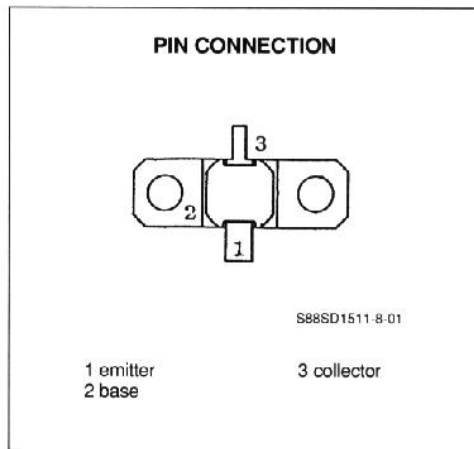
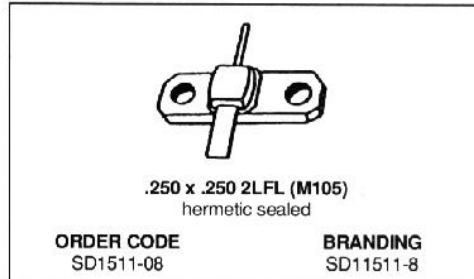


**RF & MICROWAVE TRANSISTORS**  
**UHF PULSE POWER**

- COMMON EMITTER
- 12W TYPICAL CW
- 15W TYPICAL PULSED
- GOLD METALLIZATION
- EMITTER BALLAST
- 30:1 LOAD VSWR CAPABILITY



**DESCRIPTION**

- Gold Metallized Silicon NPN
- For 28V CW and Pulsed Radar Application

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	65	V
$V_{CES}$	Collector-Emitter Voltage	65	V
$V_{EBO}$	Emitter-Base Voltage	4	V
$I_C$	Collector Current (max.)	2	A
$P_{TOT}$	Total Device Dissipation at + 25°C	58.3	W
$T_{STG}$	Storage Temperature	- 65 to + 150	°C
$T_J$	Junction Temperature	+ 200	°C

**THERMAL DATA**

$R_{TH(J-C)}$	Junction-Case Thermal Resistance	3	°C/W
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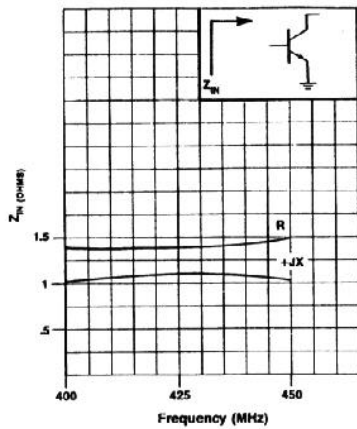
**SD1511-8****ELECTRICAL CHARACTERISTICS** ( $T_{\text{case}} = 25^{\circ}\text{C}$ )**STATIC**

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 10\text{mA}$	65			V
$BV_{\text{EBO}}$	$I_{\text{E}} = 1\text{mA}$	4			V
$I_{\text{CBO}}$	$V_{\text{CB}} = 30\text{V}$			1	mA
$h_{\text{FE}}$	$V_{\text{CE}} = 5\text{V}$ $I_{\text{C}} = 1\text{A}$	10		100	

**DYNAMIC**

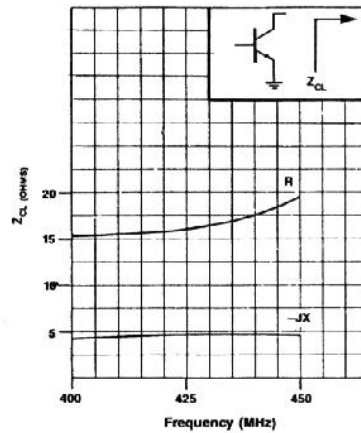
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
$P_{\text{out}}$	$f = 425\text{MHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{in}} = 1.2\text{W}$	10	12		W
$P_{\text{GAIN}}$	$f = 425\text{MHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{in}} = 1.2\text{W}$	9.2	10		dB
$\eta_{\text{c}}$	$f = 425\text{MHz}$ $V_{\text{CC}} = 28\text{V}$ $P_{\text{out}} = 10\text{W}$	50	55		%

