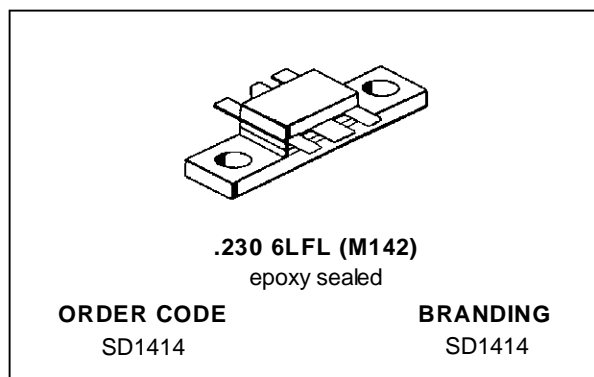


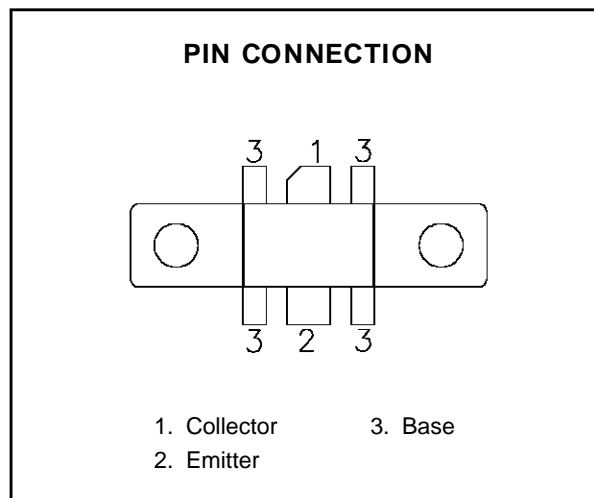
## RF & MICROWAVE TRANSISTORS 800-900 MHz APPLICATIONS

- 836 MHz
- 12.5 VOLTS
- COMMON BASE
- P<sub>OUT</sub> = 45 W MIN. WITH 4.7 dB GAIN



### 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.



### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	36	V
V <sub>CEO</sub>	Collector-Emitter Voltage	18	V
V <sub>CES</sub>	Collector-Emitter Voltage	36	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>c</sub>	Device Current	9.0	A
P <sub>DISS</sub>	Power Dissipation	150	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	1.2	°C/W
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# SD1414

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

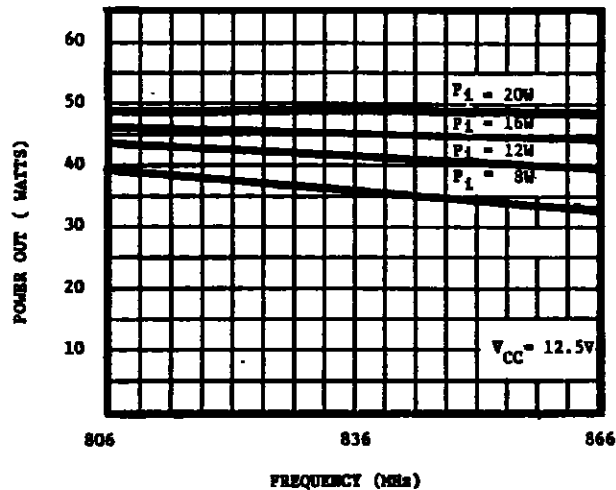
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CES</sub>	I <sub>C</sub> = 50mA	V <sub>BE</sub> = 0V	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50mA	I <sub>B</sub> = 0mA	18	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10mA	I <sub>C</sub> = 0mA	4.0	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 15V	I <sub>E</sub> = 0mA	—	—	5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 1A	5	—	200	—

