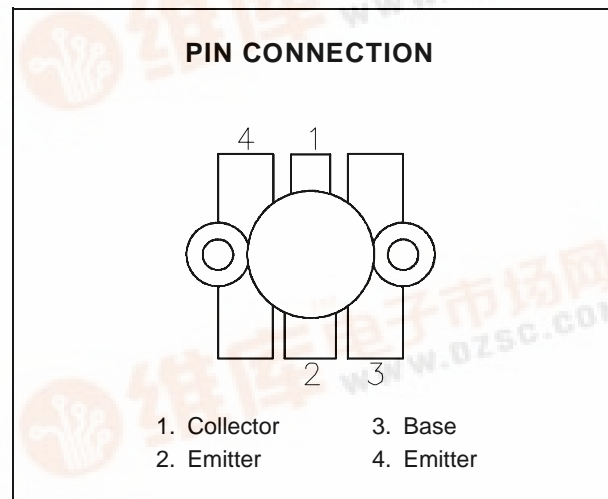
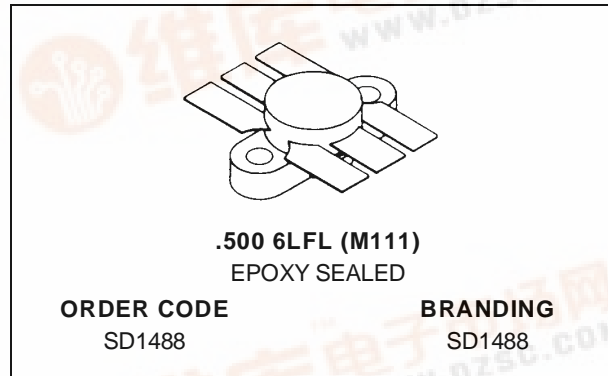




# SD1488

## RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

- 470 MHz
- 12.5 VOLTS
- EFFICIENCY 50%
- COMMON EMITTER
- P<sub>OUT</sub> = 38 W MIN. WITH 5.8 dB GAIN



### DESCRIPTION

The SD1488 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for broadband applications in the 450 - 512 MHz land mobile radio band. This device utilizes diffused emitter resistors to withstand infinite VSWR at rated operating conditions.

### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	36	V
V <sub>CEO</sub>	Collector-Emitter Voltage	16	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>c</sub>	Device Current	8.0	A
P <sub>DISS</sub>	Power Dissipation	117	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	1.5	°C/W
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# SD1488

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

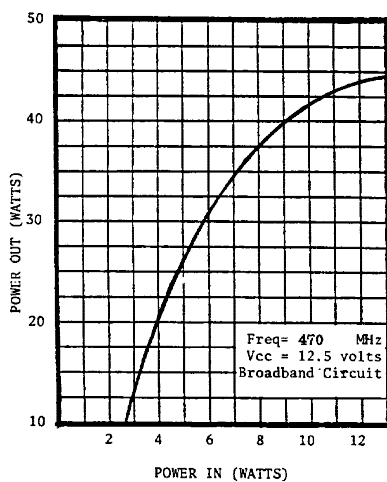
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CES</sub>	I <sub>C</sub> = 15 mA	V <sub>BE</sub> = 0 V	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50 mA	I <sub>B</sub> = 0 mA	16	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5 mA	I <sub>C</sub> = 0 mA	4.0	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 12.5 V	I <sub>E</sub> = 0 mA	—	—	5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 1 A	20	—	300	—

### DYNAMIC

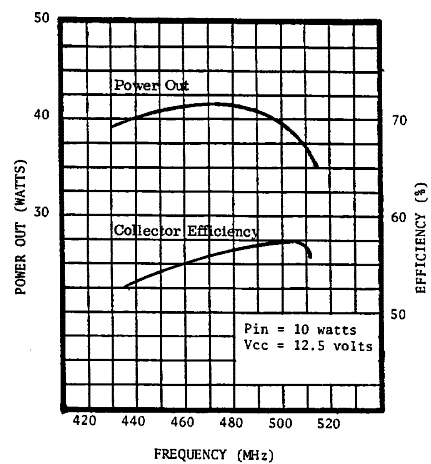
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 470 MHz	P <sub>IN</sub> = 10.0 W	V <sub>CC</sub> = 12.5 V	38	—	—	W
G <sub>P</sub>	f = 470 MHz	P <sub>IN</sub> = 10.0 W	V <sub>CC</sub> = 12.5 V	5.8	—	—	dB
η <sub>C</sub>	f = 470 MHz	P <sub>OUT</sub> = 38 W	V <sub>CC</sub> = 12.5 V	50	—	—	%
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 12.5 V		—	95	—	pF

