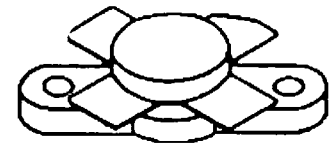


RF AND MICROWAVE TRANSISTORS VHF FM APPLICATIONS

Features

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

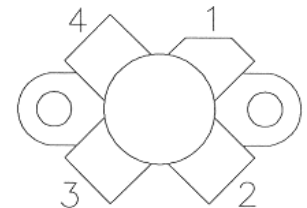


.380 4LFL (M113)
epoxy sealed

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.

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	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

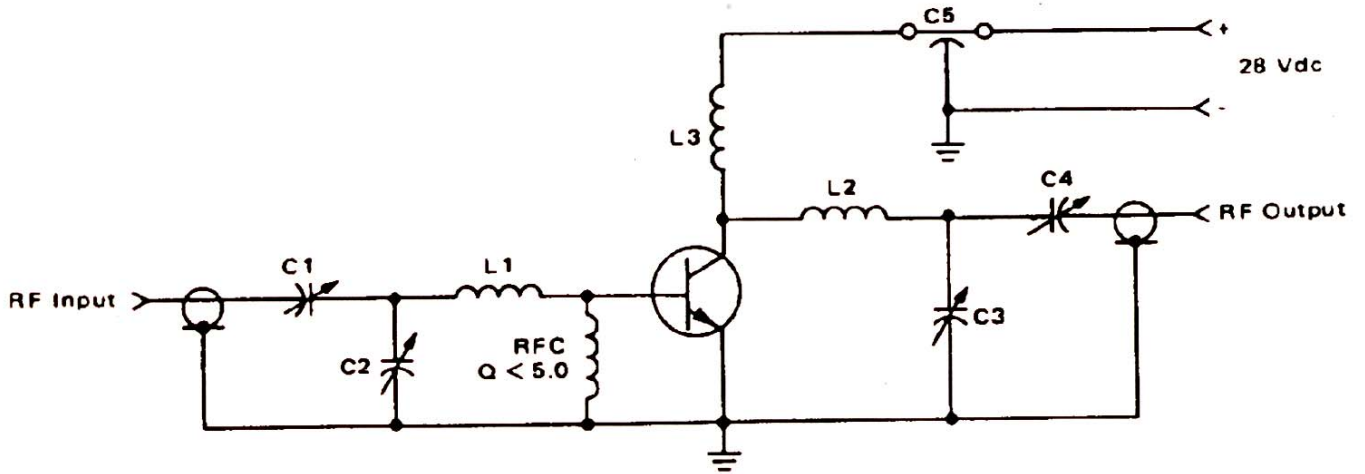
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
BV_{CBO}	I_C = 200 mA I_B = 0 mA	65			V
BV_{CES}	I_C = 200 mA V_{BE} = 0 V	65			V
BV_{CEO}	I_C = 100 mA I_B = 0 mA	35			V
BV_{EBO}	I_E = 10 mA I_C = 0 mA	4.0			V
I_{CBO}	V_{CB} = 30 V I_E = 0 mA			1	mA
h_{FE}	V_{CE} = 5 V I_C = 500 mA	20	200		

DYNAMIC

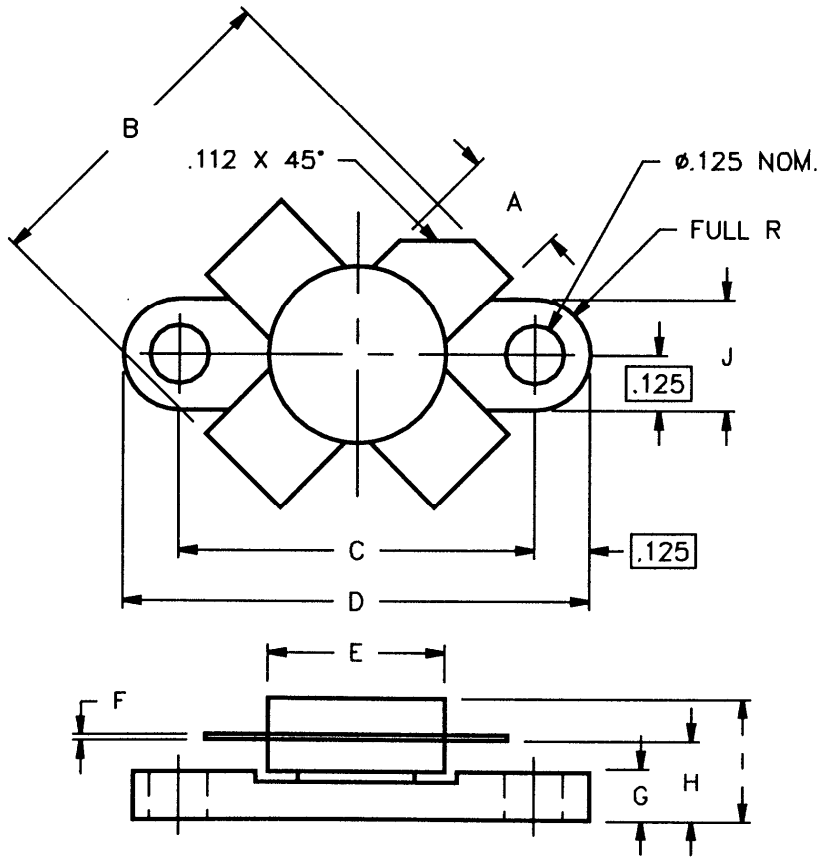
Symbol	Test Conditions	Value			Units
		Min.	Typ.	Max.	
P_{OUT}	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	40			W
η_C	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	60			%
G_P	f = 175 MHz P_{IN} = 7.0 W V_{CE} = 28 V	7.6			dB
C_{OB}	f = 1 MHz V_{CB} = 30 V			65	pF

Revision A, October 2009

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			

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