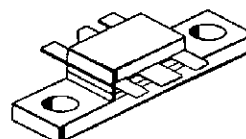


RF & MICROWAVE TRANSISTORS 800-900 MHz APPLICATIONS

- 836 MHz
- 12.5 VOLTS
- COMMON BASE
- $P_{OUT} = 45 \text{ W MIN. WITH } 4.7 \text{ dB GAIN}$



.230 6LFL (M142)
epoxy sealed

ORDER CODE

SD1414

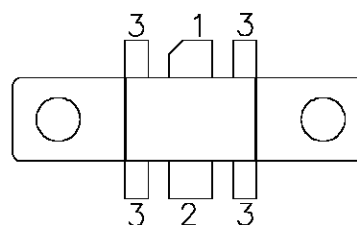
BRANDING

SD1414

DESCRIPTION

The SD1414 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed for amplifier applications in the 806 - 866 MHz frequency range. Internal input matching and common base configuration assure optimum gain and efficiency across the entire frequency band. The SD1414 withstands infinite VSWR at rated power output.

PIN CONNECTION



1. Collector

3. Base

2. 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_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	9.0	A
P_{DISS}	Power Dissipation	150	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	1.2	$^{\circ}\text{C/W}$
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SD1414

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

STATIC

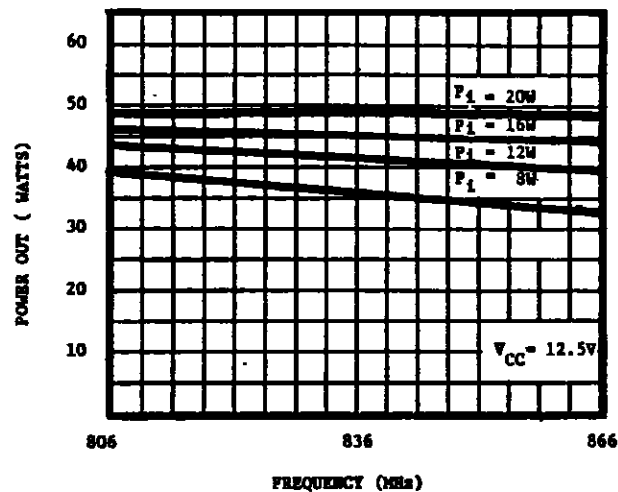
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_{\text{C}} = 50\text{mA}$	$V_{\text{BE}} = 0\text{V}$	36	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{B}} = 0\text{mA}$	18	—	—	V
BV_{EBO}	$I_{\text{E}} = 10\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CBO}	$V_{\text{CB}} = 15\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	5	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 1\text{A}$	5	—	200	—

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 836\text{ MHz}$	$P_{\text{IN}} = 15\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	45	—	—	W
G_{P}	$f = 836\text{ MHz}$	$P_{\text{IN}} = 15\text{ W}$	$V_{\text{CE}} = 12.5\text{ V}$	4.7	—	—	dB
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 12.5\text{ V}$		—	80	—	pF

