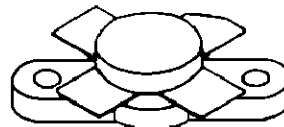


RF & MICROWAVE TRANSISTORS FM BROADCAST APPLICATIONS

- 108 MHz
- 28 VOLTS
- EFFICIENCY 75%
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 75 \text{ W MIN. WITH } 10.0 \text{ dB GAIN}$



.500 4LFL (M174)
epoxy sealed

ORDER CODE
SD1457

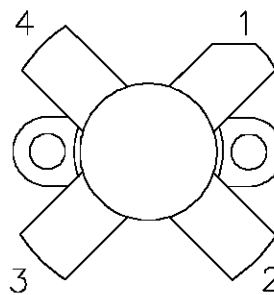
BRANDING
SD1457

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.

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	65	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{CES}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	10	A
P_{DISS}	Power Dissipation	100	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	1.5	$^{\circ}\text{C/W}$
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SD1457

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

STATIC

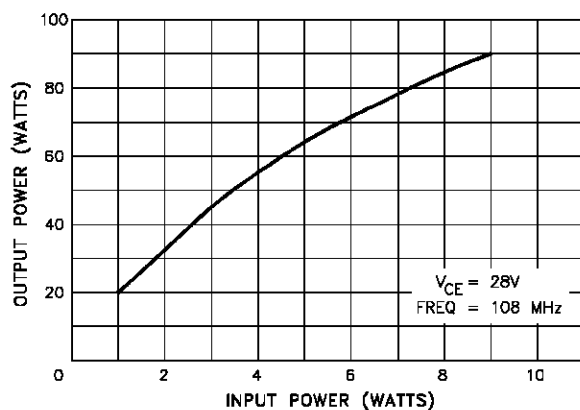
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_C = 50\text{mA}$	$I_E = 0\text{mA}$	65	—	—	V
BV_{CER}	$I_C = 50\text{mA}$	$R_{BE} = 10\Omega$	60	—	—	V
BV_{CEO}	$I_C = 50\text{mA}$	$I_B = 0\text{mA}$	30	—	—	V
BV_{EBO}	$I_E = 10\text{mA}$	$I_C = 0\text{mA}$	4.0	—	—	V
h_{FE}	$V_{CE} = 5\text{V}$	$I_C = 1\text{A}$	20	—	150	—

DYNAMIC

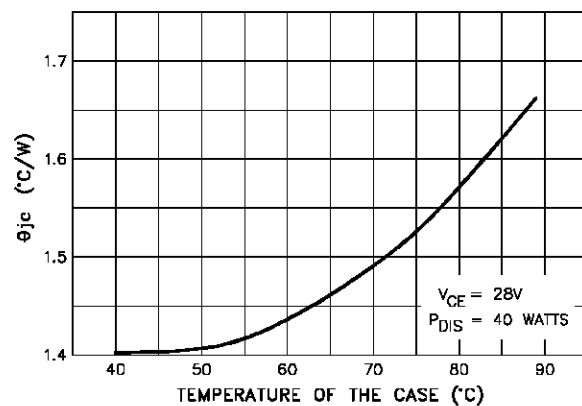
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 108\text{ MHz}$	$P_{IN} = 7.5\text{ W}$	$V_{CE} = 28\text{ V}$	75	—	—	W
G_P	$f = 108\text{ MHz}$	$P_{IN} = 7.5\text{ W}$	$V_{CE} = 28\text{ V}$	10	—	—	dB
η_C	$f = 108\text{ MHz}$	$P_{IN} = 7.5\text{ W}$	$V_{CE} = 28\text{ V}$	70	—	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 30\text{ V}$		—	—	85	pF

