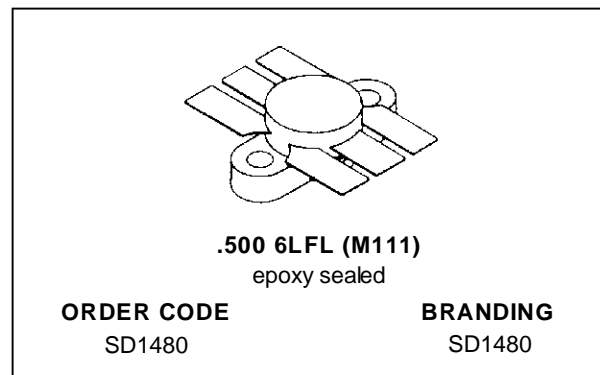
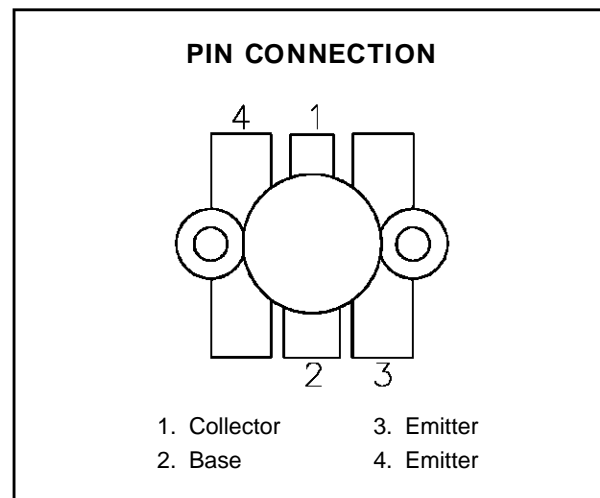


**RF & MICROWAVE TRANSISTORS  
VHF APPLICATIONS**

- 136 - 175 MHz
- 28 VOLTS
- EFFICIENCY 55%
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- P<sub>OUT</sub> = 125 W MIN. WITH 9.2 dB GAIN


**DESCRIPTION**

The SD1480 is a common emitter 28 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications applications. This internally matched device incorporates diffused emitter ballasting resistors and provides high gain and stable operation across the entire 136 - 175 MHz VHF communications band.


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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	36	V
V <sub>CES</sub>	Collector-Emitter Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>c</sub>	Device Current	20	A
P <sub>DISS</sub>	Power Dissipation	270	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	0.65	°C/W
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# SD1480

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

### STATIC

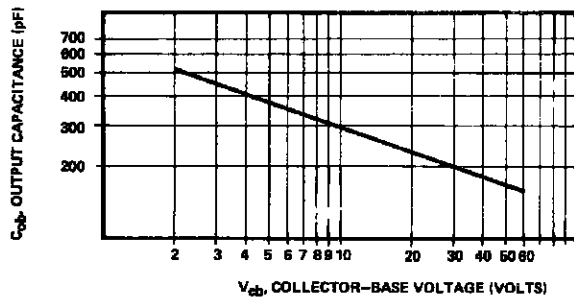
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 100 mA	I <sub>E</sub> = 0 mA	65	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 100 mA	V <sub>BE</sub> = 0 V	65	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 100 mA	I <sub>B</sub> = 0 mA	35	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10 mA	I <sub>C</sub> = 0 mA	4.0	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 30 V	I <sub>E</sub> = 0 mA	—	—	15	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 5 A	20	—	200	—

### DYNAMIC

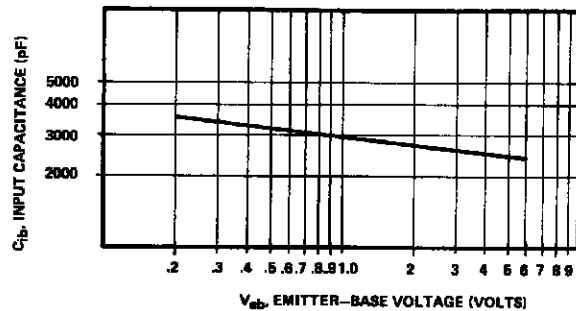
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 150 MHz	P <sub>IN</sub> = 15 W	V <sub>CE</sub> = 28 V	125	—	—	W
P <sub>G</sub>	f = 150 MHz	P <sub>OUT</sub> = 125 W	V <sub>CE</sub> = 28 V	9.2	—	—	dB
η <sub>c</sub>	f = 150 MHz	P <sub>OUT</sub> = 125 W	V <sub>CE</sub> = 28 V	55	—	—	%
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 28 V		—	—	250	pF
Load Mismatch	f = 150 MHz	P <sub>IN</sub> = 15 W	V <sub>CE</sub> = 28 V	20:1	—	—	VSWR

