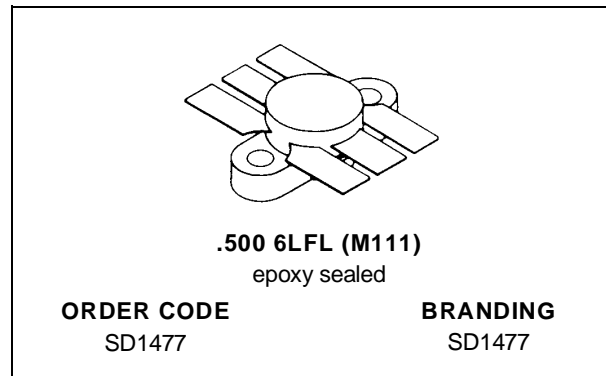
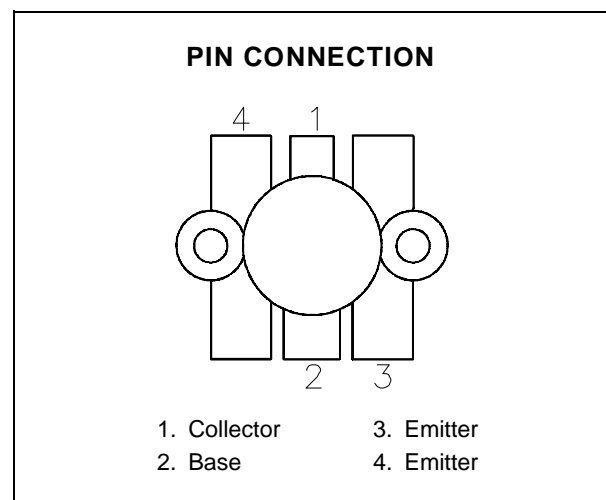


**RF & MICROWAVE TRANSISTORS
VHF MOBILE APPLICATIONS**

- 175 MHz
- 12.5 VOLTS
- COMMON EMITTER
- $P_{OUT} = 100 \text{ W MIN. WITH } 6.0 \text{ dB GAIN}$


DESCRIPTION

The SD1477 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF FM communications. This device utilizes diffused emitter resistors to withstand extremely high VSWR under rated operating conditions, and is internally input matched to optimize power gain and efficiency over the 136 - 175 MHz band.


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	20	A
P_{DISS}	Power Dissipation	270	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	0.65	$^{\circ}\text{C/W}$
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SD1477

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

STATIC

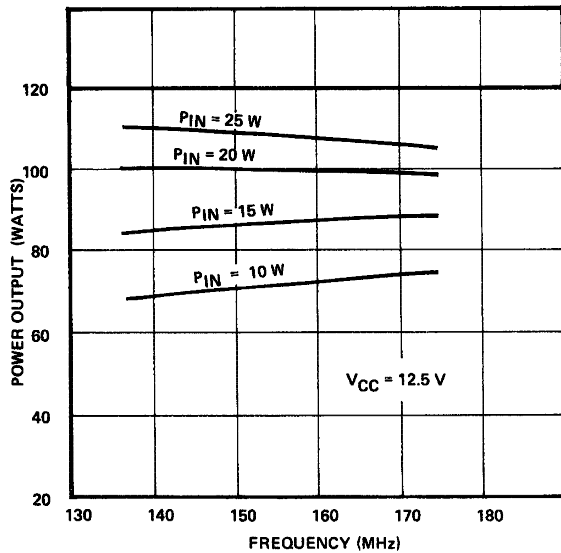
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 50mA	I _E = 0mA	36	—	—	V
BV _{CES}	I _C = 100mA	V _{BE} = 0V	36	—	—	V
BV _{CEO}	I _C = 100mA	I _B = 0mA	18	—	—	V
BV _{EBO}	I _E = 10mA	I _C = 0mA	4.0	—	—	V
I _{CES}	V _{CE} = 15V	I _E = 0mA	—	—	15	mA
h _{FE}	V _{CE} = 5V	I _C = 5A	10	—	—	—

DYNAMIC

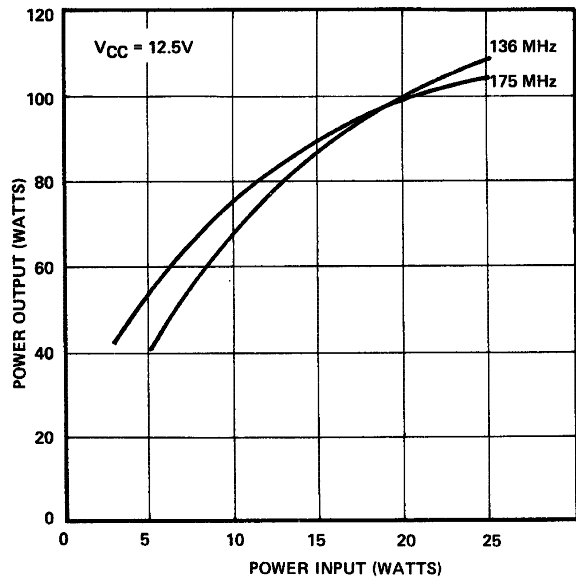
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P _{OUT}	f = 175 MHz	P _{IN} = 25 W	V _{CC} = 12.5 V	100	—	—	W
G _P	f = 175 MHz	P _{IN} = 25 W	V _{CC} = 12.5 V	6.0	—	—	dB
C _{OB}	f = 1 MHz	V _{CB} = 12.5 V		—	350	—	pF

