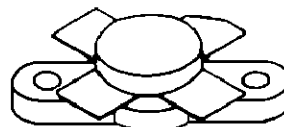


RF & MICROWAVE TRANSISTORS FM BROADCAST APPLICATIONS

- 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

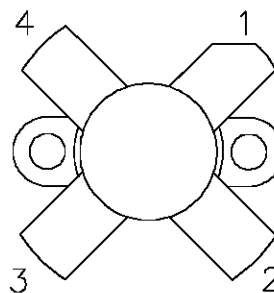
BRANDING
SD1457

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

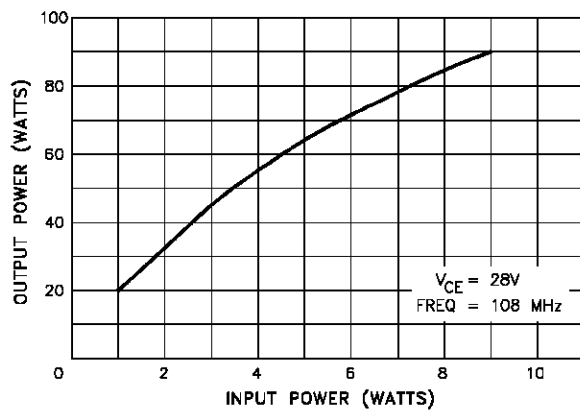
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{E}} = 0\text{mA}$	65	—	—	V
BV_{CER}	$I_{\text{C}} = 50\text{mA}$	$R_{\text{BE}} = 10\Omega$	60	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{B}} = 0\text{mA}$	30	—	—	V
BV_{EBO}	$I_{\text{E}}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

DYNAMIC

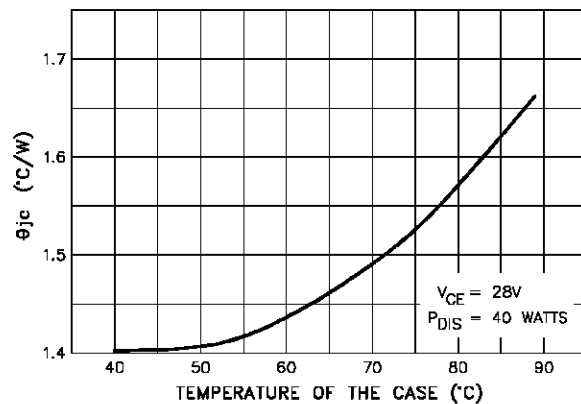
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 108\text{ MHz}$	$P_{\text{IN}} = 7.5\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	75	—	—	W
G_{P}	$f = 108\text{ MHz}$	$P_{\text{IN}} = 7.5\text{ W}$	$V_{\text{CE}} = 28\text{ V}$	10	—	—	dB
η_{C}	$f = 108\text{ MHz}$	$P_{\text{IN}} = 7.5\text{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

