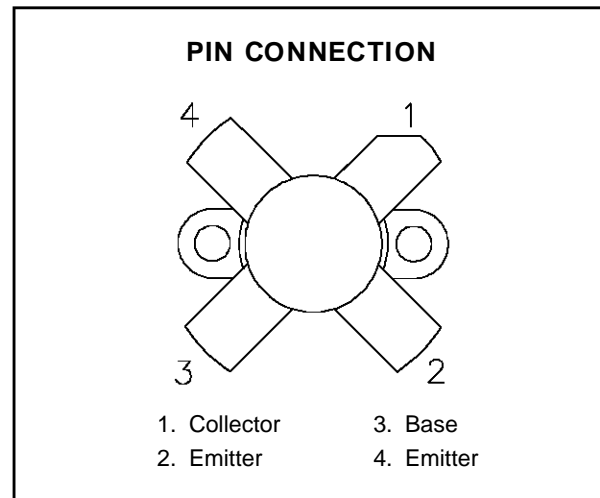
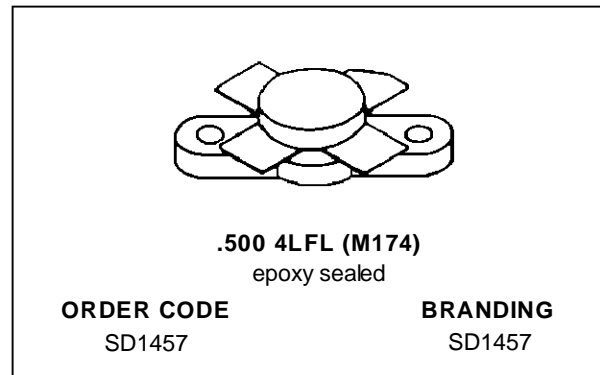


**RF & MICROWAVE TRANSISTORS  
FM BROADCAST APPLICATIONS**

- 108 MHz
- 28 VOLTS
- EFFICIENCY 75%
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 75 W MIN. WITH 10.0 dB GAIN


**DESCRIPTION**

The SD1457 is a 28 V gold metallized epitaxial silicon NPN planar transistor designed for FM VHF broadcast transmitters.

This device utilizes diffused emitter resistors to achieve infinite VSWR at rated operating conditions.

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

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>CES</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>c</sub>	Device Current	10	A
P <sub>DISS</sub>	Power Dissipation	100	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	1.5	°C/W
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# SD1457

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

### STATIC

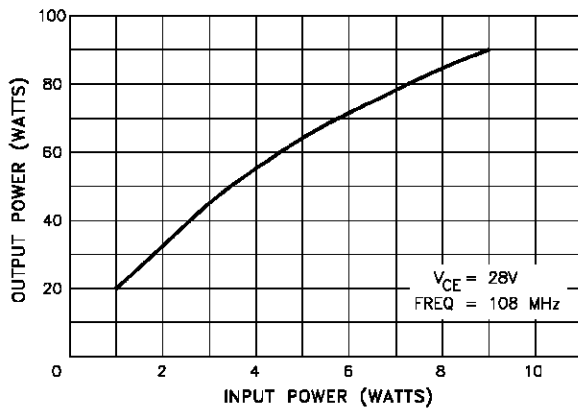
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 50mA	I <sub>E</sub> = 0mA	65	—	—	V
BV <sub>CER</sub>	I <sub>C</sub> = 50mA	R <sub>BE</sub> = 10Ω	60	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50mA	I <sub>B</sub> = 0mA	30	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 10mA	I <sub>C</sub> = 0mA	4.0	—	—	V
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 1A	20	—	150	—

### DYNAMIC

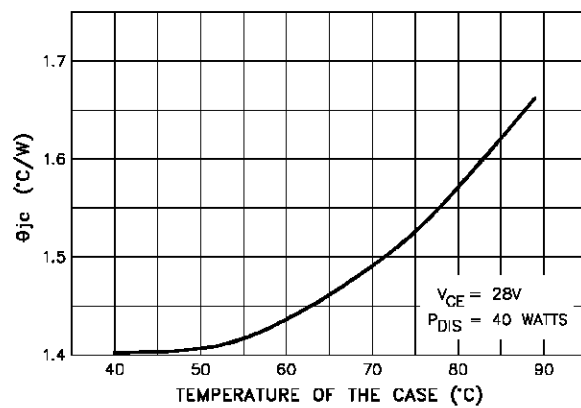
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 108 MHz	P <sub>IN</sub> = 7.5 W	V <sub>CE</sub> = 28 V	75	—	—	W
G <sub>P</sub>	f = 108 MHz	P <sub>IN</sub> = 7.5 W	V <sub>CE</sub> = 28 V	10	—	—	dB
η <sub>C</sub>	f = 108 MHz	P <sub>IN</sub> = 7.5 W	V <sub>CE</sub> = 28 V	70	—	—	%
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 30 V		—	—	85	pF

