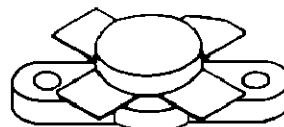


RF & MICROWAVE TRANSISTORS HF/VHF APPLICATIONS

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



.380 4LFL (M113)
epoxy sealed

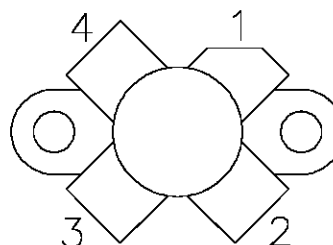
ORDER CODE
SD1446

BRANDING
SD1446

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.

PIN CONNECTION



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

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

STATIC

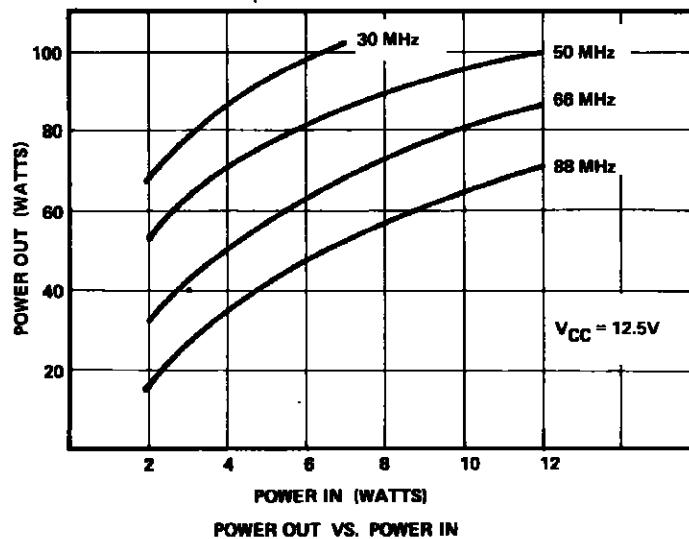
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 50\text{mA}$	$I_E = 0\text{mA}$	36	—	—	V
BV_{CES}	$I_C = 100\text{mA}$	$V_{BE} = 0\text{V}$	36	—	—	V
BV_{CEO}	$I_C = 50\text{mA}$	$I_B = 0\text{mA}$	18	—	—	V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0\text{mA}$	3.5	—	—	V
I_{CES}	$V_{CE} = 15\text{V}$	$I_E = 0\text{mA}$	—	—	10	mA
h_{FE}	$V_{CE} = 5\text{V}$	$I_C = 5\text{A}$	10	—	—	—

DYNAMIC

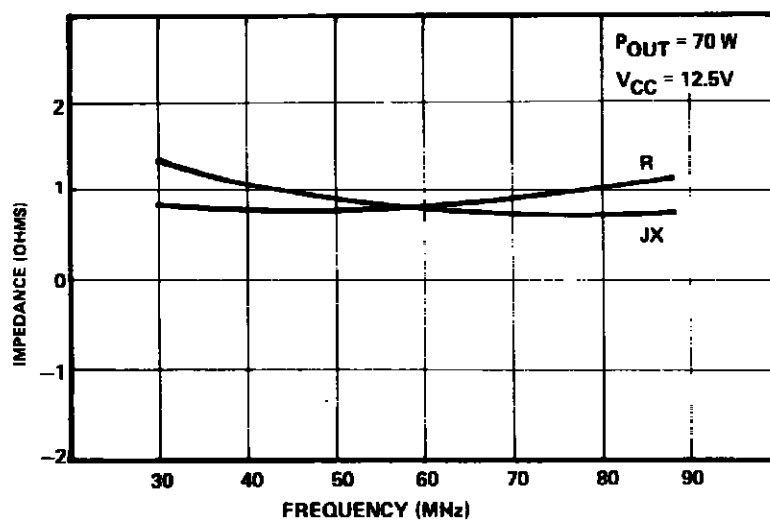
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 50\text{ MHz}$	$P_{IN} = 7\text{ W}$	$V_{CE} = 12.5\text{ V}$	70	—	—	W
G_P	$f = 50\text{ MHz}$	$P_{IN} = 7\text{ W}$	$V_{CE} = 12.5\text{ V}$	10	—	—	dB
η_C	$f = 50\text{ MHz}$	$P_{IN} = 7\text{ W}$	$V_{CE} = 12.5\text{ V}$	—	55	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 12.5\text{V}$		—	—	300	pF

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT



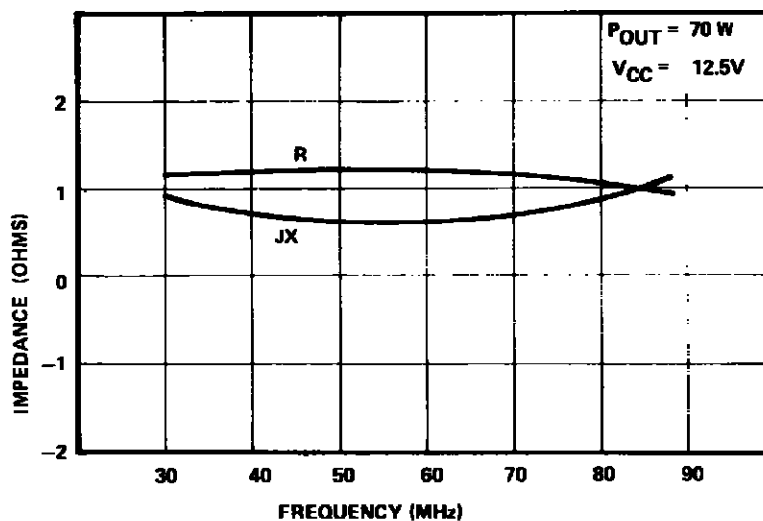
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCE

