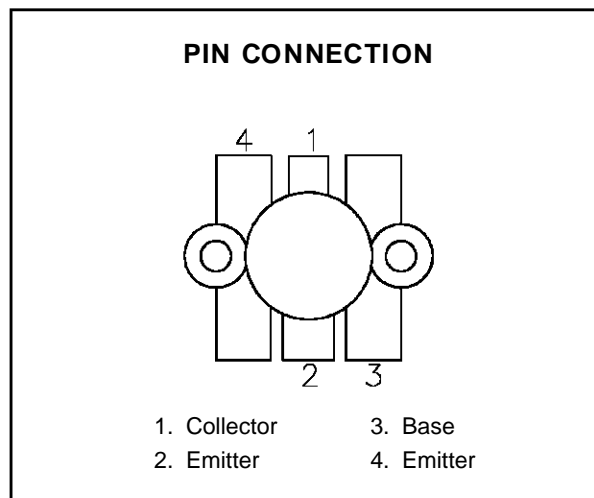
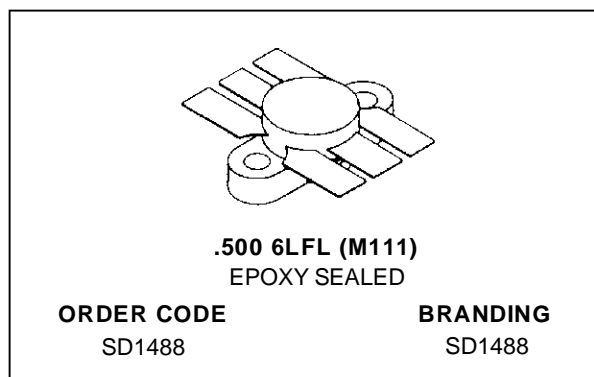


**RF & MICROWAVE TRANSISTORS  
UHF MOBILE APPLICATIONS**

- 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

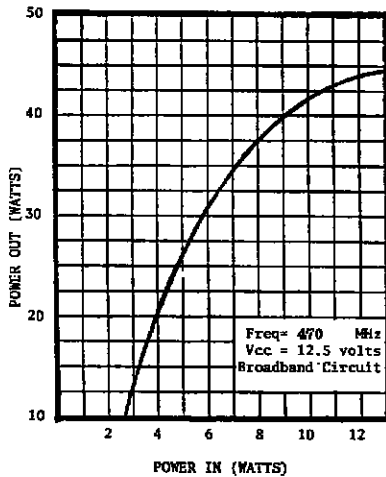
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CES</sub>	I <sub>C</sub> = 15 mA	V <sub>BE</sub> = 0 V	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50 mA	I <sub>B</sub> = 0 mA	16	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5 mA	I <sub>C</sub> = 0 mA	4.0	—	—	V
I <sub>CES</sub>	V <sub>CE</sub>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

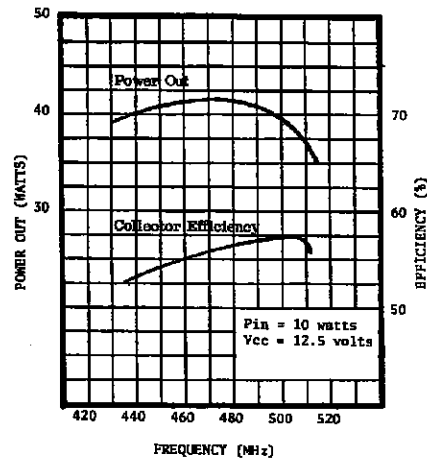
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 470 MHz	P <sub>IN</sub> = 10.0 W	V <sub>CC</sub> = 12.5 V	38	—	—	W
G <sub>P</sub>	f = 470 MHz	P <sub>IN</sub> = 10.0 W	V <sub>CC</sub> = 12.5 V	5.8	—	—	dB
η <sub>C</sub>	f = 470 MHz	P <sub>OUT</sub> = 38 W	V <sub>CC</sub>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

