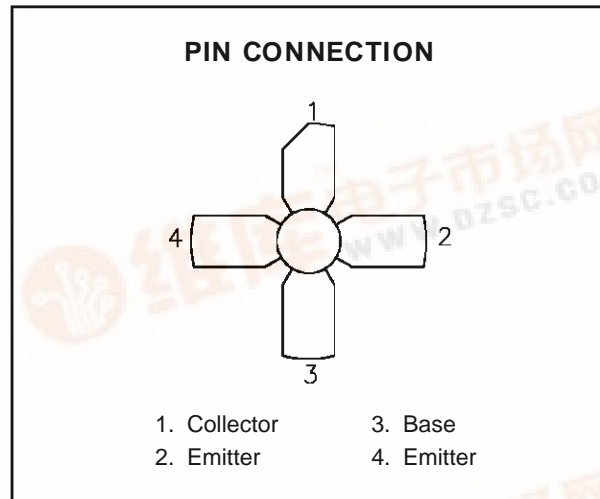
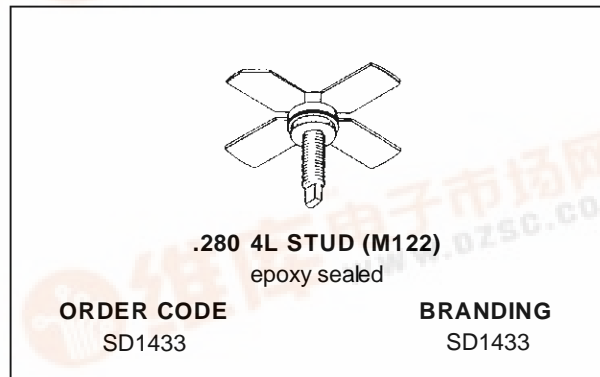




SD1433

**RF & MICROWAVE TRANSISTORS
UHF MOBILE APPLICATIONS**

- 470 MHz
- 12.5 VOLTS
- CLASS C
- EFFICIENCY 60%
- COMMON EMITTER
- P_{OUT} = 10 W MIN. WITH 8.0 dB GAIN



DESCRIPTION

The SD1433 is a Class C epitaxial silicon NPN planar transistor designed for driver applications in the 450 - 512 MHz frequency range. This device uses an emitter ballasted geometry specifically designed for optimum stable power gain, maximum efficiency and infinite VSWR.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	36	V
V _{CEO}	Collector-Emitter Voltage	16	V
V _{CES}	Collector-Emitter Voltage	36	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _c	Device Current	2.5	A
P _{DISS}	Power Dissipation	58	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	3.0	°C/W
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SD1433

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

STATIC

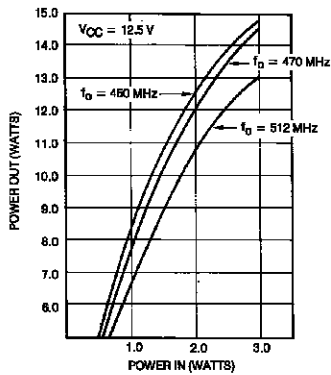
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CES}	I _C = 25mA	V _{BE} = 0V	36	—	—	V
BV _{CEO}	I _C = 20mA	I _B = 0mA	16	—	—	V
BV _{EBO}	I _E = 10mA	I _C = 0mA	4.0	—	—	V
I _{CES}	V _{CE} = 10V	I _E = 0mA	—	—	3	mA
I _{CBO}	V _{CB} = 15V	I _E = 0mA	—	—	2	mA
h _{FE}	V _{CE} = 5V	I _C = 1A	10	—	—	—

DYNAMIC

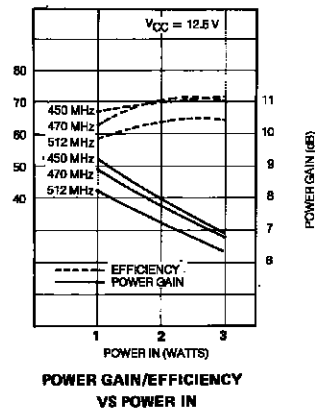
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 470 MHz	P _{IN} = 2.0 W	V _{CE} = 12.5 V	10	—	—	W
G _P	f = 470 MHz	P _{OUT} = 10 W	V _{CE} = 12.5 V	7	—	—	dB
C _{OB}	f = 1 MHz	V _{CB} = 12.5 V		—	19	—	pF