### TYPICAL PERFORMANCE

**POWER OUTPUT vs POWER INPUT**

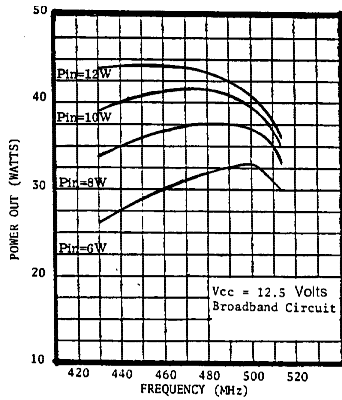


**POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY**

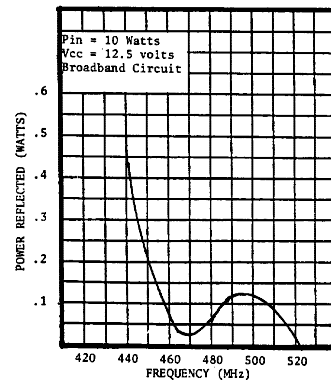


TYPICAL PERFORMANCE (cont'd)

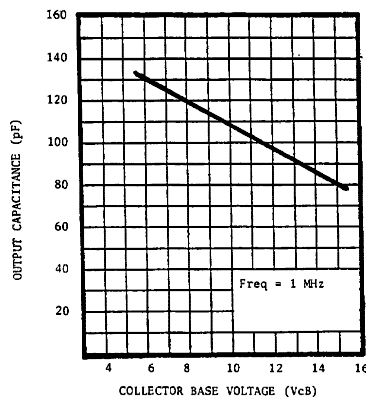
POWER OUTPUT vs FREQUENCY



POWER REFLECTED vs FREQUENCY

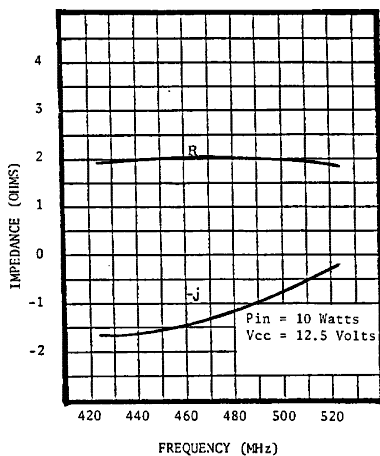


OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE

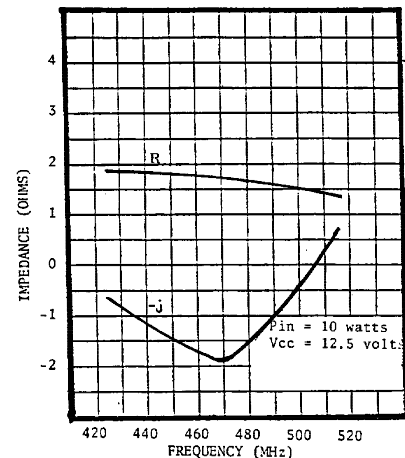


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE



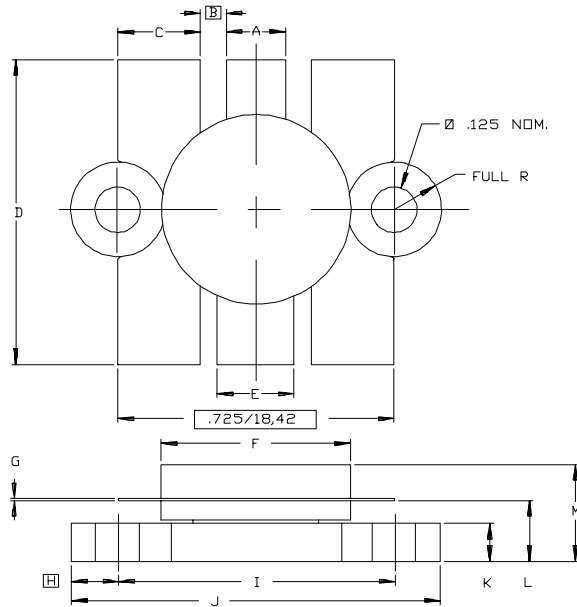
TYPICAL COLLECTOR LOAD IMPEDANCE



**SD1488**

**PACKAGE MECHANICAL DATA**

Ref.: Dwg. No.12-0111



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.150/3,43	.160/4,06	K	.095/2,41	.105/2,67
B	.045/1,14		L	.150/3,81	.170/4,32
C	.210/5,33	.220/5,59	M		.280/7,11
D	.835/21,21	.865/21,97			
E	.200/5,08	.210/5,33			
F	.490/12,45	.510/12,95			
G	.003/0,08	.007/0,18			
H	.125/3,18				
I	.720/18,29	.730/18,54			
J	.970/24,64	.980/24,89			

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