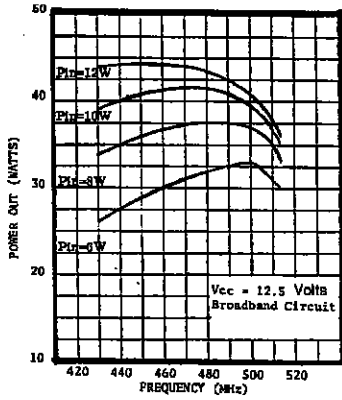


POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY

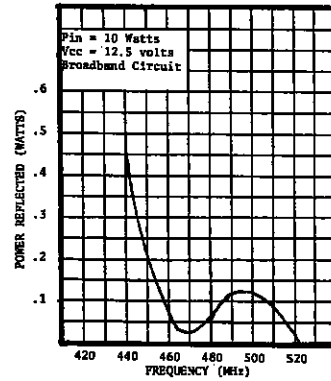


TYPICAL PERFORMANCE (cont'd)

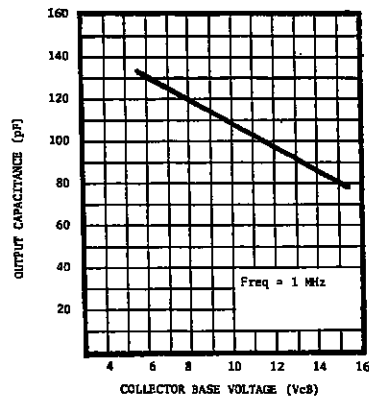
POWER OUTPUT vs FREQUENCY



POWER REFLECTED vs FREQUENCY

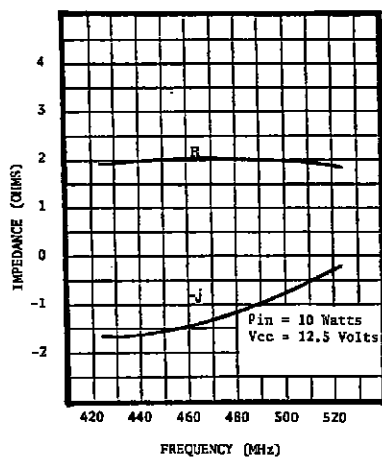


OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE

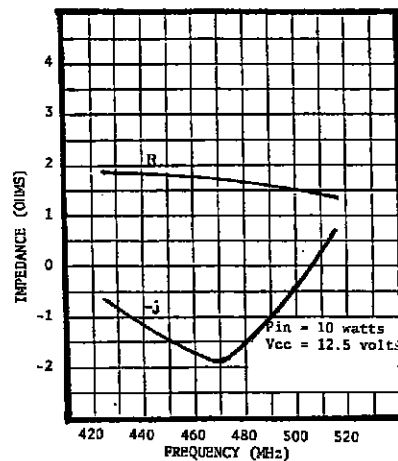


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

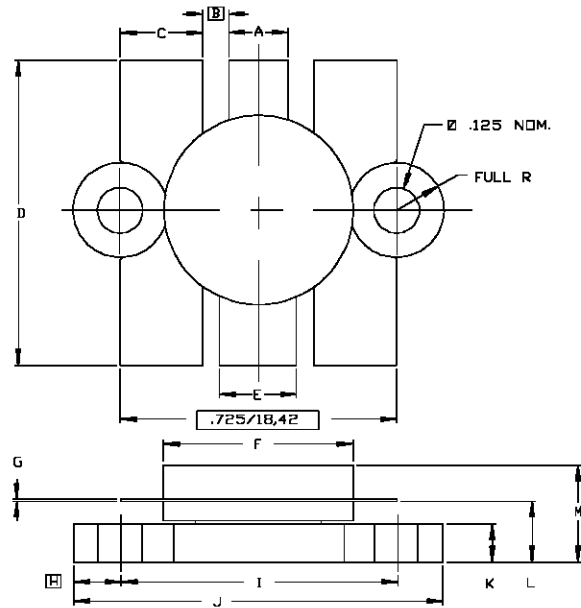


TYPICAL COLLECTOR LOAD IMPEDANCE



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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