TYPICAL PERFORMANCE

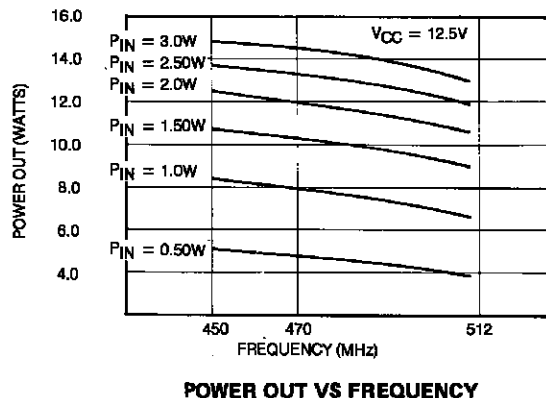
POWER OUTPUT vs POWER INPUT



POWER GAIN & EFFICIENCY vs POWER INPUT

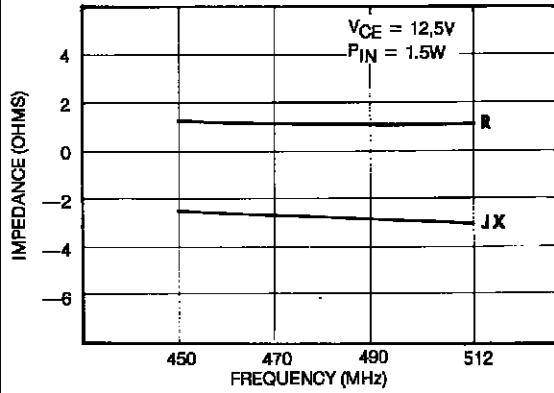


POWER OUTPUT vs FREQUENCY



IMPEDANCE DATA

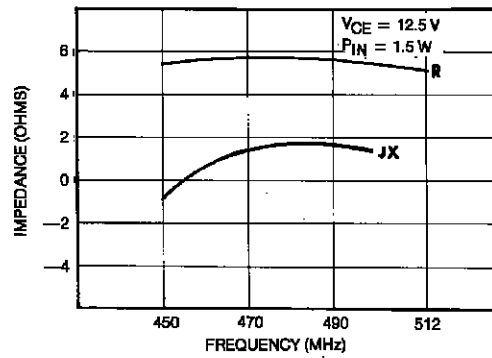
TYPICAL INPUT IMPEDANCE



SERIES SOURCE IMPEDANCE VS FREQUENCY

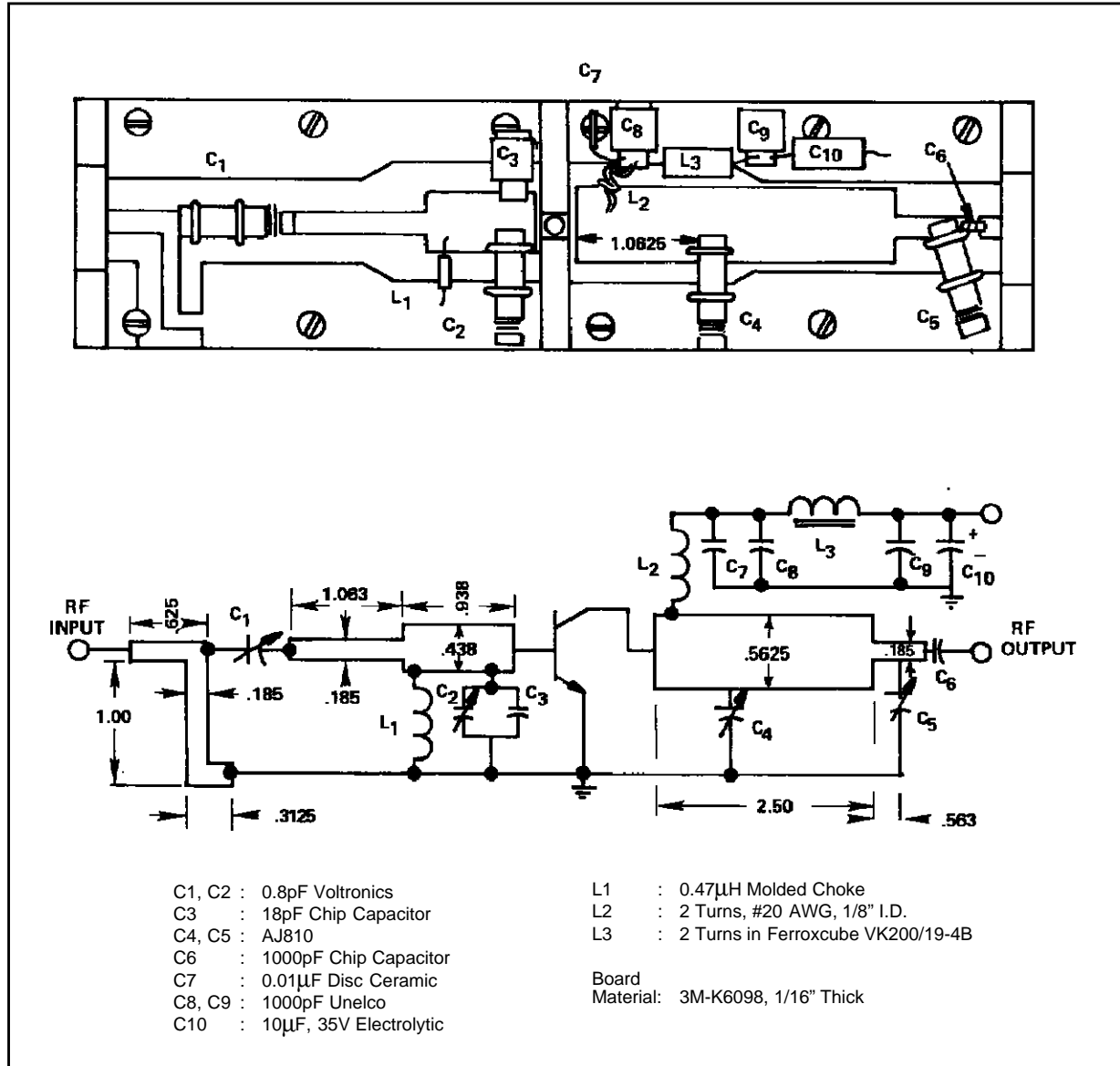
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
470 MHz	$1.5 - j 2.7$	$5.7 + j 1.5$

TYPICAL COLLECTOR LOAD IMPEDANCE



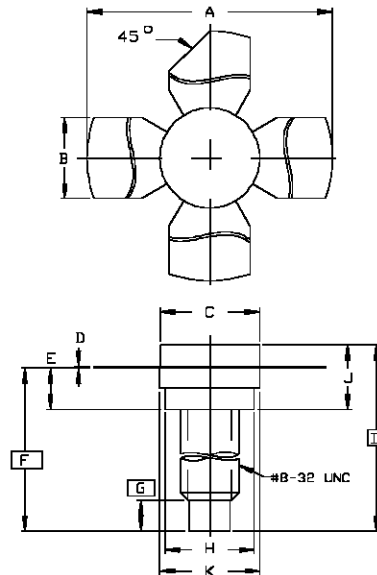
SERIES COLLECTOR LOAD IMPEDANCE VS FREQUENCY

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0122



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	1.010/25,65	1.055/26,80
B	.220/5,59	.230/5,84
C	.270/6,86	.285/7,24
D	.003/0,08	.007/0,18
E	.117/2,97	.137/3,48
F	.572/14,53	
G	.130/3,30	
H	.245/6,22	.255/6,48
I	.640/16,26	
J	.175/4,45	.217/5,51
K	.275/6,99	.285/7,24

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