### TYPICAL PERFORMANCE

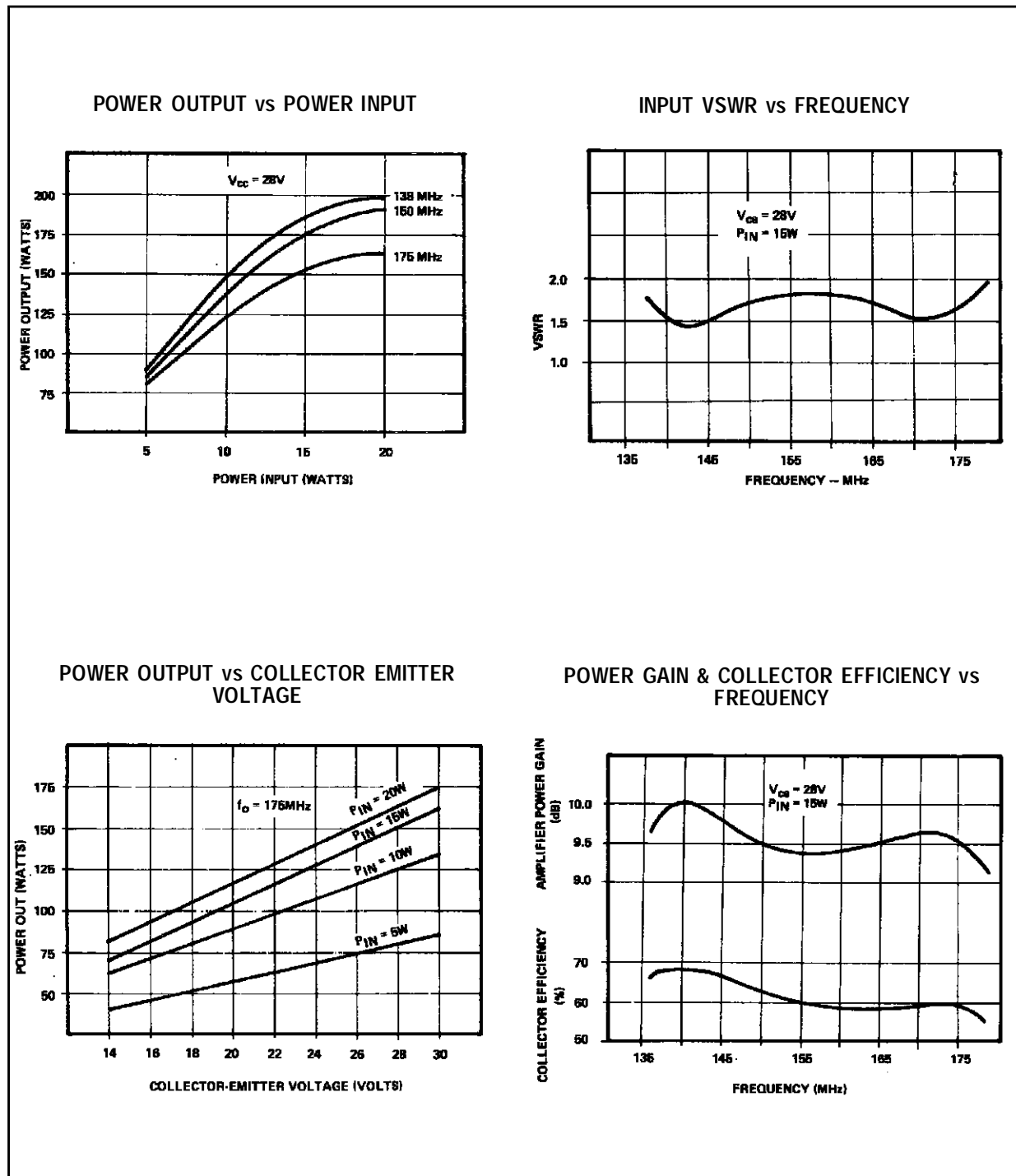
OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE



