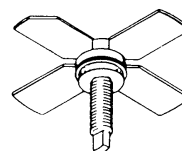


RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

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



.280 4L STUD (M122)
epoxy sealed

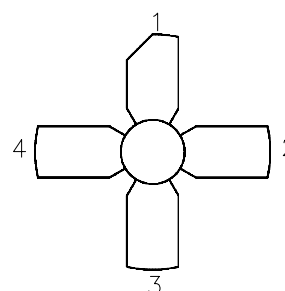
ORDER CODE
SD1433

BRANDING
SD1433

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.

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	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	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	3.0	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

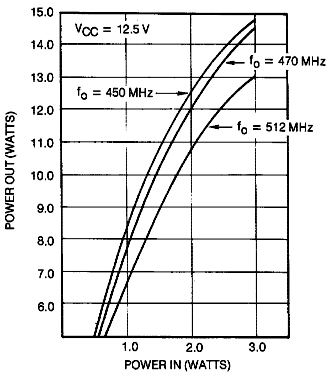
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CES}	I _C = 25mA	V _{BE} = 0V	36	—	—	V
BV _{CEO}	I _C = 20mA	I _B = 0mA	16	—	—	V
BV _{EBO}	I _E = 10mA	I _C = 0mA	4.0	—	—	V
I _{CES}	V _{CE} = 10V	I _E = 0mA	—	—	3	mA
I _{CBO}	V _{CB} = 15V	I _E = 0mA	—	—	2	mA
h _{FE}	V _{CE} = 5V	I _C = 1A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

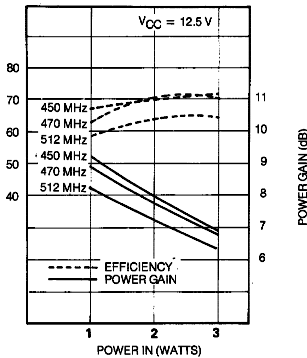
TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT



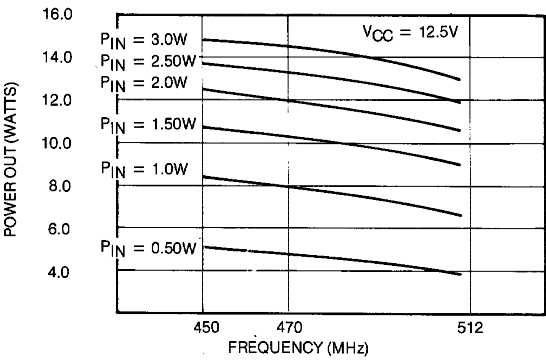
POWER OUT VS POWER IN

POWER GAIN & EFFICIENCY vs POWER INPUT



POWER GAIN/EFFICIENCY vs POWER IN

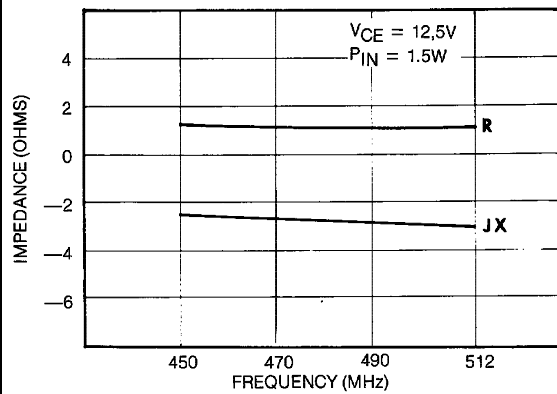
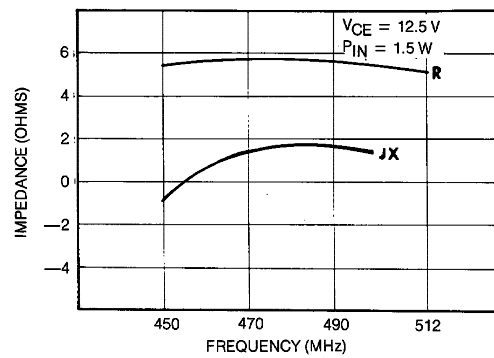
POWER OUTPUT vs FREQUENCY



