W
T_{STG}	Storage Temperature	- 65 to + 150	$^{\circ}C$
T_J	Junction Temperature	+ 200	$^{\circ}C$

THERMAL DATA

$R_{TH(J-C)}$	Junction-case Thermal Resistance	3.3	$^{\circ}C/W$
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May 1989

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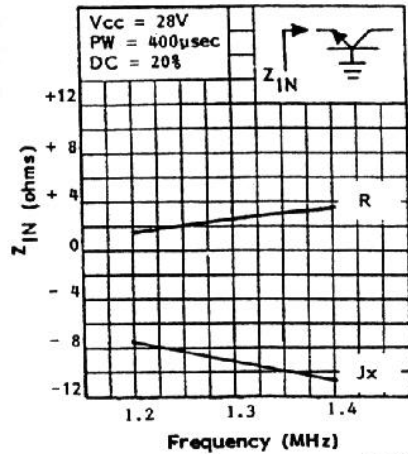
SD1500**ELECTRICAL CHARACTERISTICS** ($T_{case} = 25^{\circ}\text{C}$)**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CEO}	$I_C = 10\text{mA}$	$I_B = 0$	30.0			V
BV_{CES}	$I_C = 25\text{mA}$	$V_{BE} = 0$	65.0			V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0$	4.0			V
I_{CEO}	$V_{CB} = 28.0\text{V}$	$I_E = 0$			5.0	mA
h_{FE}	$V_{CE} = 5.0\text{V}$	$I_C = 100.0\text{mA}$	20.0			

DYNAMIC

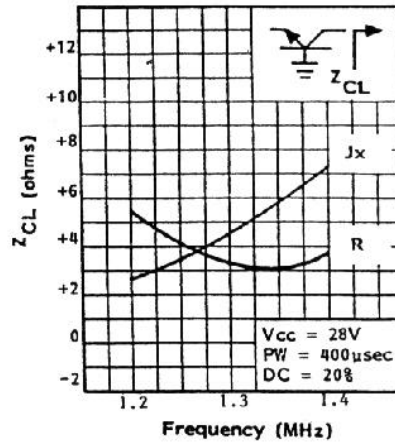
Symbol	Test Conditions				Value			Unit
					Min.	Typ.	Max.	
P_O	$f = 1400\text{MHz}$	$V_{CE} = 28\text{V}$	$PW = 400\mu\text{s}$	$DC = 20\%$	5.0			W
P_G	$f = 1400\text{MHz}$	$V_{CE} = 28\text{V}$	$PW = 400\mu\text{s}$	$DC = 20\%$	7.0			dB
Z_{in}	$f = 1400\text{MHz}$	$V_{CE} = 28\text{V}$	$P_{in} = 1.0\text{W}$			3.7-j10.6		Ω
Z_{cl}	$f = 1400\text{MHz}$	$V_{CE} = 28.0\text{V}$	$P_{in} = 1.0\text{W}$			3.5+j7.3		Ω