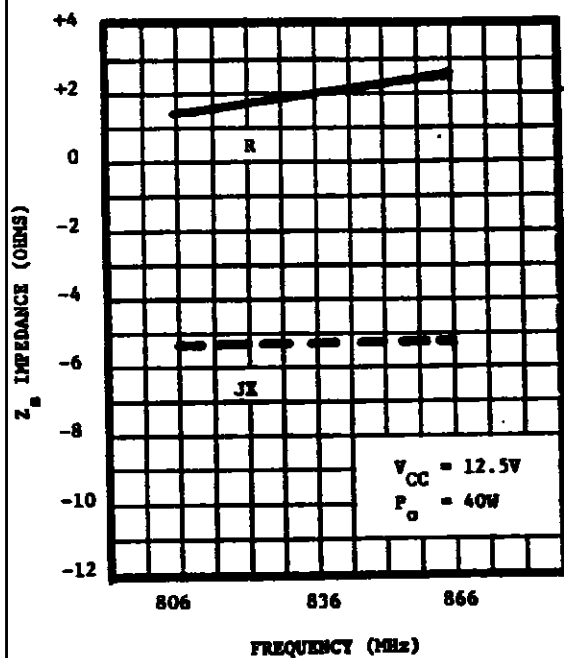
TYPICAL PERFORMANCE

POWER OUTPUT vs FREQUENCY

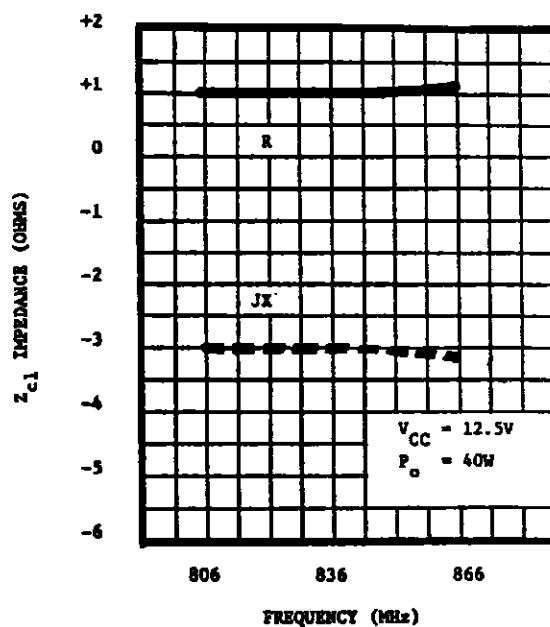


IMPEDANCE DATA

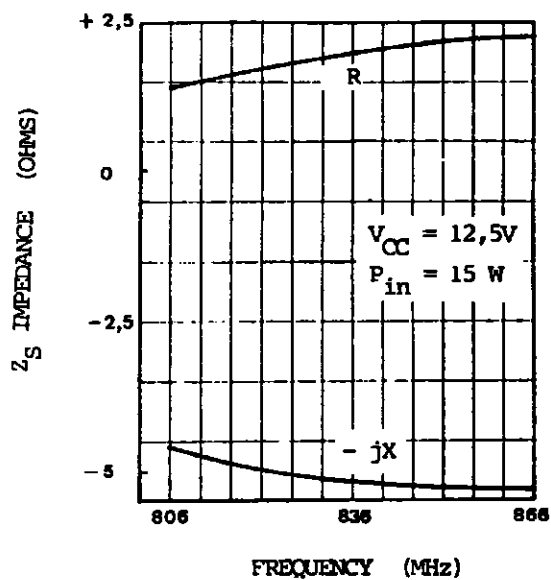
TYPICAL INPUT IMPEDANCE



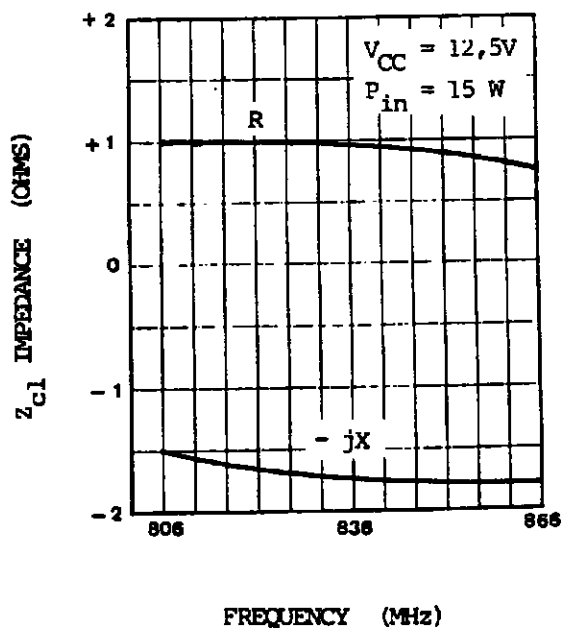
TYPICAL COLLECTOR LOAD IMPEDANCE



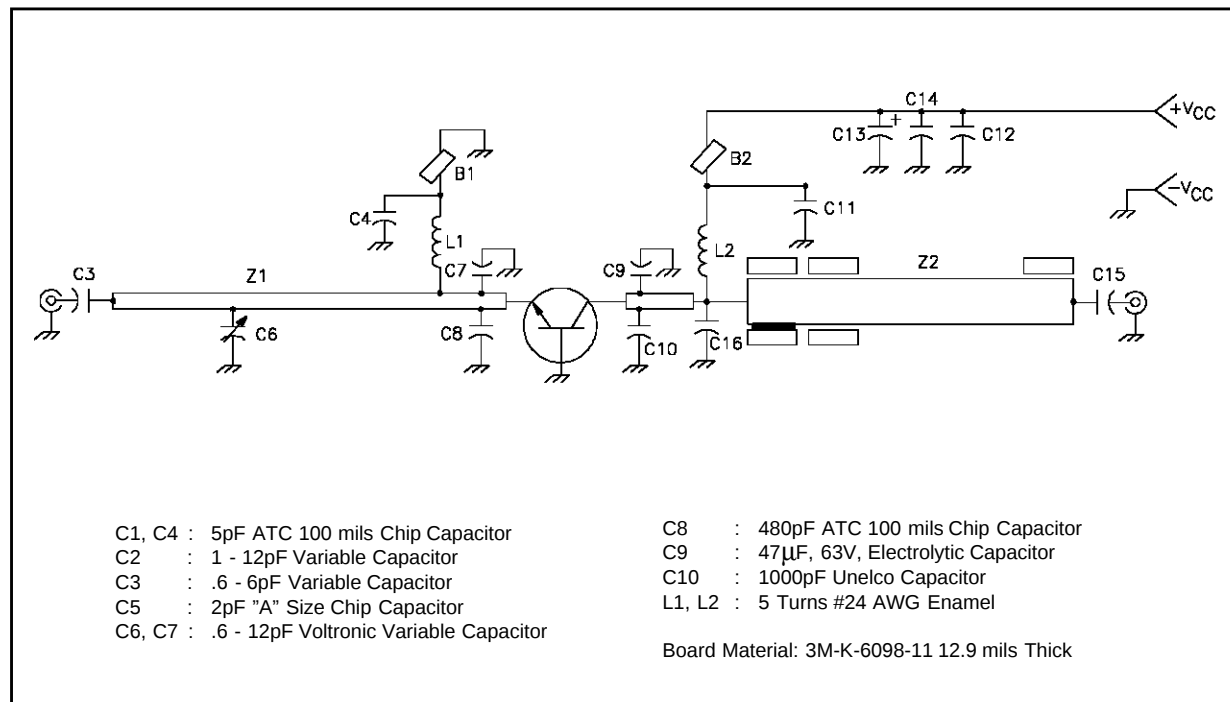
TYPICAL INPUT IMPEDANCE



TYPICAL COLLECTOR LOAD IMPEDANCE

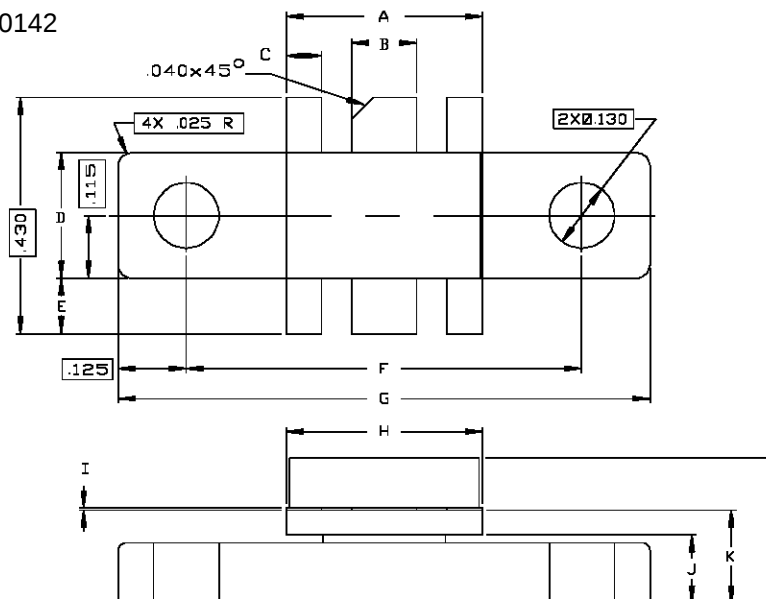


TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0142



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.355/9,02	.365/9,27	K	.160/4,06	.180/4,57
B	.115/2,92	.125/3,18	L	.230/5,84	.250/6,50
C	.075/1,91	.085/2,16			
D	.225/5,72	.235/5,97			
E	.090/2,29	.110/2,79			
F	.720/18,29	.730/18,54			
G	.970/24,64	.980/24,89			
H	.355/9,02	.365/9,27			
I	.004/0,10	.006/0,15			
J	.120/3,05	.130/3,30			

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