### DYNAMIC

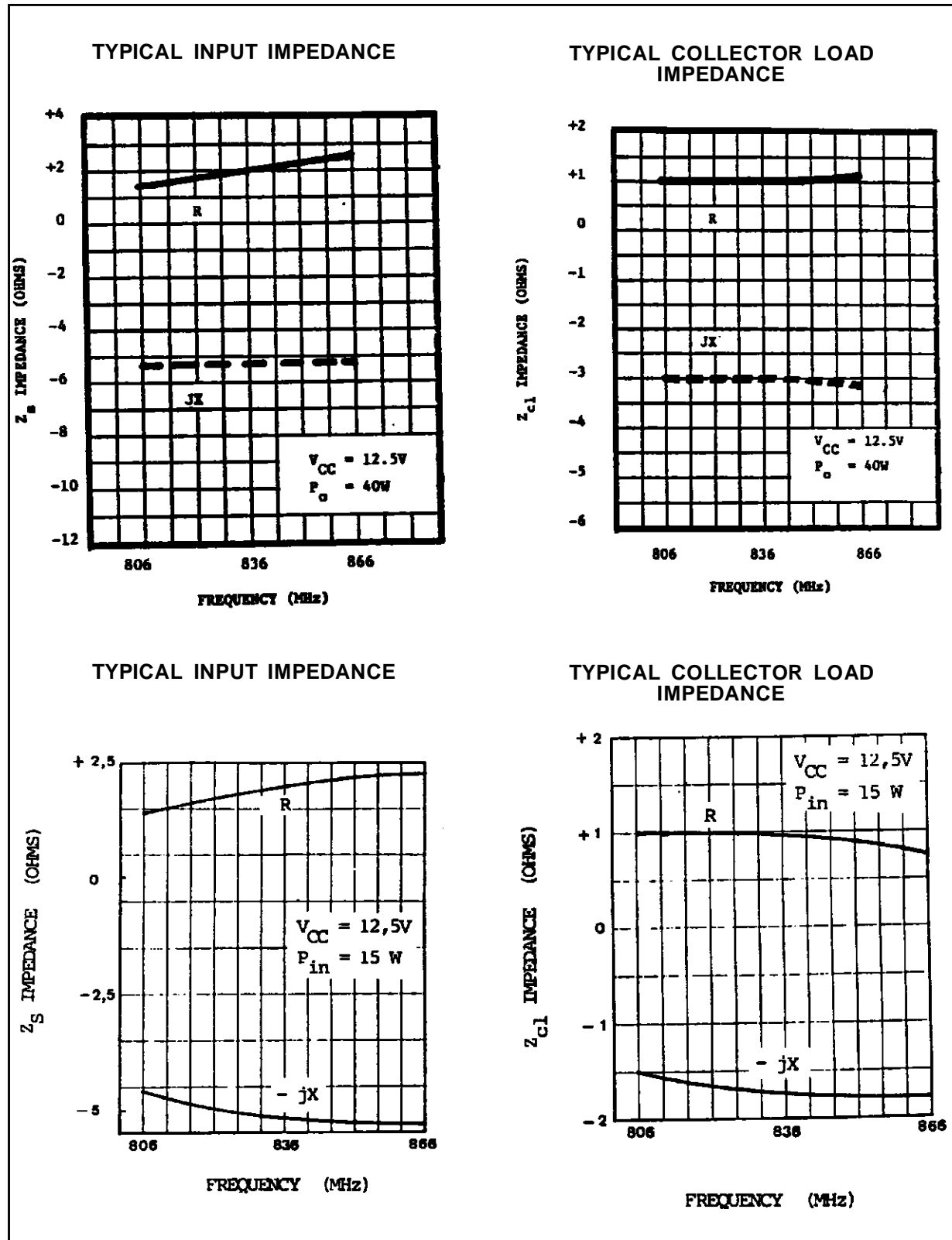
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 836 MHz	P <sub>IN</sub> = 15 W	V <sub>CE</sub> = 12.5 V	45	—	—	W
G <sub>P</sub>	f = 836 MHz	P <sub>IN</sub> = 15 W	V <sub>CE</sub> = 12.5 V	4.7	—	—	dB
COB	f = 1 MHz	V <sub>CB</sub> = 12.5 V		—	80	—	pF