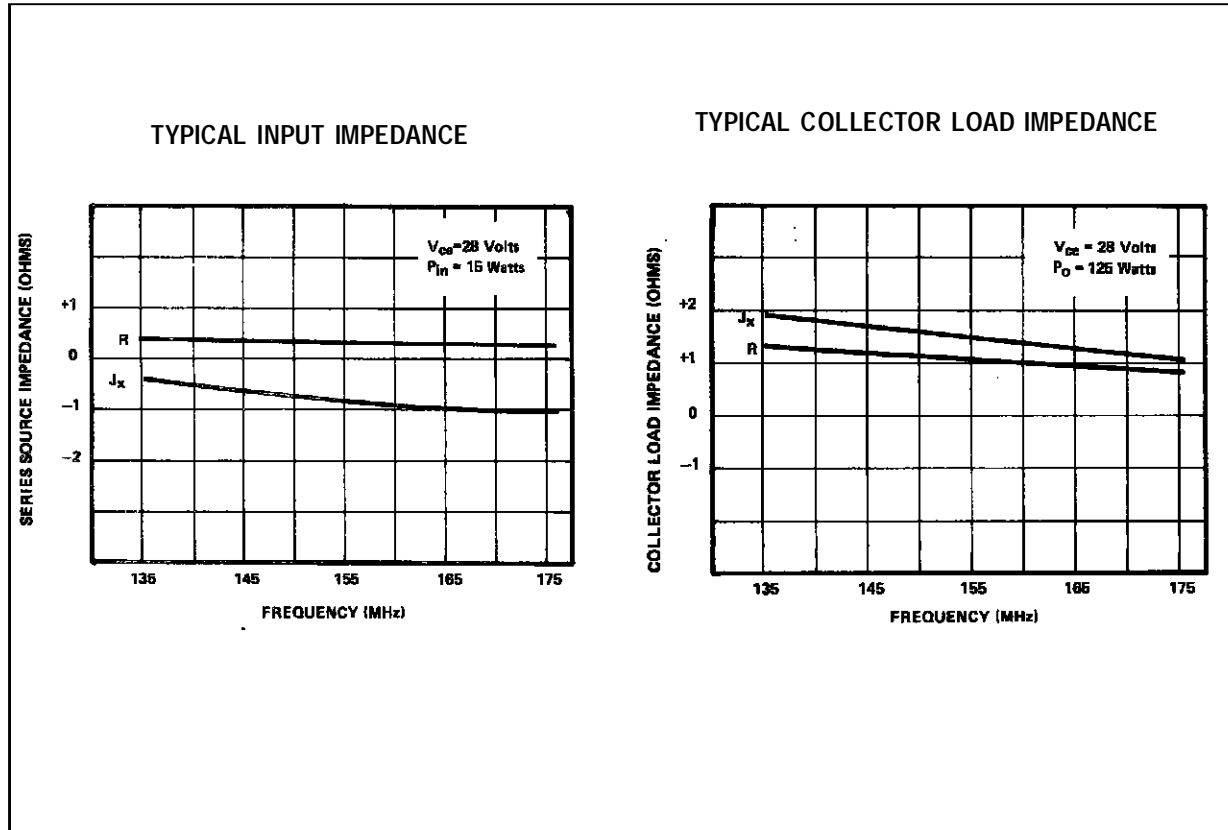
INPUT CAPACITANCE vs EMITTER BASE VOLTAGE



