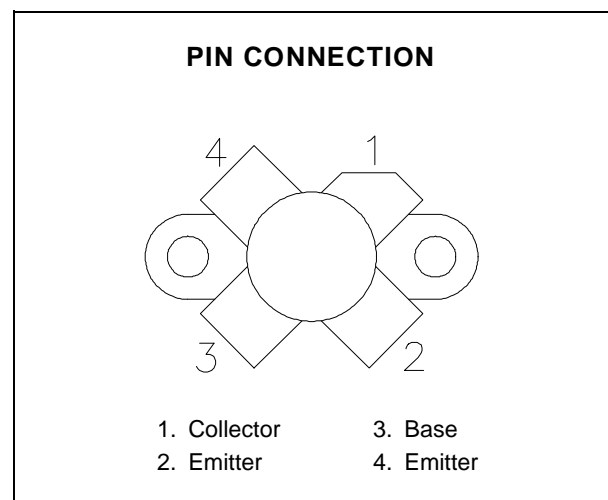
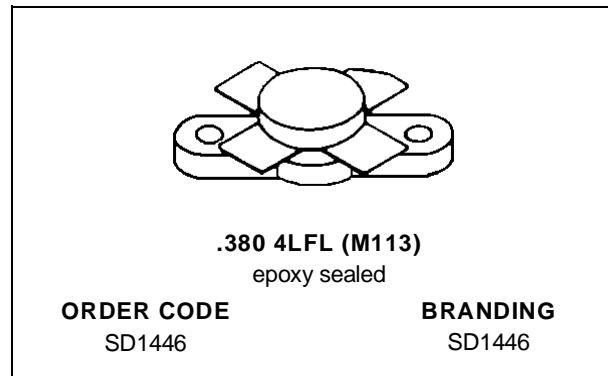


**RF & MICROWAVE TRANSISTORS
HF/VHF APPLICATIONS**

- 50 MHz
- 12.5 VOLTS
- EFFICIENCY 55%
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 70 \text{ W MIN. WITH } 10 \text{ dB GAIN}$


DESCRIPTION

The SD1446 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for land mobile transmitter applications. This device utilizes emitter ballasting and is extremely stable and capable of withstanding high VSWR under operating conditions.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{EBO}	Emitter-Base Voltage	3.5	V
I_C	Device Current	12.0	A
P_{DISS}	Power Dissipation	183	W
T_J	Junction Temperature	+200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.05	$^{\circ}\text{C/W}$
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SD1446

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

STATIC

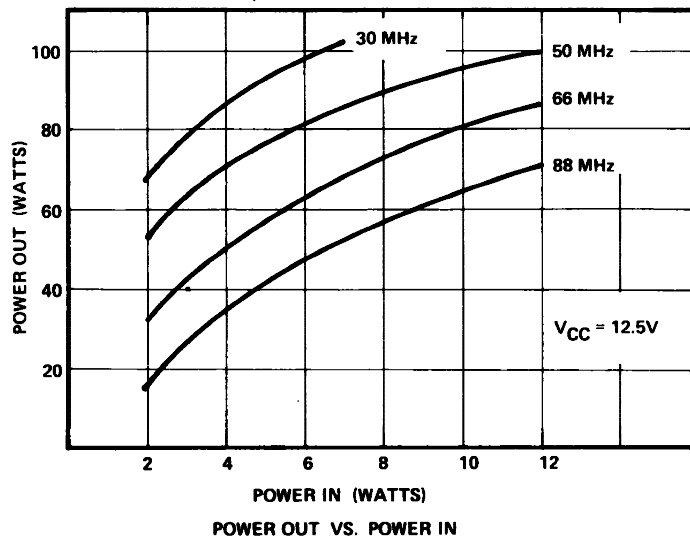
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 50mA	I _E = 0mA	36	—	—	V
BV _{CES}	I _C = 100mA	V _{BE} = 0V	36	—	—	V
BV _{CEO}	I _C = 50mA	I _B = 0mA	18	—	—	V
BV _{EBO}	I _E = 10mA	I _C = 0mA	3.5	—	—	V
I _{CES}	V _{CE} = 15V	I _E = 0mA	—	—	10	mA
h _{FE}	V _{CE} = 5V	I _C = 5A	10	—	—	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 50 MHz	P _{IN} = 7 W	V _{CE} = 12.5 V	70	—	—	W
G _P	f = 50 MHz	P _{IN} = 7 W	V _{CE} = 12.5 V	10	—	—	dB
η _C	f = 50 MHz	P _{IN} = 7 W	V _{CE} = 12.5 V	—	55	—	%
C _{OB}	f = 1 MHz	V _{CB} = 12.5V		—	—	300	pF