TYPICAL INPUT IMPEDANCE vs. FREQUENCY



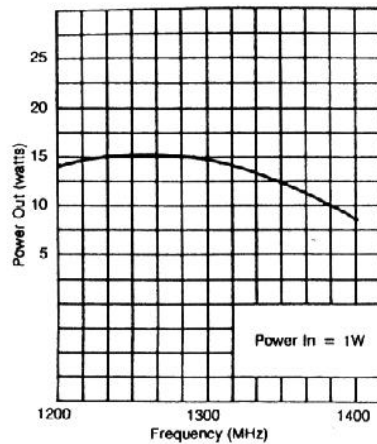
S88SD1500-02

TYPICAL COLLECTOR LOAD IMPEDANCE vs. FREQUENCY



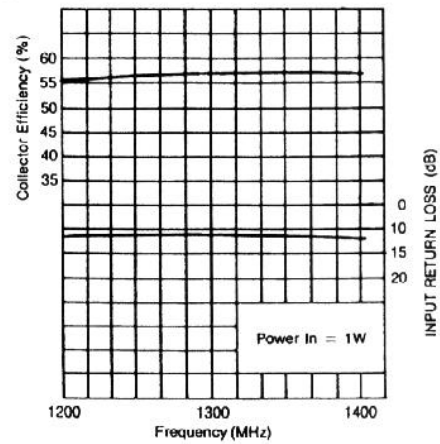
S88SD1500-03

TYPICAL POWER OUTPUT vs. FREQUENCY



S88SD1500-04

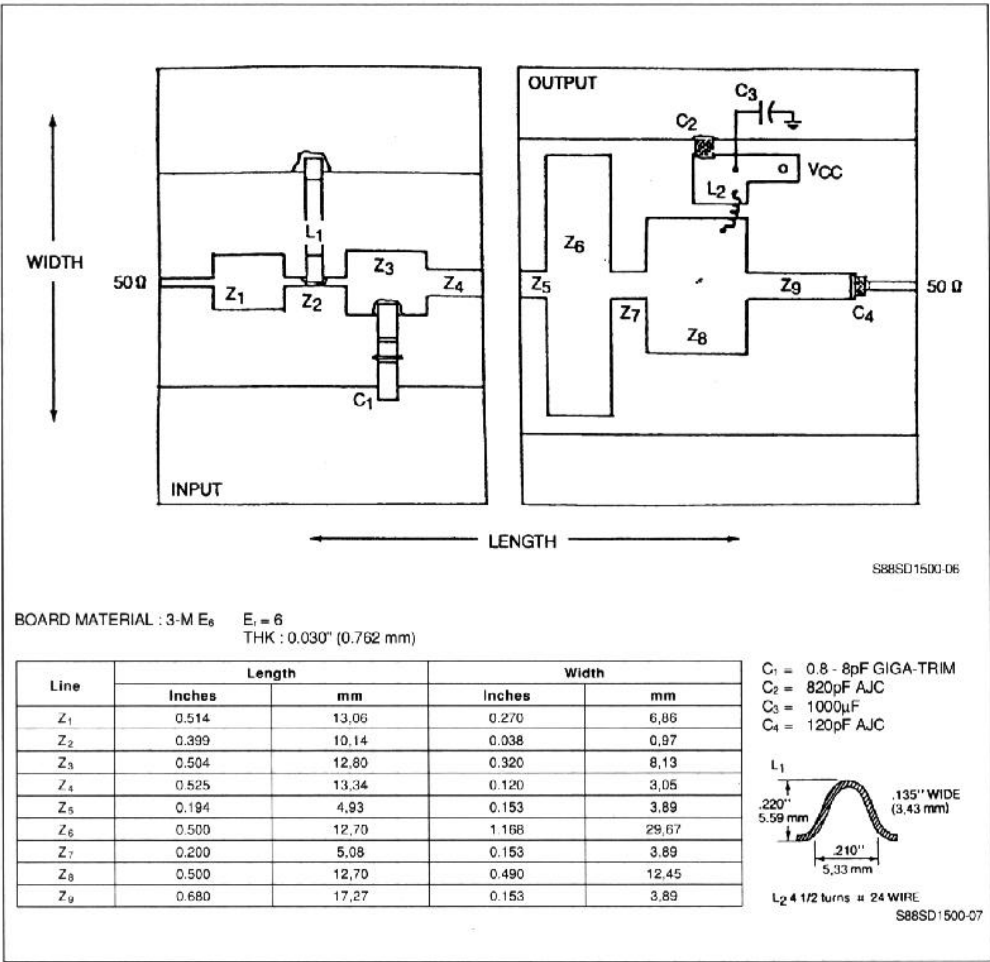
TYPICAL COLLECTOR EFFICIENCY INPUT RETURN LOSS vs. FREQUENCY



S88SD1500-05

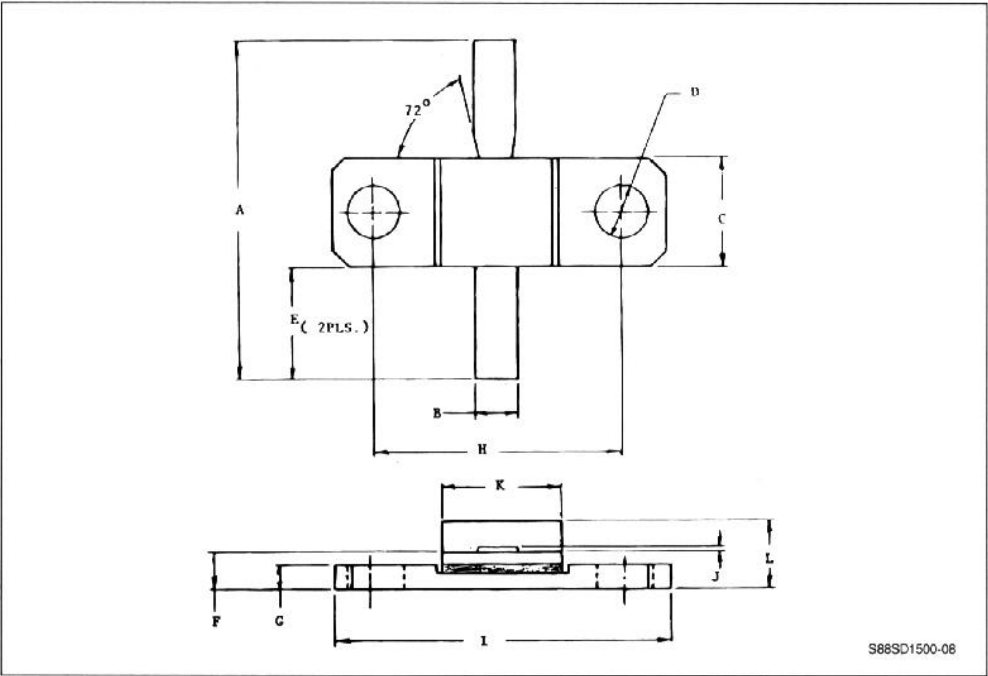
SD1500

TEST FIXTURE



PACKAGE MECHANICAL DATA

.250 x .250 2LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.750/19.05	
B	.095/2.41	.105/2.67
C	.245/6.22	.255/6.48
D	.120/3.05	.130/3.30
E	.350/8.89	
F	.075/1.91	.100/2.54

	Minimum Inches/mm	Maximum Inches/mm
G	.058/1.47	.064/1.63
H	.555/14.10	.570/14.48
I	.795/20.19	.805/20.45
J	.003/0.08	.006/0.15
K	.245/6.22	.255/6.48
L	.150/3.81	.160/4.06