TYPICAL PERFORMANCE

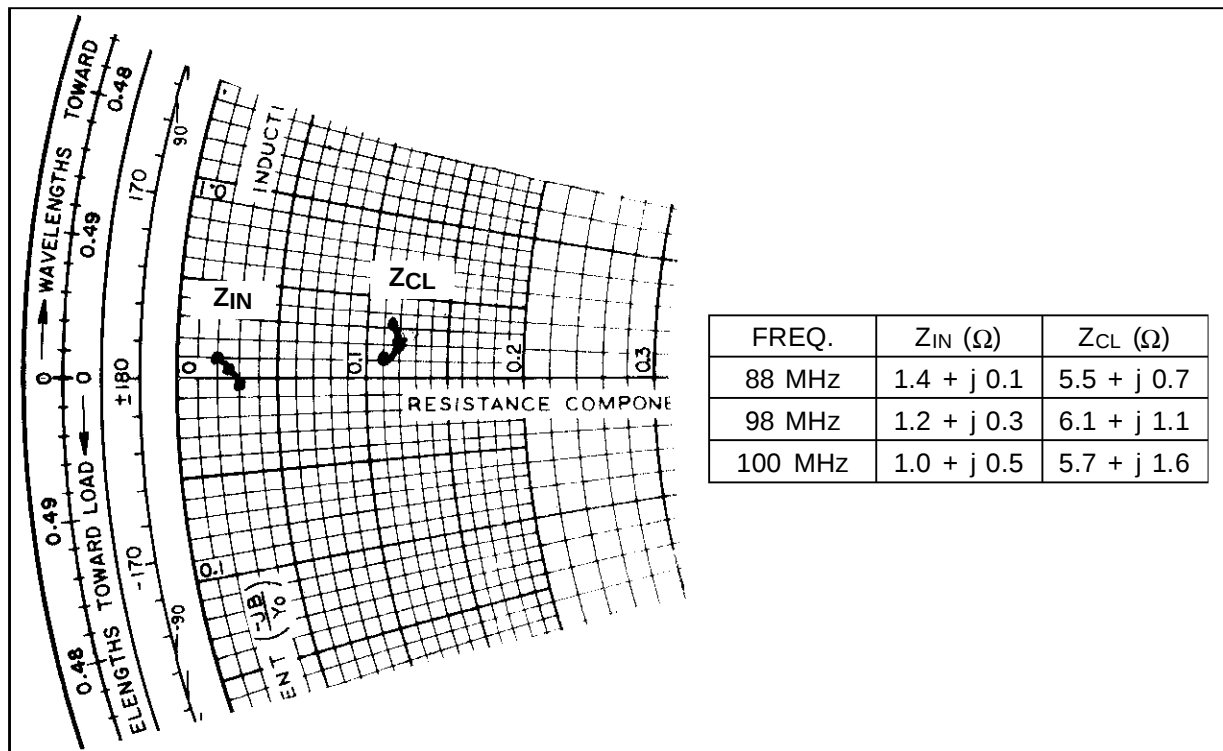
POWER OUTPUT vs POWER INPUT



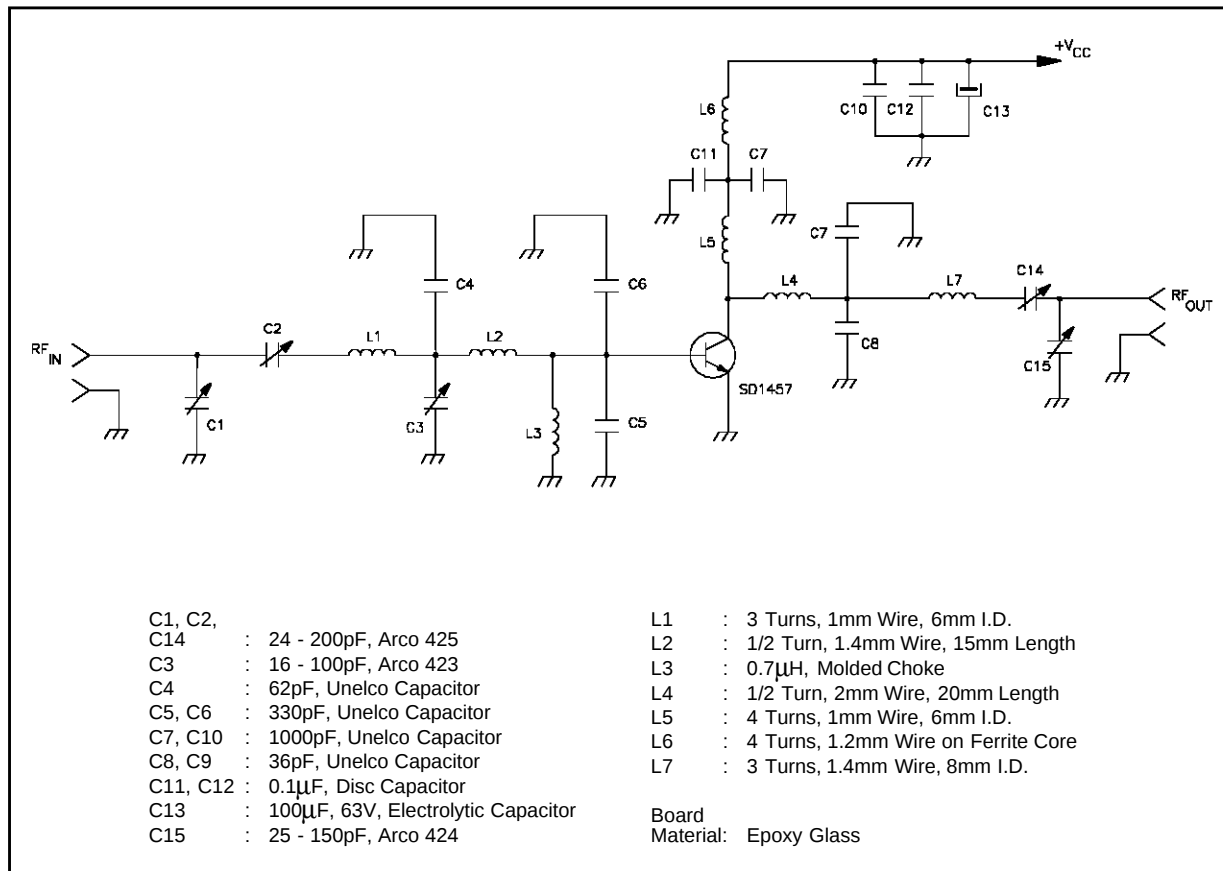
THERMAL RESISTANCE vs CASE TEMPERATURE



