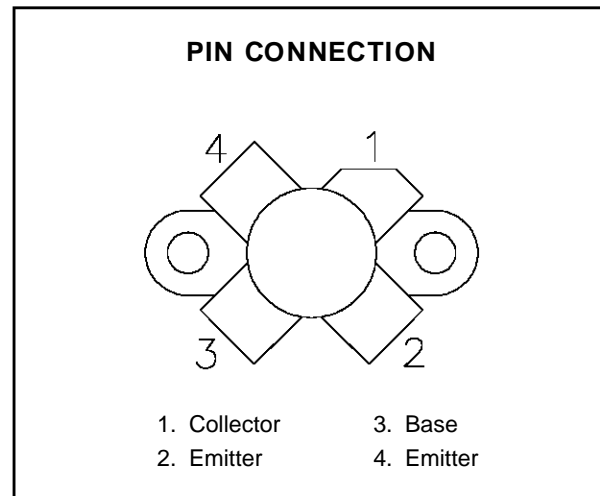
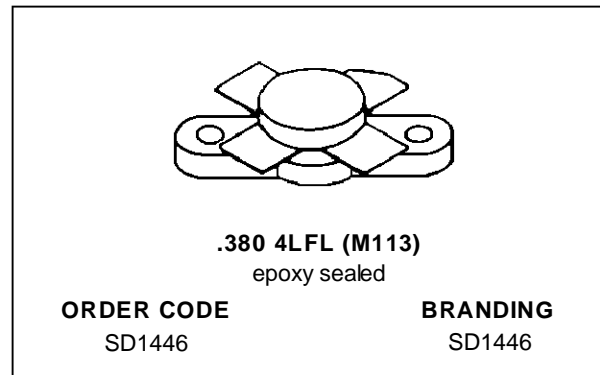


**RF & MICROWAVE TRANSISTORS  
HF/VHF APPLICATIONS**

- 50 MHz
- 12.5 VOLTS
- EFFICIENCY 55%
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 70 W MIN. WITH 10 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<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	18	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	12.0	A
P <sub>DISS</sub>	Power Dissipation	183	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	1.05	°C/W
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# SD1446

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

### STATIC

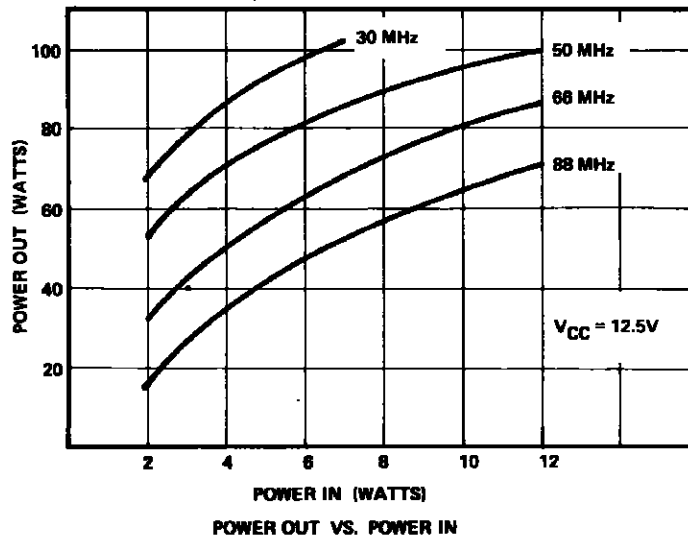
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 50mA	I <sub>E</sub> = 0mA	36	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 100mA	V <sub>BE</sub> = 0V	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50mA	I <sub>B</sub> = 0mA	18	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10mA	I <sub>C</sub> = 0mA	3.5	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 15V	I <sub>E</sub> = 0mA	—	—	10	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 5A	10	—	—	—