TYPICAL PERFORMANCE

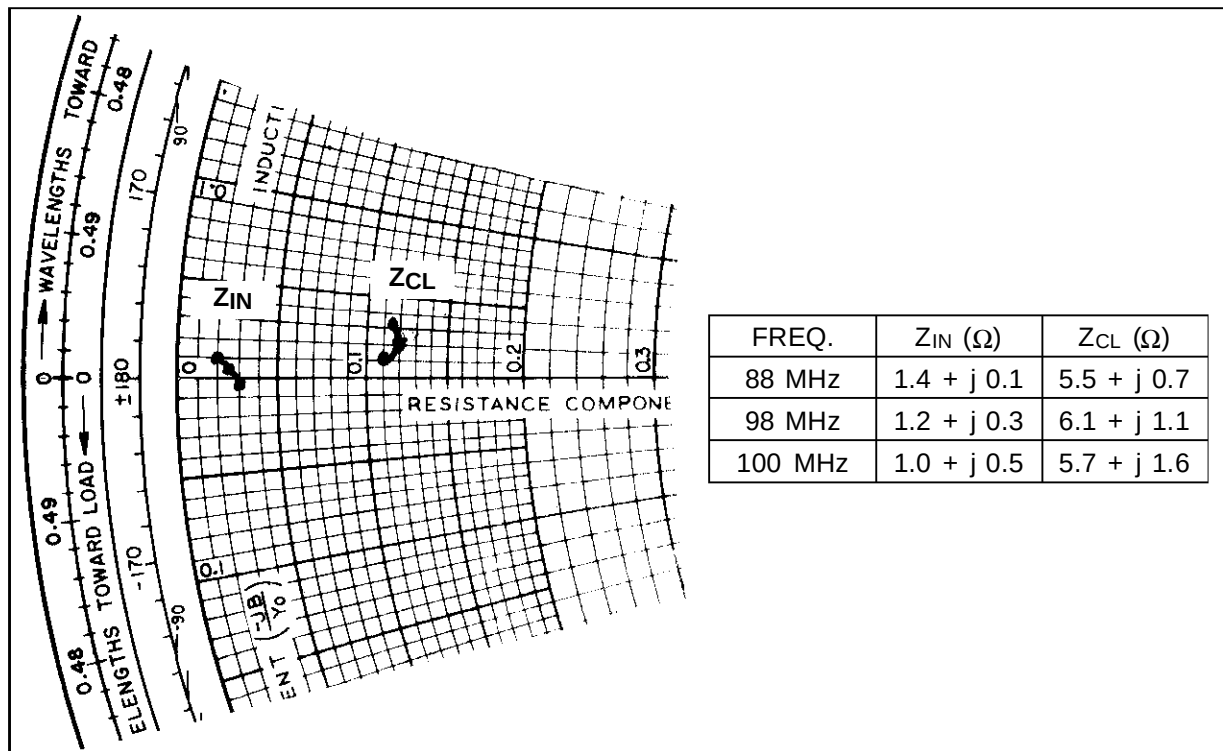
POWER OUTPUT vs POWER INPUT



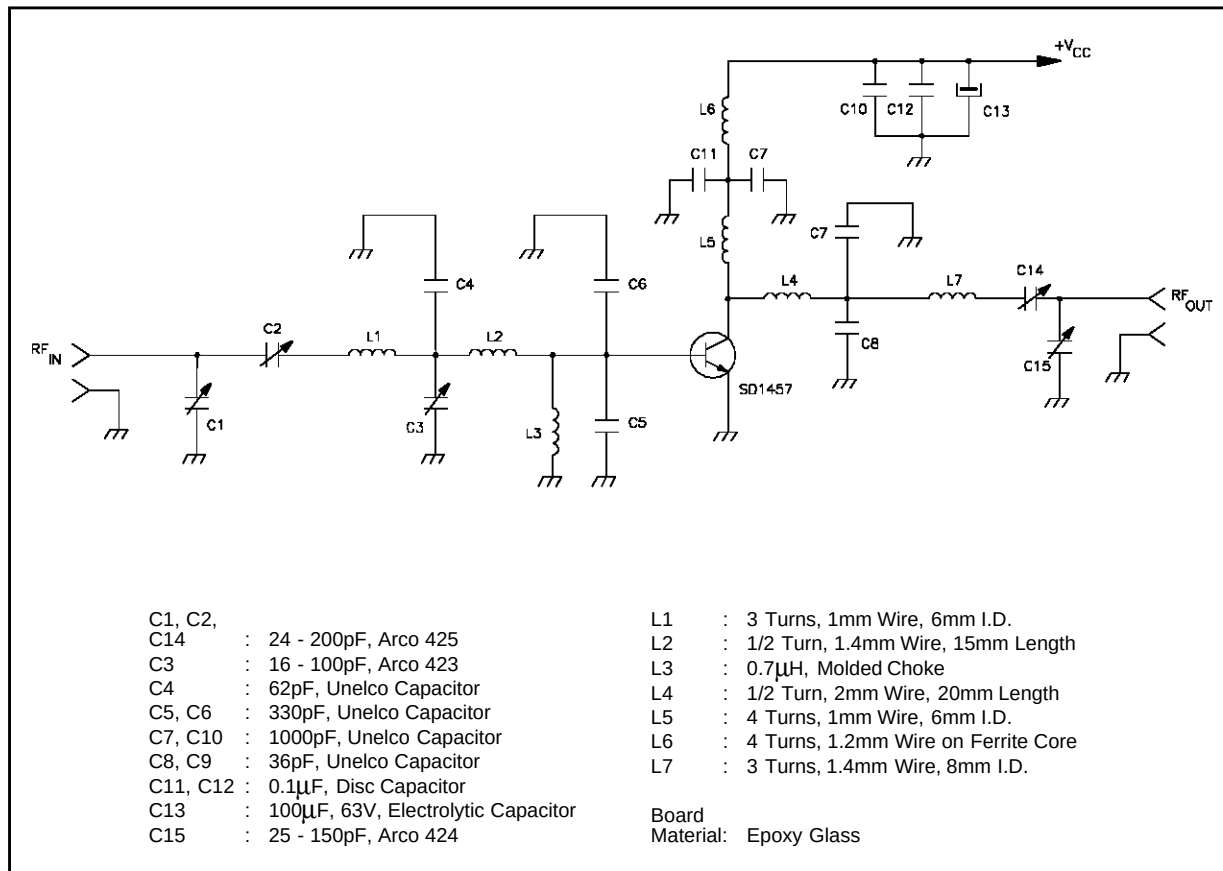
THERMAL RESISTANCE vs CASE TEMPERATURE



IMPEDANCE DATA

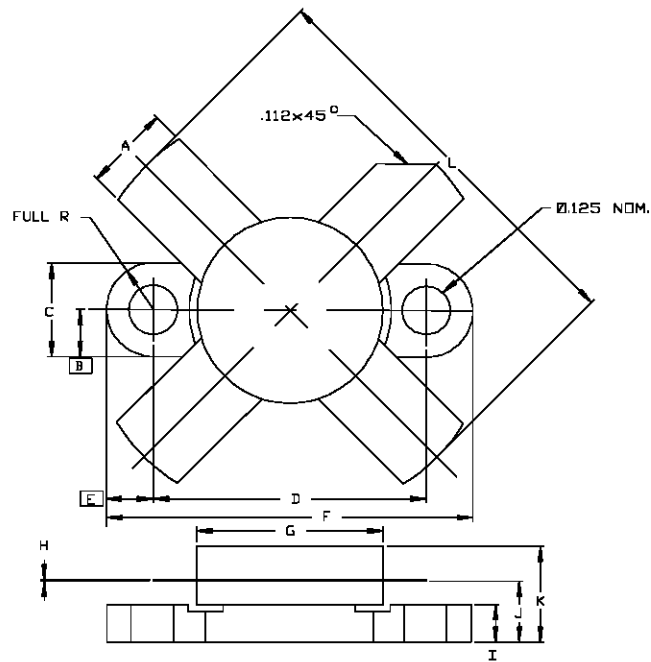


TEST CIRCUIT



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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