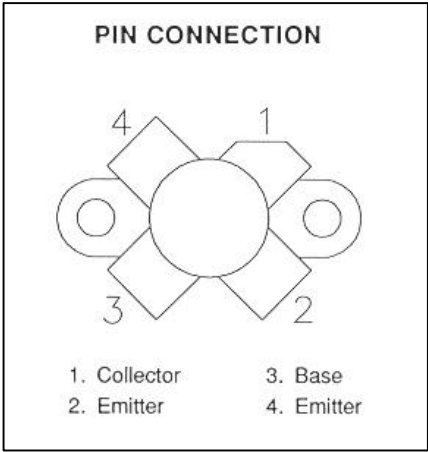
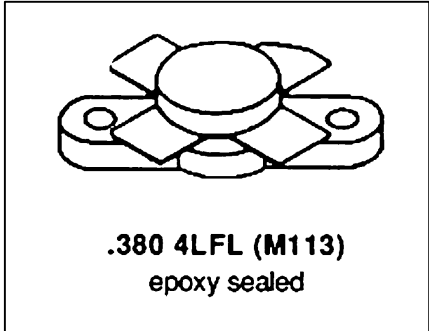


SD1224-02

RF AND MICROWAVE TRANSISTORS VHF FM APPLICATIONS

Features

- 175 MHz
- 28 VOLTS
- CLASS C
- COMMON EMITTER
- EFFICIENCY 60% MIN.
- $P_{OUT} = 40 \text{ W MIN.}$
- $G_P = 7.6 \text{ dB GAIN}$



DESCRIPTION:

The SD1224-02 is an epitaxial silicon NPN planar transistor designed primarily for 28 V FM Class C RF amplifiers utilized in ground station transmitters. This device utilizes ballasted emitter resistors and improved metallization systems to achieve optimum load mismatch capability.

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	35	V
V_{CES}	Collector-Emitter Voltage	65	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	5.0	A
P_{DISS}	Power Dissipation	60	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	2.9	$^{\circ}\text{C/W}$
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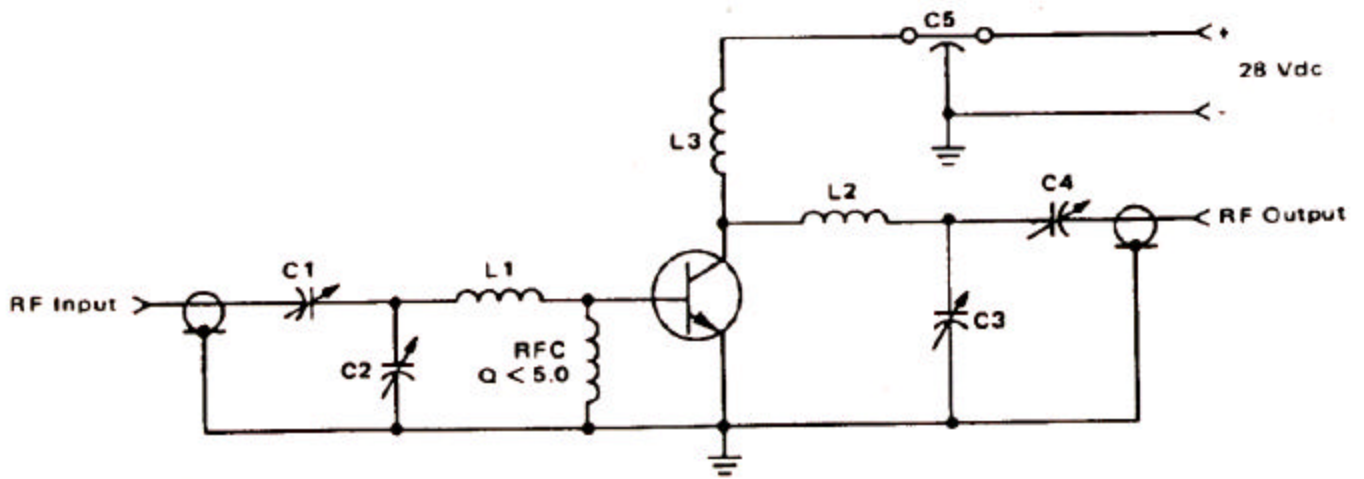
ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)
STATIC

Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CBO}	I_C = 200 mA I_B = 0 mA	65			V
BV_{CES}	I_C = 200 mA V_{BE} = 0 V	65			V
BV_{CEO}	I_C = 200 mA I_B = 0 mA	35			V
BV_{EBO}	I_E = 10 mA I_C = 0 mA	4.0			V
I_{CB0}	V_{CB} = 30 V I_E = 0 mA			1	mA
h_{FE}	V_{CE} = 5 V I_C = 500 mA	5			

DYNAMIC

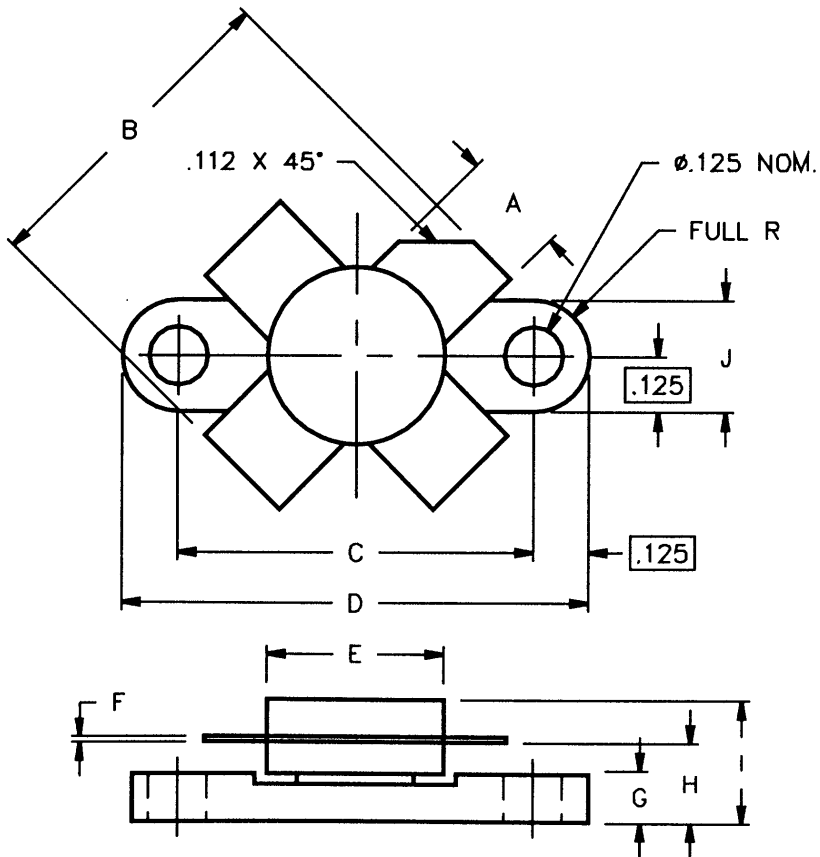
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	40			W
η_C	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	60			%
G_P	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	7.6			dB
C_{OB}	f = 1 MHz V_{CB} = 30 V			65	pF

TEST CIRCUIT



- C1,C2, C3,C4 : ARCO 464, 25-280pF
- C5 : 0.1 μ F
- L1 : 1" Straight #16 AWG
- L2 : 1 Turn, #16 AWG, 1/4" I.D.
- L3 : 0.22 μ H

PACKAGE MECHANICAL DATA



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84	I		.260/7,11
B	.785/19,94		J	.240/6,10	.255/6,48
C	.720/18,29	.730/18,54			
D	.970/24,64	.980/24,89			
E		.385/9,78			
F	.004/0,10	.006/0,15			
G	.085/2,16	.105/2,67			
H	.160/4,06	.180/4,57			