### DYNAMIC

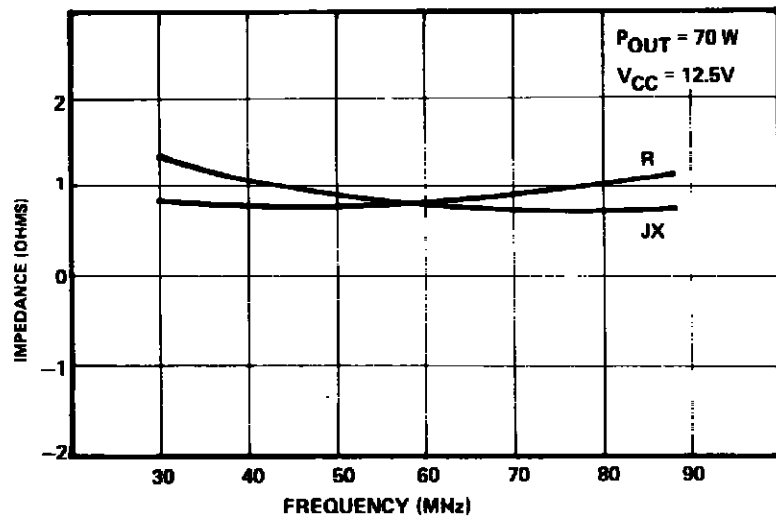
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 50 MHz	P <sub>IN</sub> = 7 W	V <sub>CE</sub> = 12.5 V	70	—	—	W
G <sub>P</sub>	f = 50 MHz	P <sub>IN</sub> = 7 W	V <sub>CE</sub> = 12.5 V	10	—	—	dB
η <sub>C</sub>	f = 50 MHz	P <sub>IN</sub> = 7 W	V <sub>CE</sub> = 12.5 V	—	55	—	%
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 12.5V		—	—	300	pF

