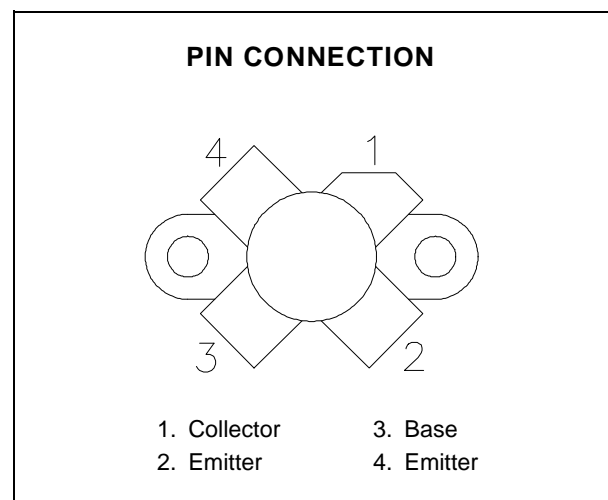
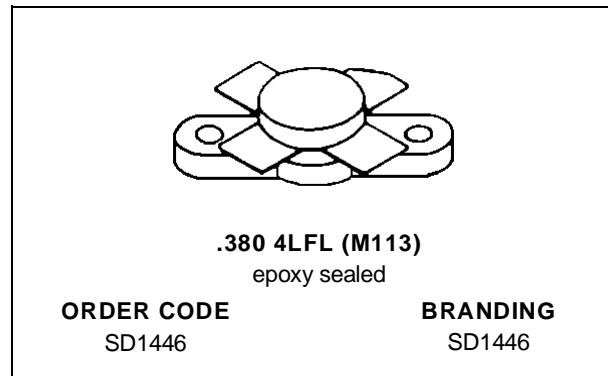


**RF & MICROWAVE TRANSISTORS
 HF/VHF APPLICATIONS**

- 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	$^{\circ}\text{C/W}$
---------------	----------------------------------	------	----------------------

SD1446

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

STATIC

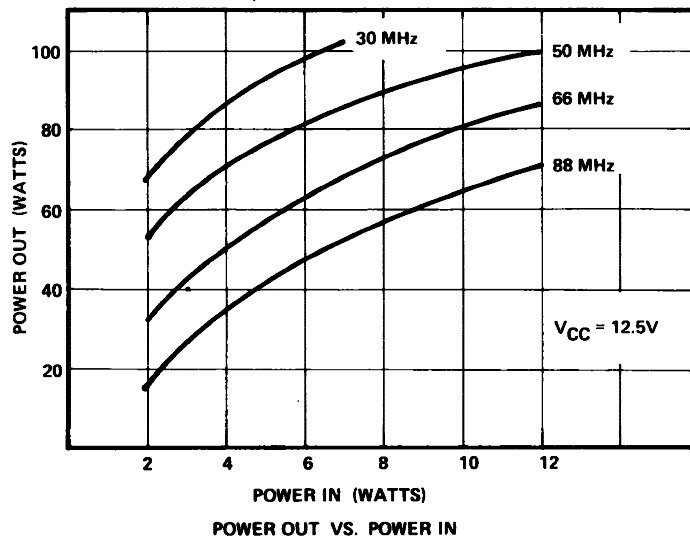
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 50mA	I _E = 0mA	36	—	—	V
BV _{CES}	I _C = 100mA	V _{BE} = 0V	36	—	—	V
BV _{CEO}	I _C = 50mA	I _B = 0mA	18	—	—	V
BV _{EBO}	I _E = 10mA	I _C = 0mA	3.5	—	—	V
I _{CES}	V _{CE} = 15V	I _E = 0mA	—	—	10	mA
h _{FE}	V _{CE} = 5V	I _C = 5A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