### TYPICAL PERFORMANCE

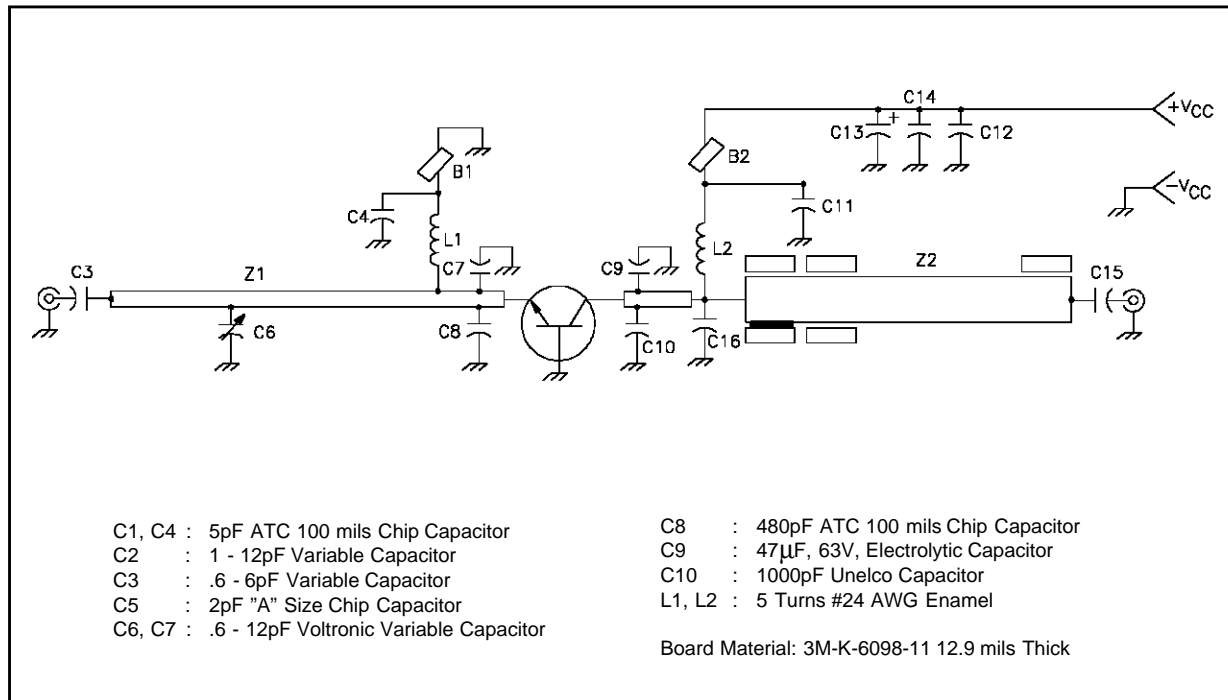
POWER OUTPUT vs FREQUENCY



## IMPEDANCE DATA

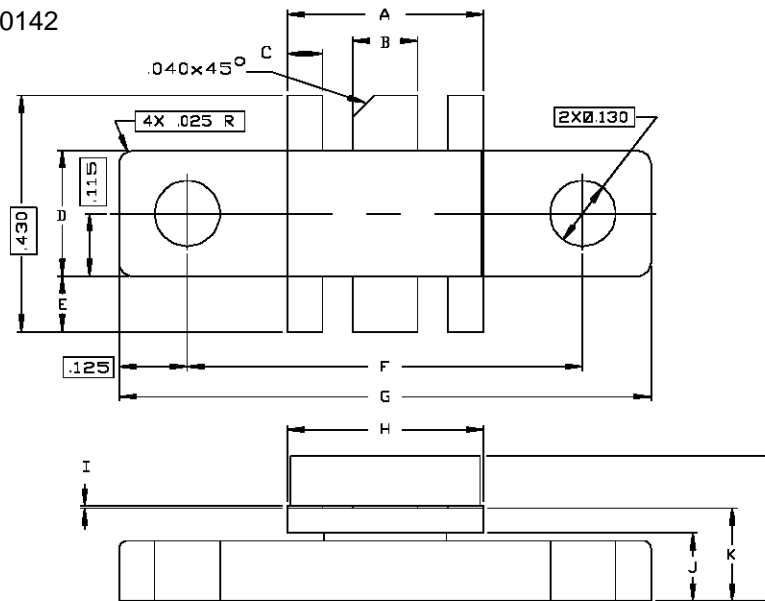


## TEST CIRCUIT



## 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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