Typical Input Impedance vs. Frequency



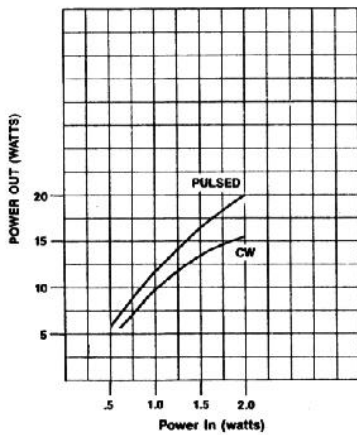
S88SD1511-8-02

Typical Collector Load Impedance vs. Frequency



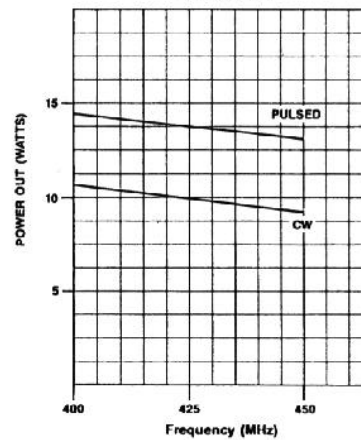
S88SD1511-8-03

Typical Output Power vs. Input Power



S88SD1511-8-04

Typical Output Power vs. Frequency



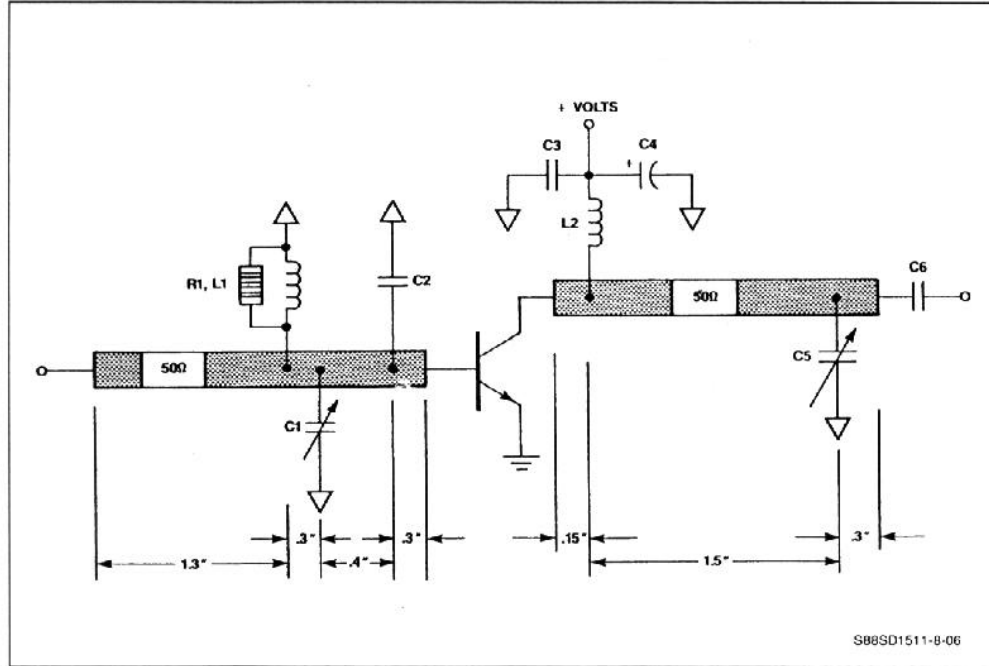
S88SD1511-8-05

Pulse Conditions  
 Pulse width = 250μs  
 Duty Factor = 10%

SD1511-8

TEST CIRCUIT 425MHz WIDEBAND

.030 " 3M EPSILAM 6 SUBSTRATE

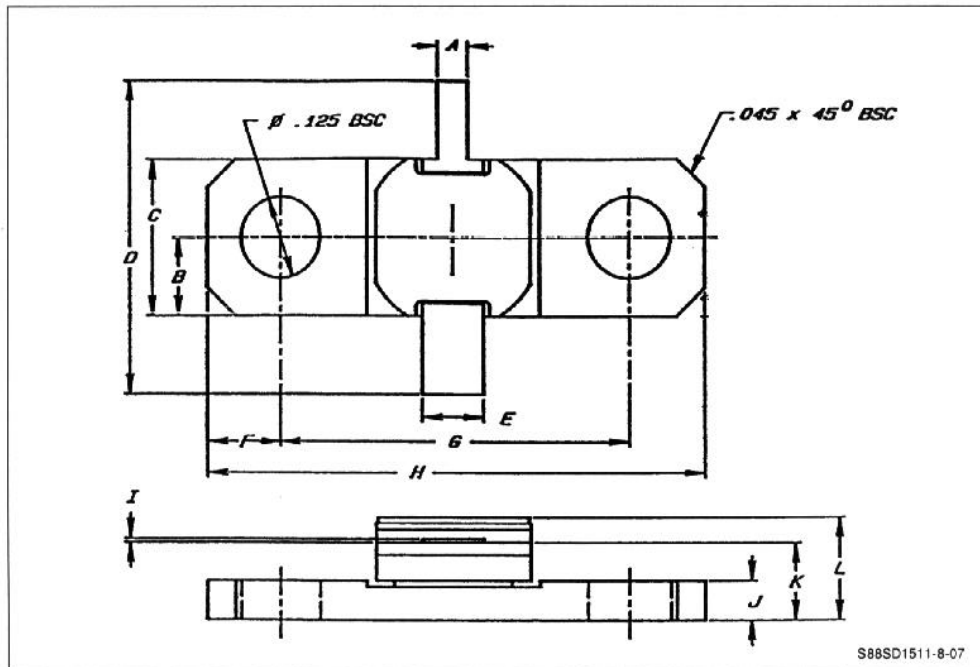


S88SD1511-8-06

Component	L1	L2	R1	C1, C5	C2	C3, C6	C4
Value	12.5 Turns	AWG # 18 Hairpin L = 1"	1000	6-12	33	470	1000
Units	AWG # 24		Ω	pF	pF	pF	μF

## 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