### TYPICAL PERFORMANCE

#### POWER OUTPUT vs POWER INPUT



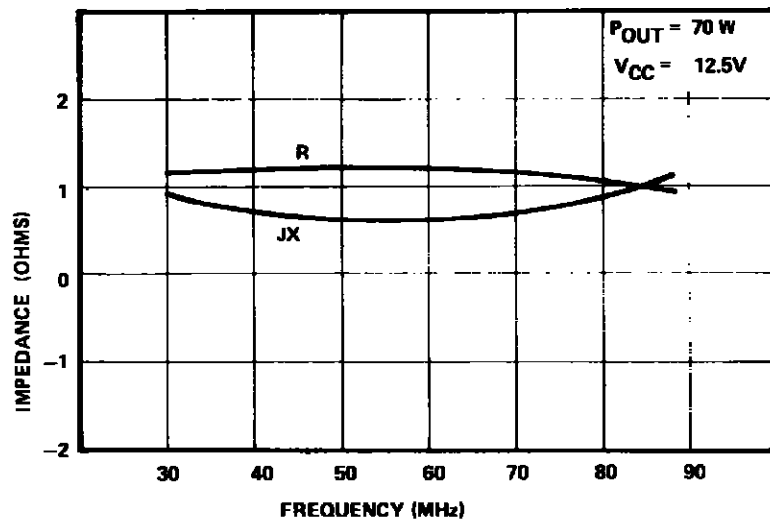
## IMPEDANCE DATA

TYPICAL INPUT  
IMPEDANCE

SERIES SOURCE IMPEDANCE

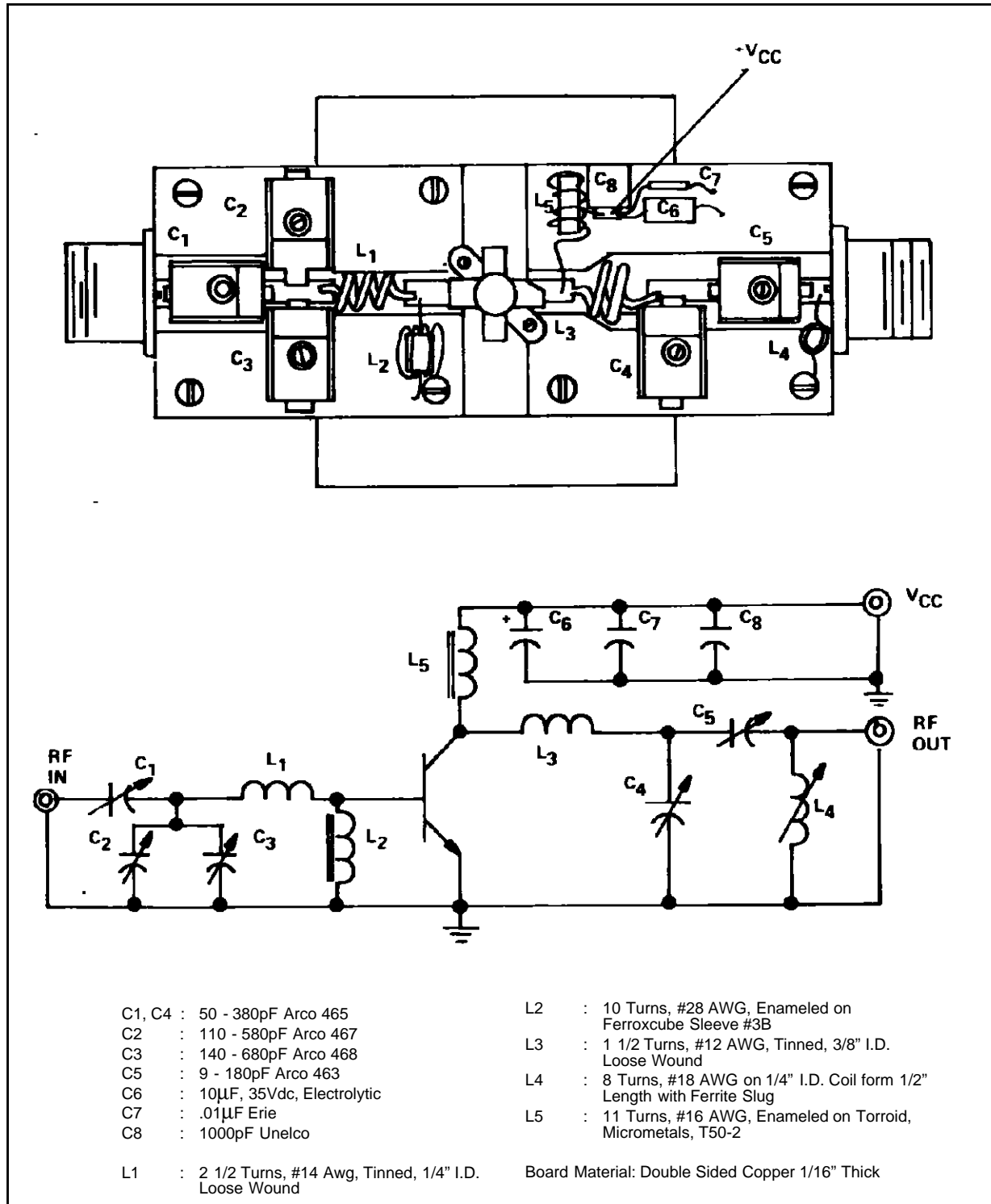
FREQ.	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
50 MHz	0.8 + j 0.9	1.2 + j 0.6

POUT = 70W  
VCE = 12.5V

TYPICAL COLLECTOR  
LOAD IMPEDANCE

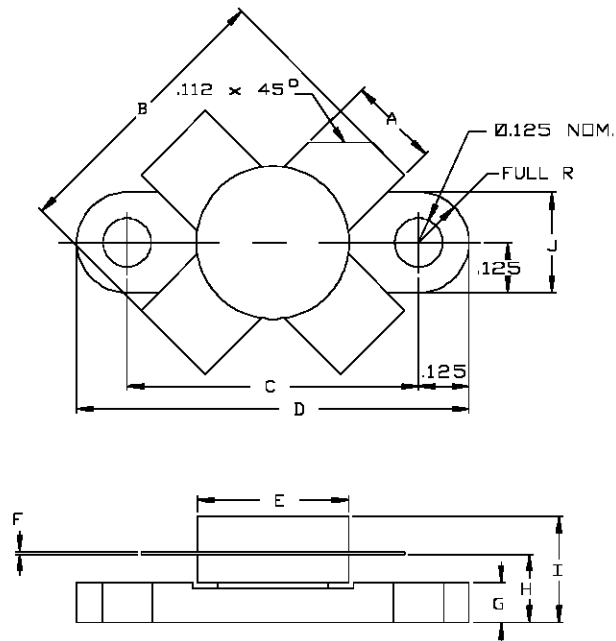
SERIES COLLECTOR LOAD IMPEDANCE

## TEST CIRCUIT



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0113



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	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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