ADVANCED POWER TECHNOLOGY RF®
140 COMMERCE DRIVE
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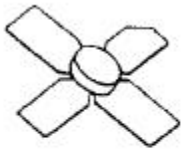
MS1401

RF AND MICROWAVE TRANSISTORS
VHF PORTABLE/MOBILE APPLICATIONS

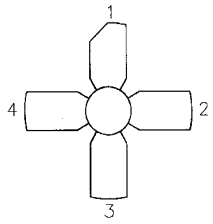


.280 4LSL (M123)
epoxy sealed

Features

- **150 MHz**
- **7.5 Volts**
- **Common Emitter**
- **P_{OUT} = 2.5 W Min.**
- **G_P = 11.0 dB Gain**

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

DESCRIPTION:

The MS1401 is a 7.5 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. It withstands severe mismatch under operating conditions.

ABSOLUTE MAXIMUM RATINGS (Tcase = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CER}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	1.7	A
P_{DISS}	Power Dissipation	15	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Thermal Data

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	11.6	°C/W

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ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC

Symbol	Test Conditions		Value			Units
			Min.	Typ.	Max.	
BV_{CES}	I_C = 10 mA	V_{BE} = 0 V	36			V
BV_{CEO}	I_C = 50 mA	I_B = 0 mA	16			V
BV_{EBO}	I_E = 2 mA	I_C = 0 mA	4.0			V
I_{CER}	V_{CE} =10 V	R_{BE} = 50 Ω			0.5	mA
I_{CBO}	V_{CB} =15 V	I_E = 0 mA			1.0	mA
h_{FE}	V_{CE} = 5 V	I_C = 200 mA	20		100	——

DYNAMIC

Symbol	Test Conditions		Value			Units
			Min.	Typ.	Max.	
P_{OUT}	f = 150 MHz	V_{CC} = 7.5 V	2.5			W
G_P	f = 150 MHz	V_{CC} = 7.5 V	11			Db
C_{OB}	f = 150 MHz	V_{CB} = 7.5 V			23	PF

IMPEDANCE DATA

Freq.	ZIN (Ω)	ZCL (Ω)
150 MHz	2.2 – j 0.4	7.9 + j 8.4
160 MHz	1.9 – j 0.8	7.6 + j 8.2
170 MHz	1.0 – j 1.0	6.0 + j 8.3

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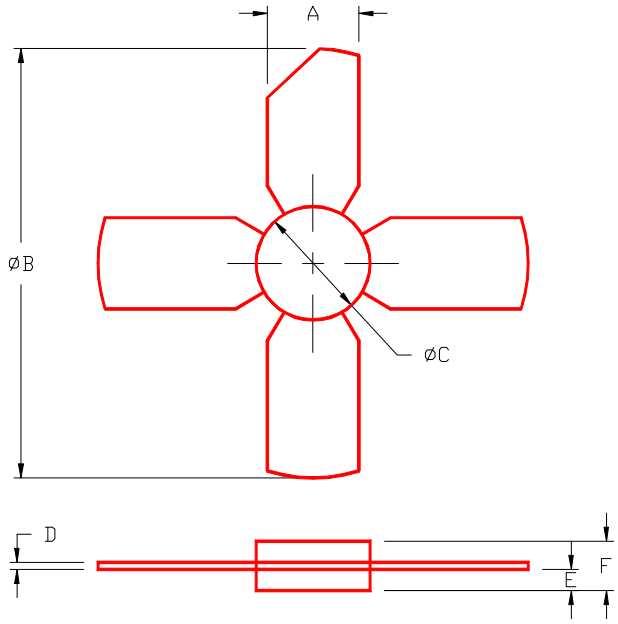
PACKAGE MECHANICAL DATA

PACKAGE STYLE M123



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.220/5,59	.230/5,84			
B	-----	1.055/26,8			
C	.275/6,99	.285/7,24			
D	.004/0,10	.006/0,15			
E	.050/1,27	.060/1,52			
F	.118/3,00	.130/3,30			