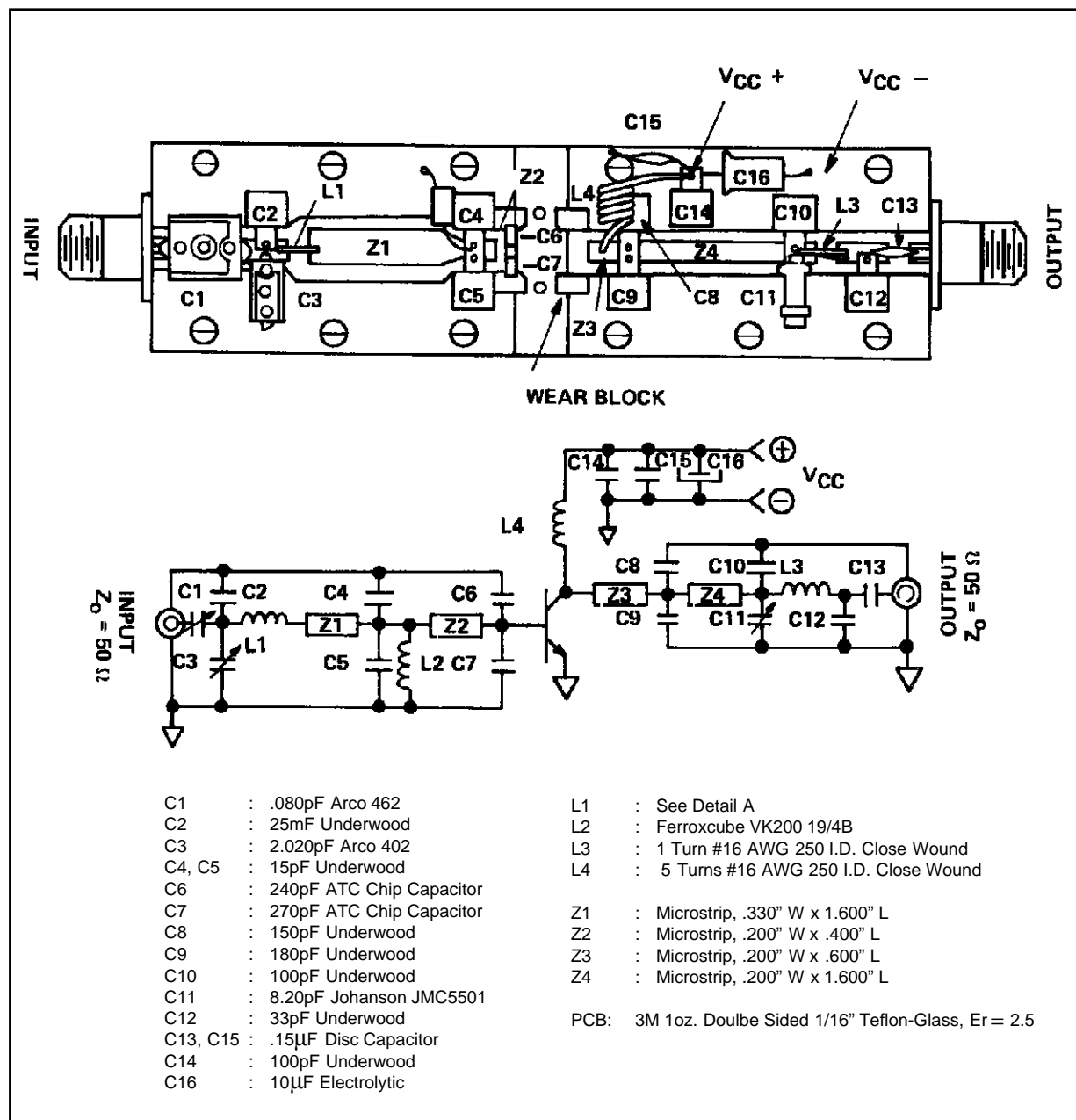
## TYPICAL PERFORMANCE (cont'd)



IMPEDANCE DATA

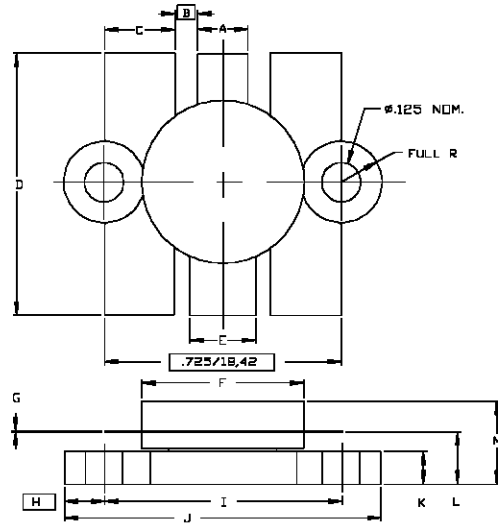


## TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0111 rev. D



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	.160/4.06	.180/4.58
C	.210/5.33	.220/5.59	H	.285/7.24	
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	.007/0.19			
H	.125/3.18				
I	.720/18.29	.730/18.54			
J	.970/24.64	.980/24.89			

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