POWER OUT VS FREQUENCY

IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

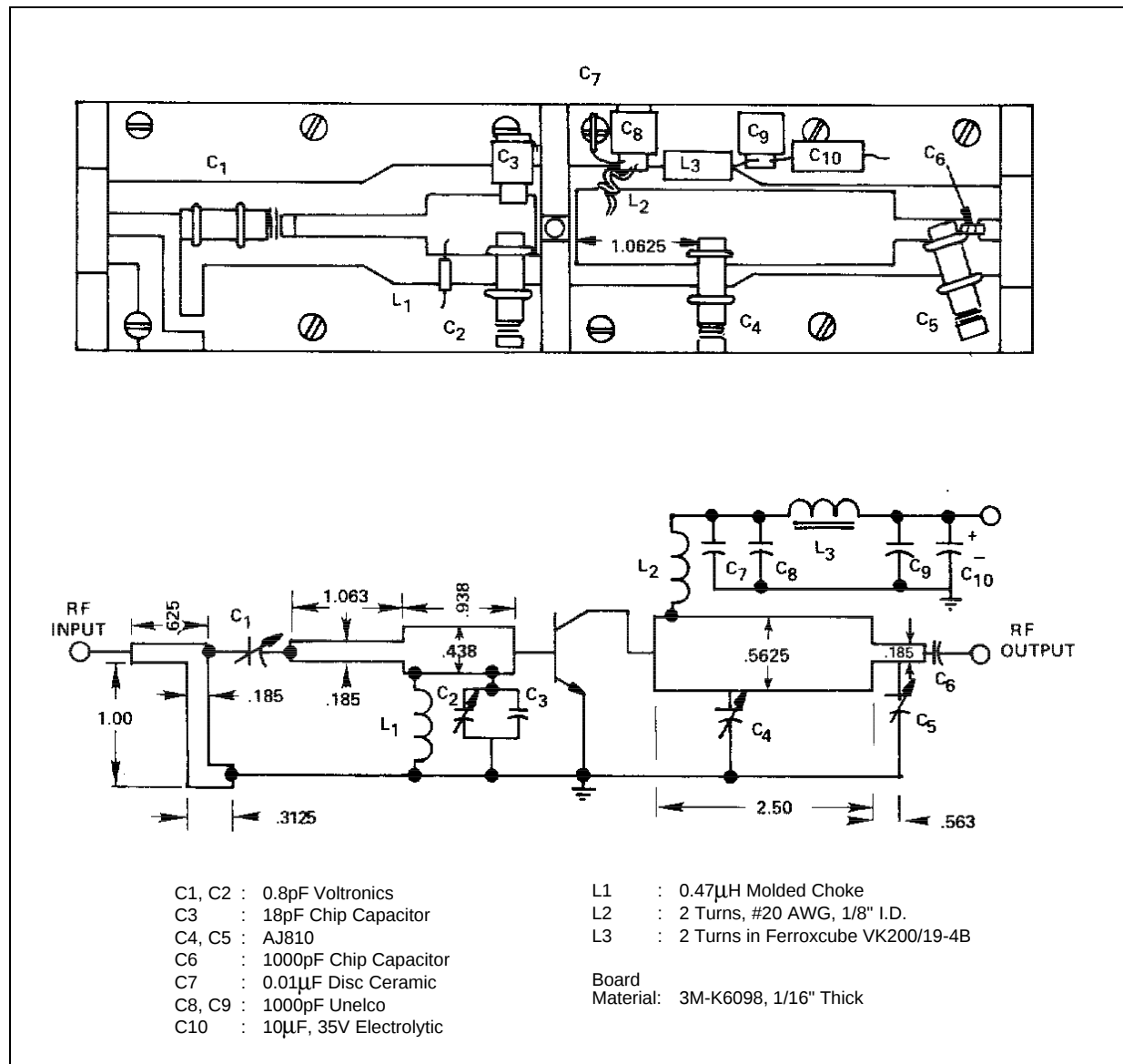
TYPICAL COLLECTOR
LOAD IMPEDANCE

SERIES COLLECTOR LOAD IMPEDANCE VS FREQUENCY

SERIES SOURCE IMPEDANCE VS FREQUENCY

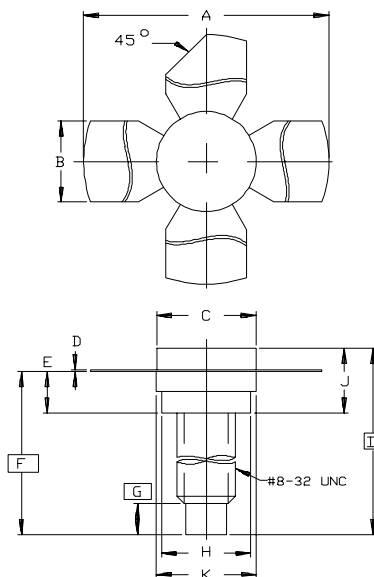
FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
470 MHz	$1.5 - j 2.7$	$5.7 + j 1.5$

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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