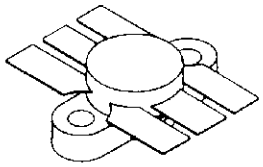
SGS-THOMSON MICROELECTRONICS

SD1488

RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

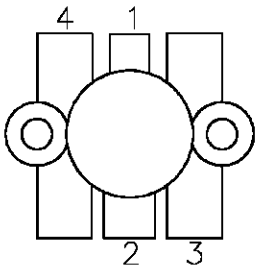
- 470 MHz
- 12.5 VOLTS
- EFFICIENCY 50%
- COMMON EMITTER
- P_{OUT} = 38 W MIN. WITH 5.8 dB GAIN



.500 6LFL (M111)
EPOXY SEALED

ORDER CODE	BRANDING
SD1488	SD1488

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

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_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	16	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	8.0	A
P_{DISS}	Power Dissipation	117	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.5	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

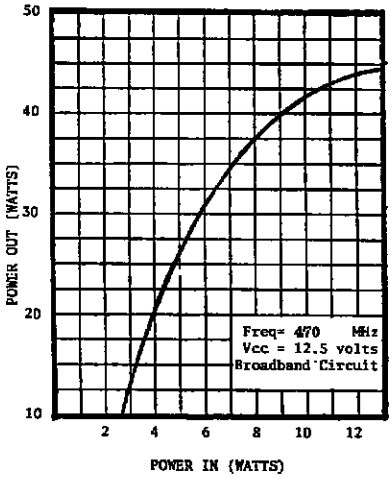
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 15 mA	V_{BE} = 0 V	36	—	—	V
BV_{CEO}	I_C = 50 mA	I_B = 0 mA	16	—	—	V
BV_{EBO}	I_E = 5 mA	I_C = 0 mA	4.0	—	—	V
I_{CES}	V_{CE} = 12.5 V	I_E = 0 mA	—	—	5	mA
h_{FE}	V_{CE} = 5 V	I_C = 1 A	20	—	300	—

DYNAMIC

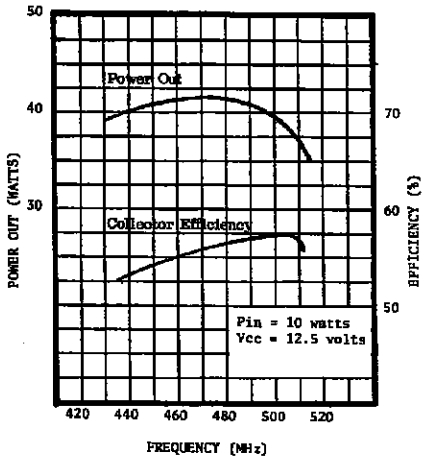
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 470 MHz	P_{IN} = 10.0 W	V_{CC} = 12.5 V	38	—	—	W
G_P	f = 470 MHz	P_{IN} = 10.0 W	V_{CC} = 12.5 V	5.8	—	—	dB
η_C	f = 470 MHz	P_{OUT} = 38 W	V_{CC} = 12.5 V	50	—	—	%
C_{OB}	f = 1 MHz	V_{CB} = 12.5 V		—	95	—	pF

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT

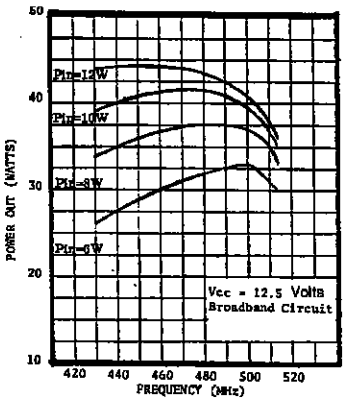


POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY

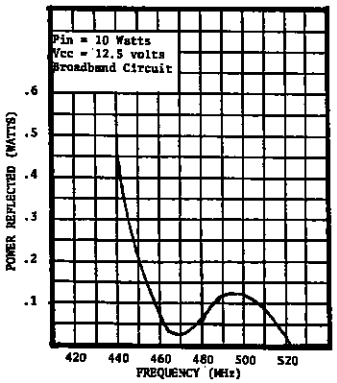


TYPICAL PERFORMANCE (cont'd)

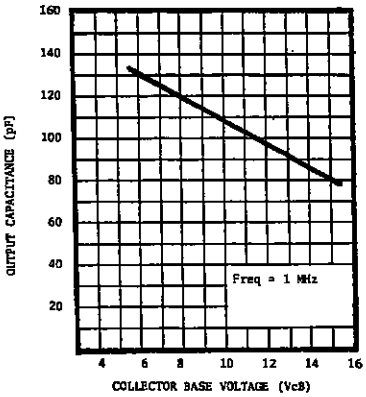
POWER OUTPUT vs FREQUENCY



POWER REFLECTED vs FREQUENCY

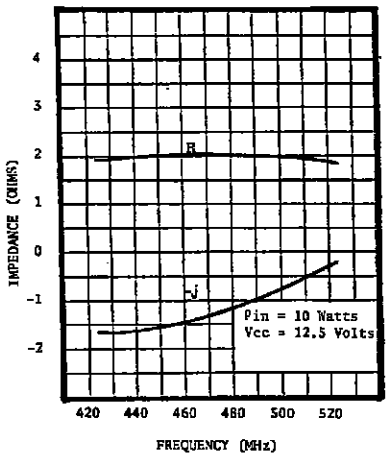


OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE

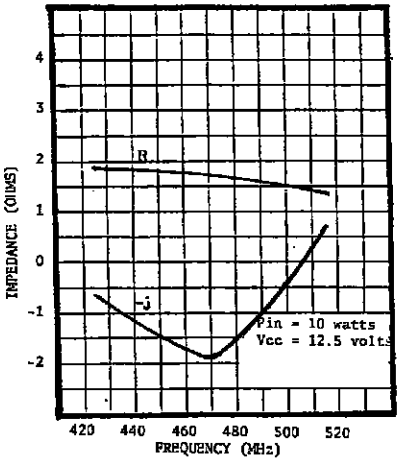


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

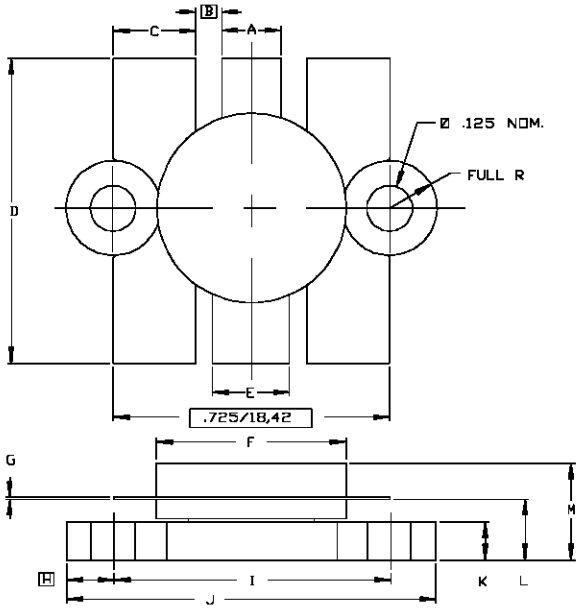


TYPICAL COLLECTOR LOAD IMPEDANCE



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0111



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.150/3,43	.160/4,06
B	.045/1,14	
C	.210/5,33	.220/5,59
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

CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
K	.095/2,41	.105/2,67
L	.150/3,81	.170/4,32
M		.280/7,11