TYPICAL PERFORMANCE

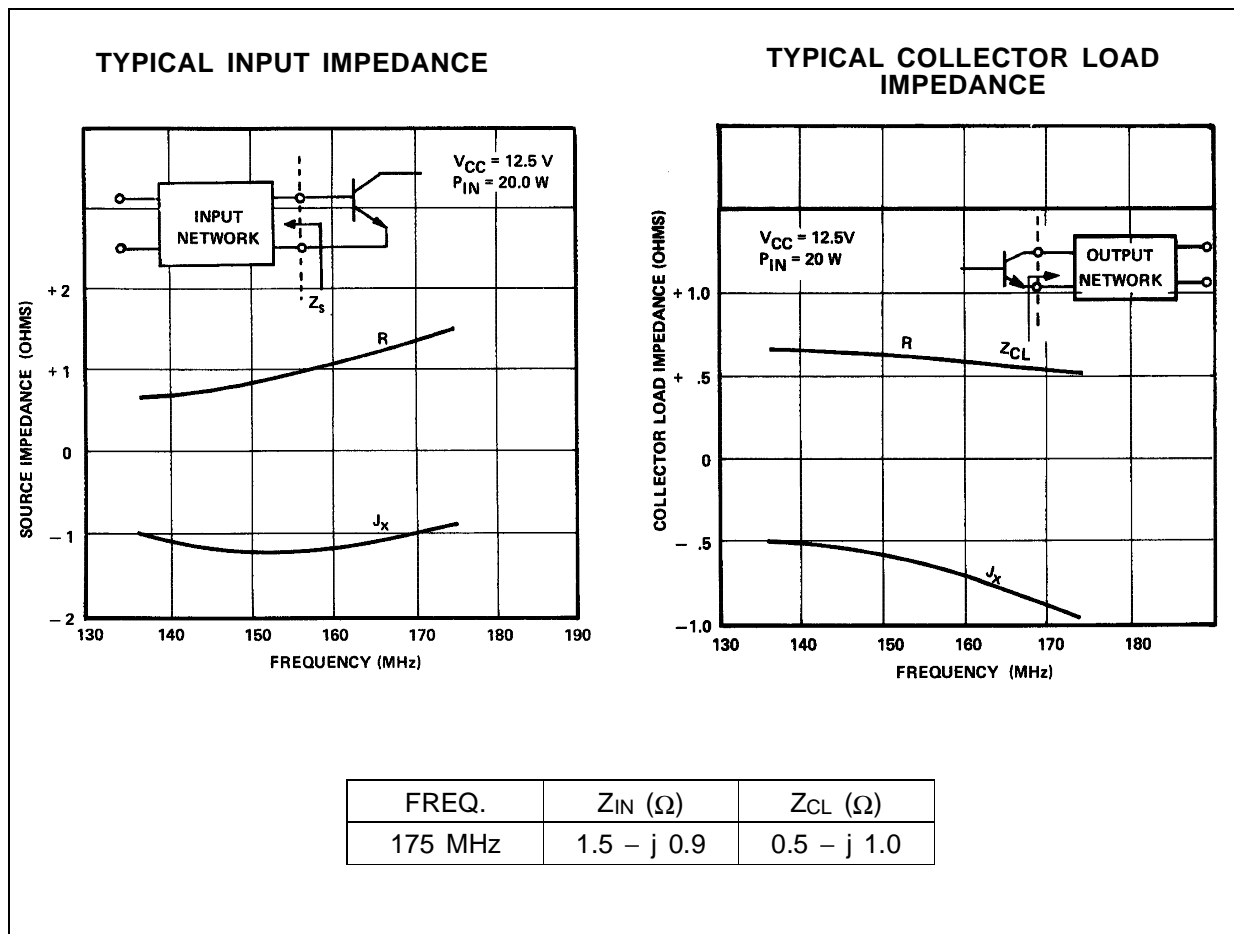
POWER OUTPUT vs FREQUENCY



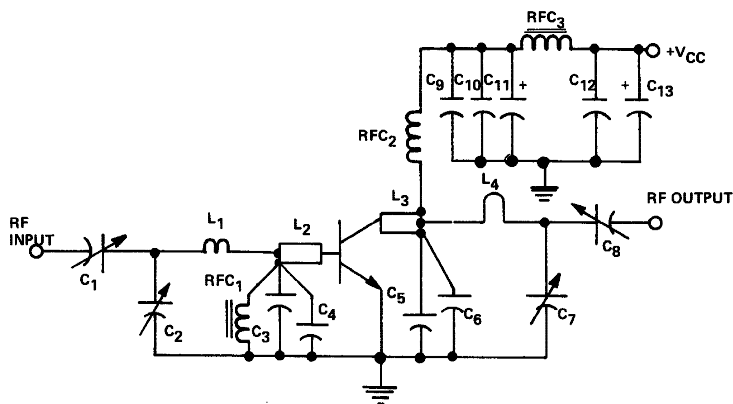
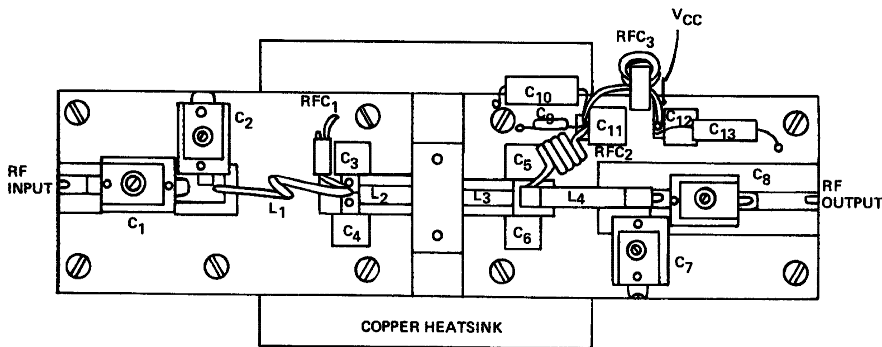
POWER OUTPUT vs POWER INPUT



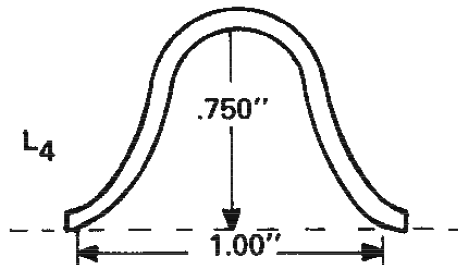
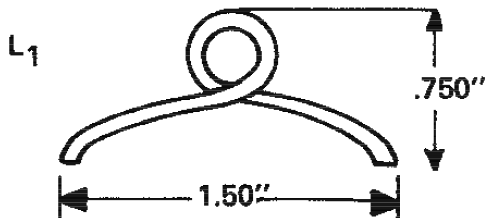
IMPEDANCE DATA



TEST CIRCUIT

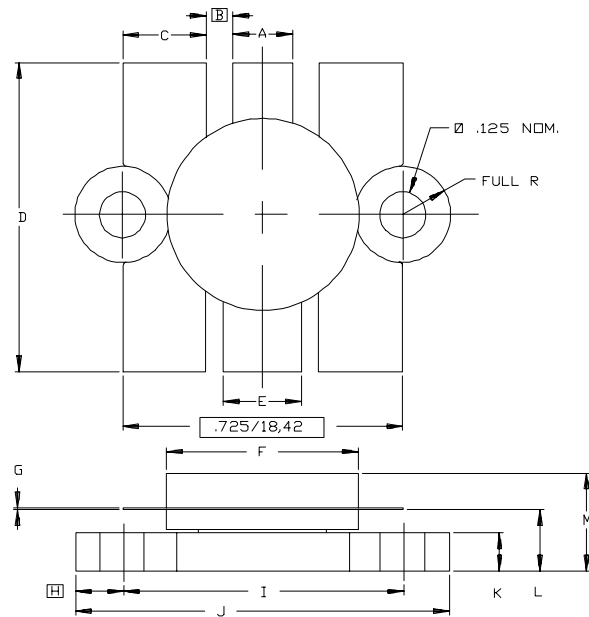


- | | | | |
|---------|----------------------------|--------|---|
| C1, C2 | : Arco 462 5 - 80pF | L1 | : 1 Turn, #12, 1/4" I.D. |
| C3, C4 | : Unelco 100pF, 350V | L2, L3 | : 1/2" 50Ω Stripline (.180" Wide) |
| C5, C6 | : Unelco 120pF, 350V | L4 | : 1/8" Thick Copper Strap 1/4" Wide |
| C7, C8 | : Arco 463 9 - 180pF | RFC1 | : 1 1/2 Turns on Ferroxcube VK200/19-B |
| C9, C12 | : Unelco 1000pF, 350V | RFC2 | : 4 Turn #16 Enamel, 3/8" I.D., 3/8" Long |
| C10 | : Erie .15μF, 200V Red Cap | RFC3 | : 4 Turns #16 Enamel on T50-2 Torroid |
| C11 | : 25μF, 25V Electrolytic | | |
| C13 | : 10μF, 25V Electrolytic | | |
- Board
Material: 3M-K6098, 1/16" Thick



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0111



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.150/3,43	.160/4,06	K	.095/2,41	.105/2,67
B	.045/1,14		L	.150/3,81	.170/4,32
C	.210/5,33	.220/5,59	M		.280/7,11
D	.835/21,21	.865/21,97			
E	.200/5,08	.210/5,33			
F	.490/12,45	.510/12,95			
G	.003/0,08	.007/0,18			
H	.125/3,18				
I	.720/18,29	.730/18,54			
J	.970/24,64	.980/24,89			

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