## TYPICAL PERFORMANCE

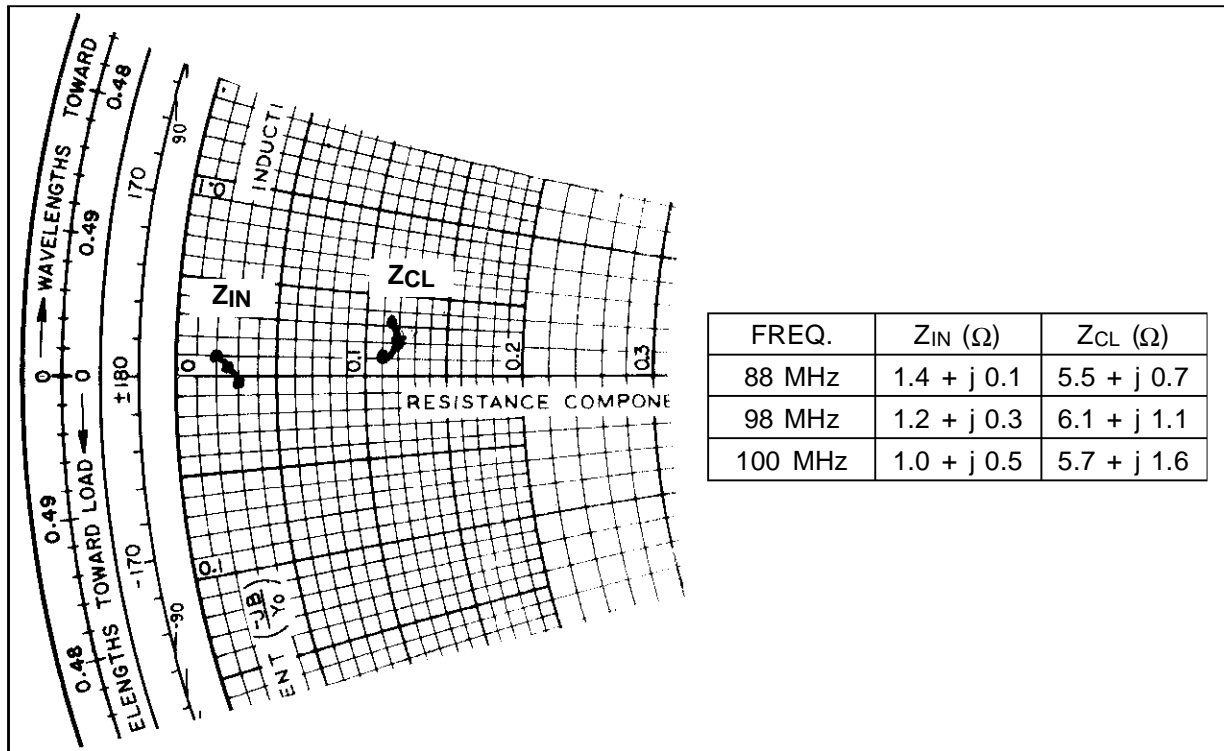
POWER OUTPUT vs POWER INPUT



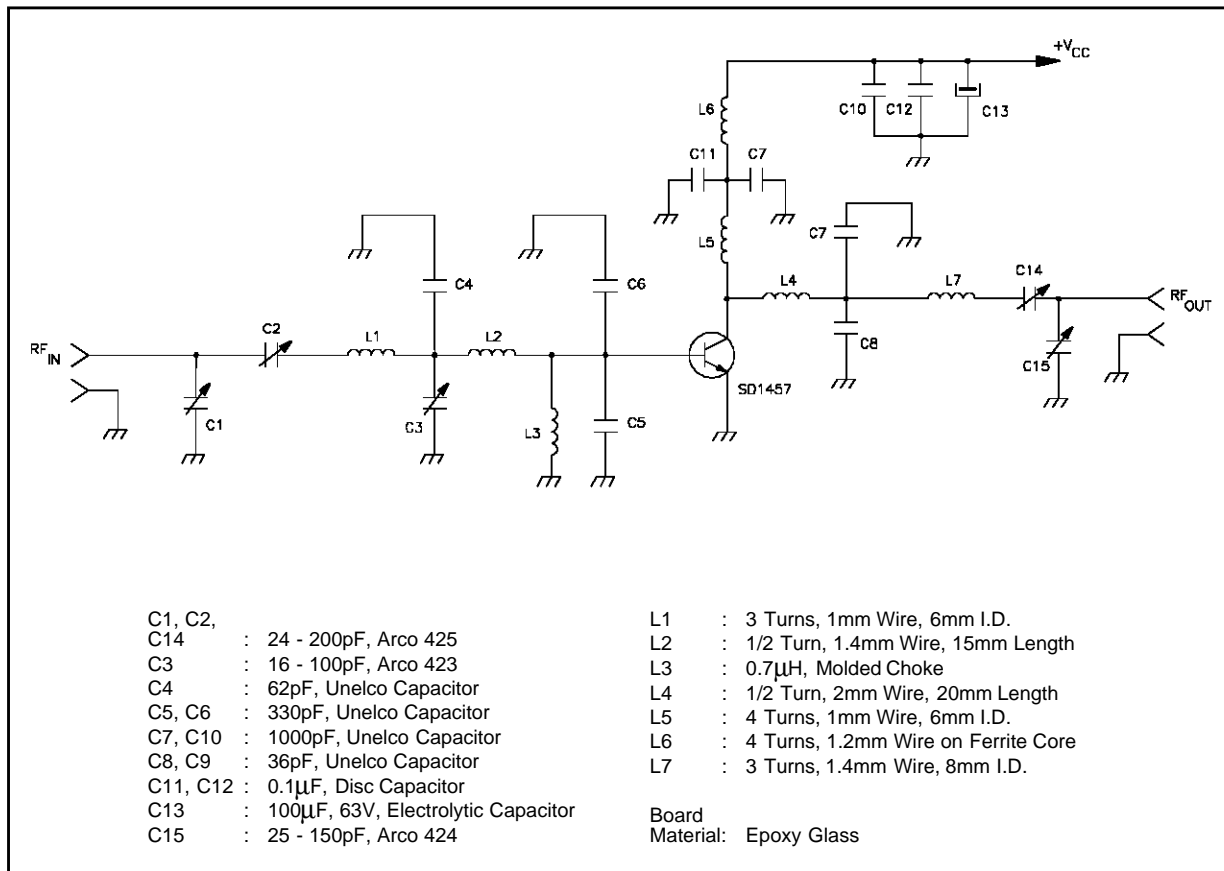
THERMAL RESISTANCE vs CASE TEMPERATURE



## IMPEDANCE DATA

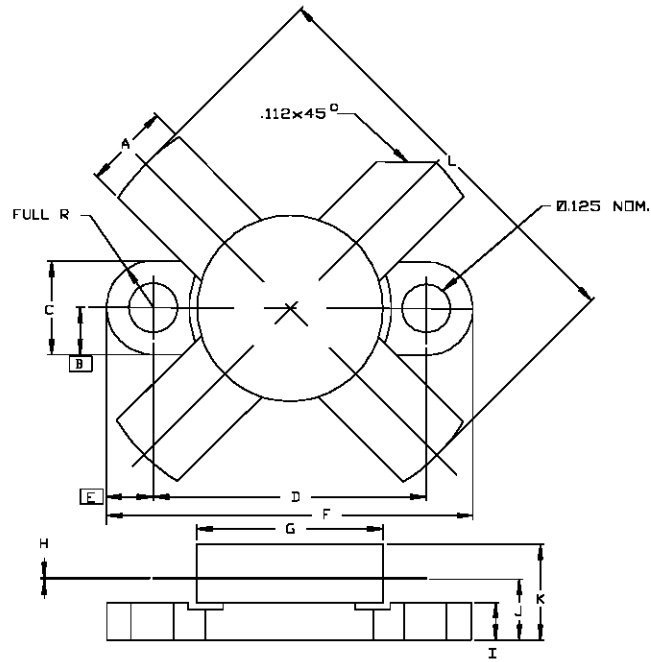


## TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84	K		.280/7,11
B	.125/3,18		L		1.050/26,67
C	.245/6,22	.255/6,48			
D	.720/18,28	.730/18,54			
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			
I	.090/2,29	.110/2,79			
J	.160/4,06	.175/4,45			

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