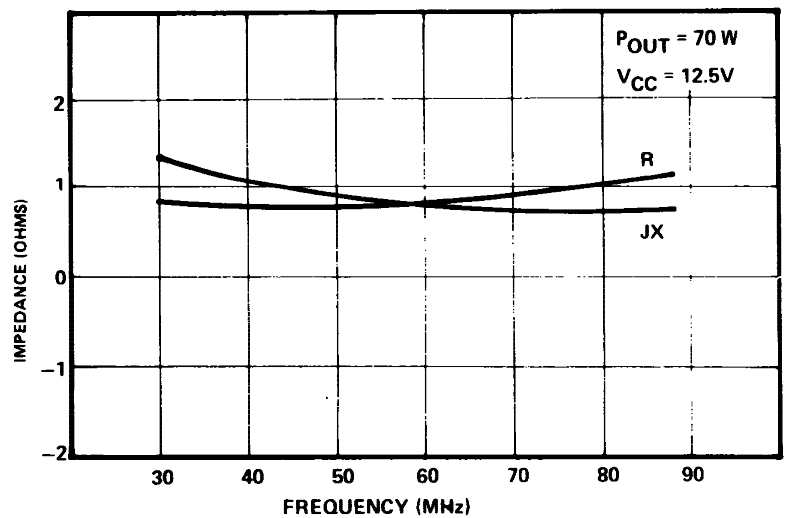
TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT



IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

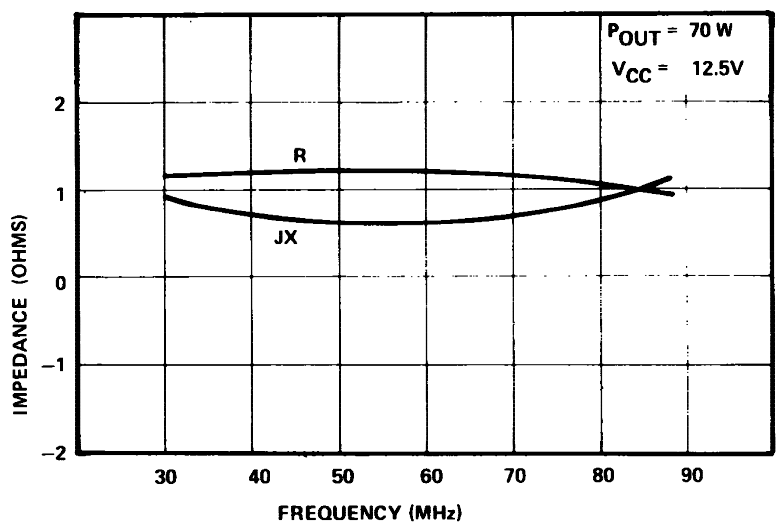


SERIES SOURCE IMPEDANCE

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

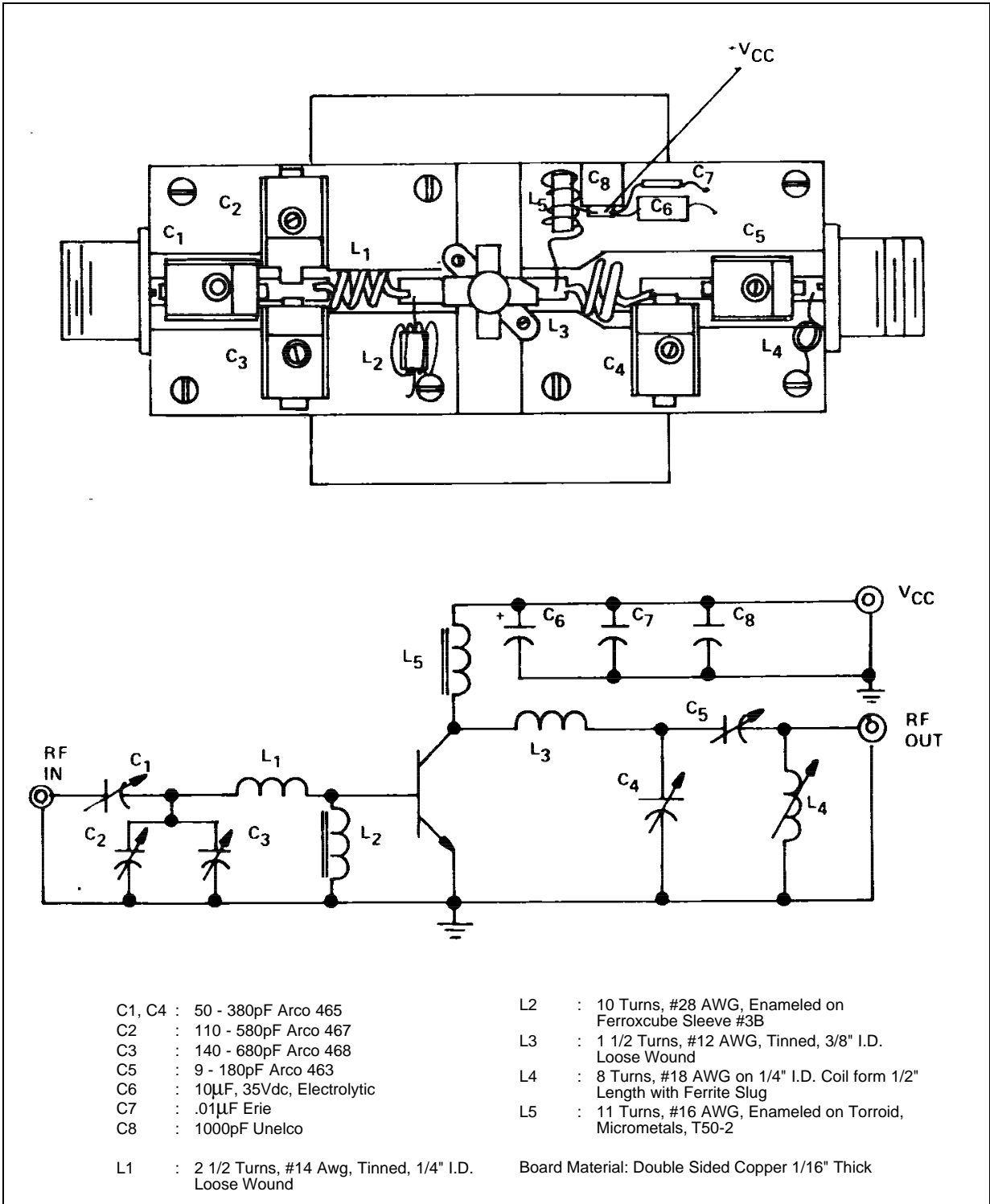
P_{OUT} = 70W
V_{CE} = 12.5V

TYPICAL COLLECTOR LOAD IMPEDANCE



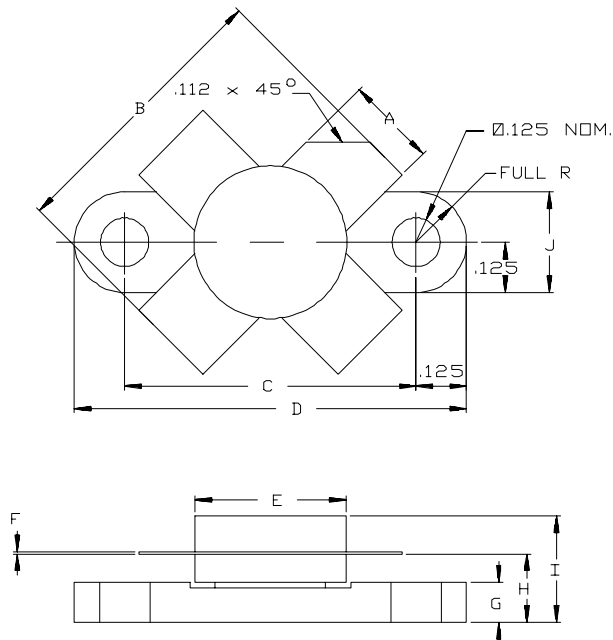
SERIES COLLECTOR LOAD IMPEDANCE

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

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
 Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
 Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A