SERIES SOURCE IMPEDANCE

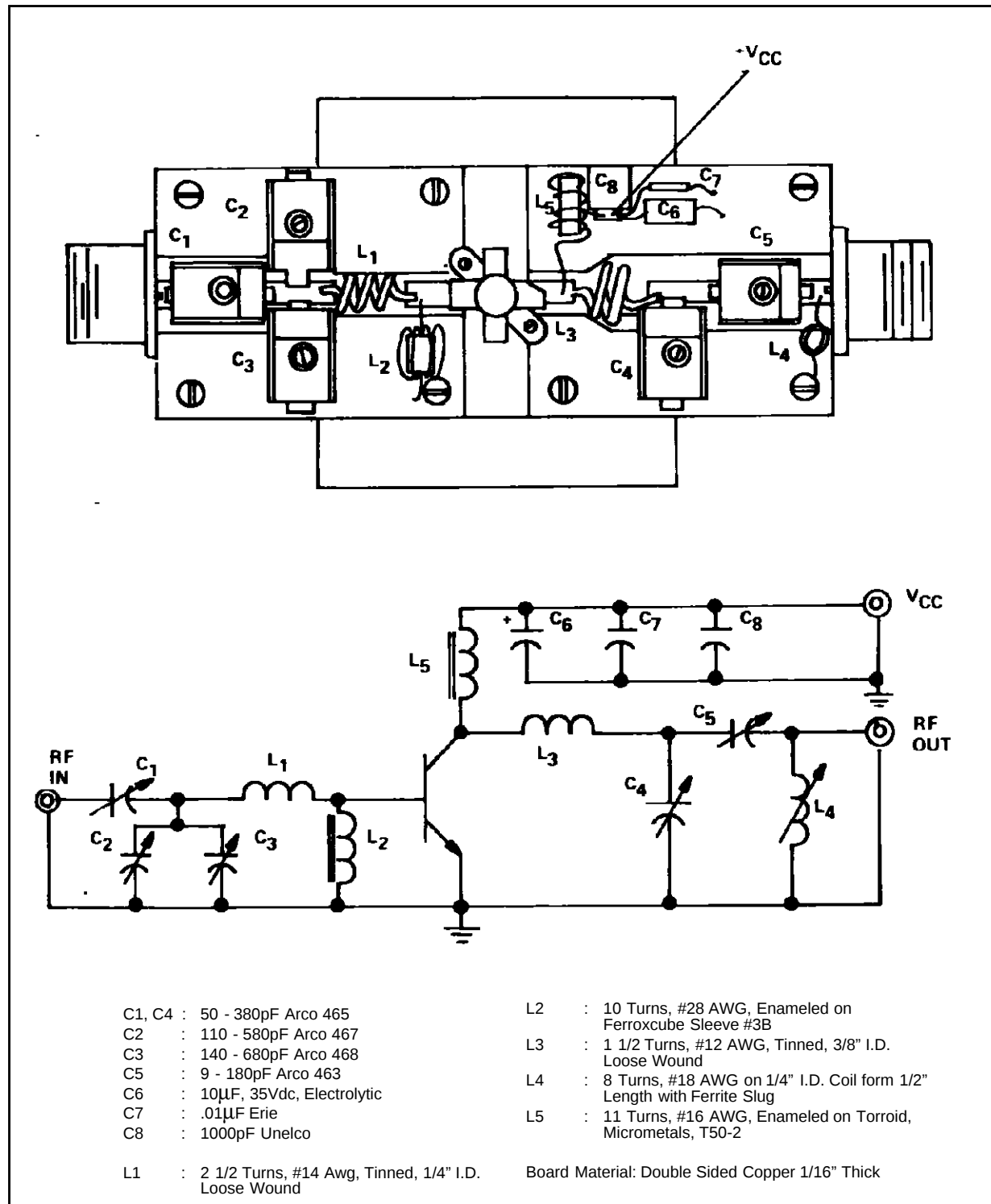
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
50 MHz	$0.8 + j\ 0.9$	$1.2 + j\ 0.6$

$P_{OUT} = 70\text{ W}$
 $V_{CE} = 12.5\text{ V}$

TYPICAL COLLECTOR
LOAD IMPEDANCE

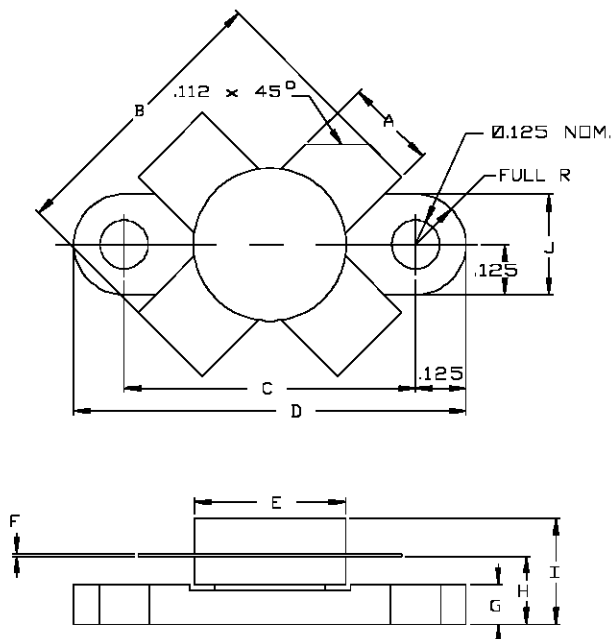
SERIES COLLECTOR LOAD IMPEDANCE

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

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