IMPEDANCE DATA

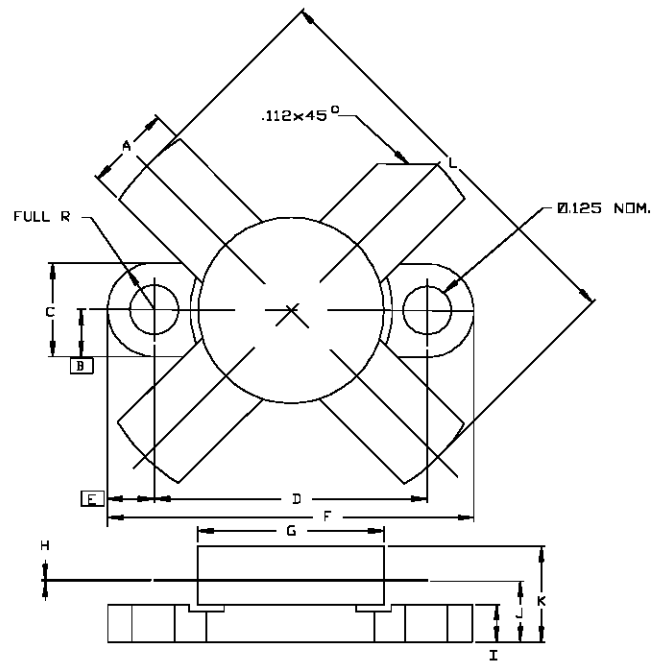


TEST CIRCUIT



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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