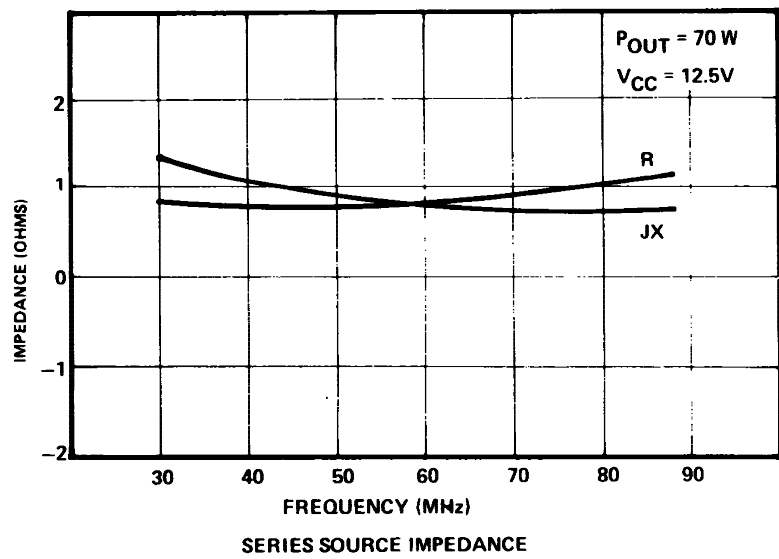
TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT



IMPEDANCE DATA

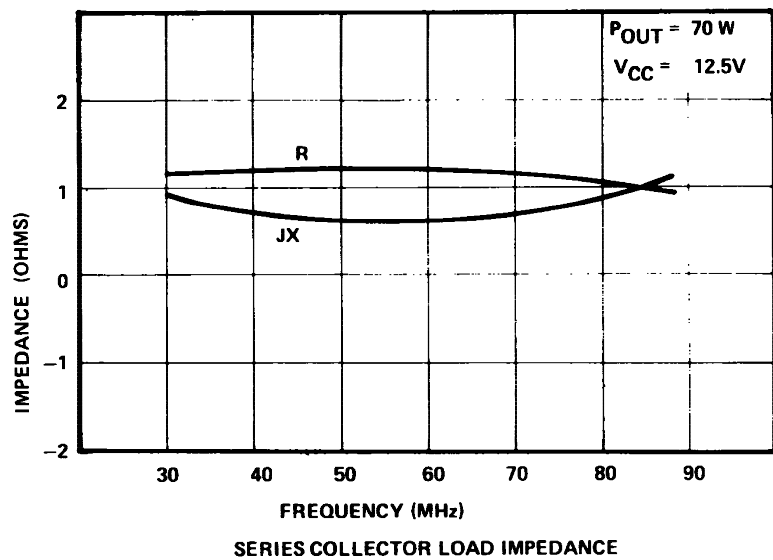
TYPICAL INPUT IMPEDANCE



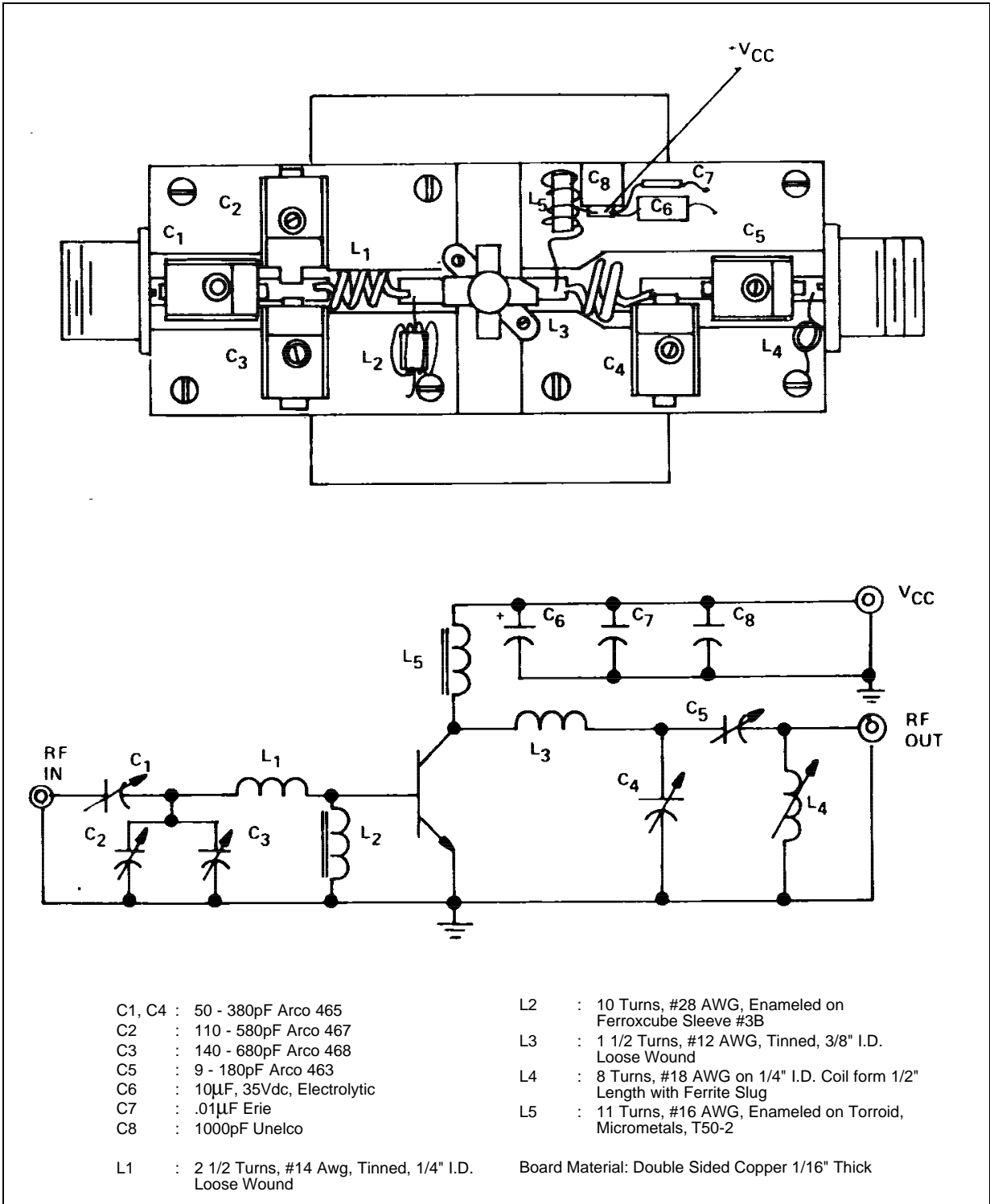
FREQ.	Z _{IN} (Ω)	Z _{CL} (Ω)
50 MHz	0.8 + j 0.9	1.2 + j 0.6

POUT = 70W
VCE = 12.5V

TYPICAL COLLECTOR LOAD IMPEDANCE

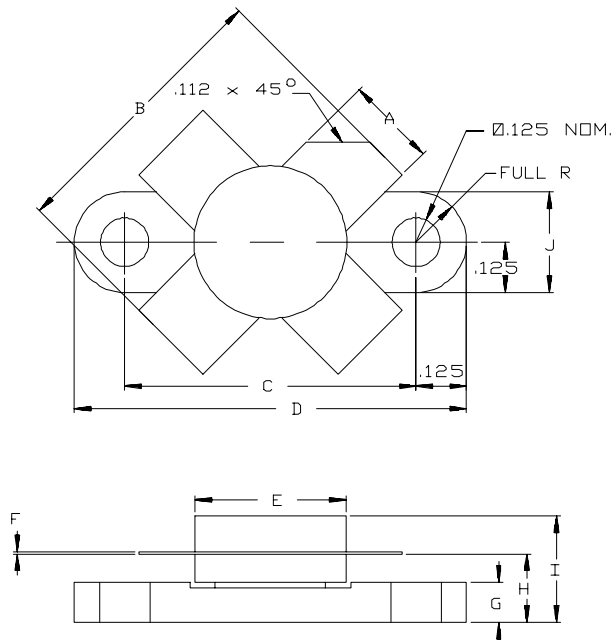


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0113



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.785/19,94	
C	.720/18,29	.730/18,54
D	.970/24,64	.980/24,89
E		.385/9,78
F	.004/0,10	.006/0,15
G	.085/2,16	.105/2,67
H	.160/4,06	.180/4,57
I		.280/7,11
J	.240/6,10	.255/6,48

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