

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.

IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

KEY FEATURES

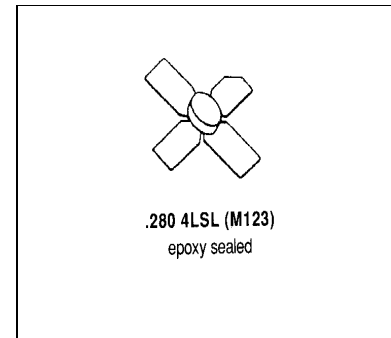
- 150 MHz
- 7.5 Volts
- Common Emitter
- $P_{OUT} = 2.5$ W Min.
- $G_P = 11.0$ dB Gain

APPLICATIONS/BENEFITS

- VHF Portable/Mobile Applications

ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25^{\circ}C$)

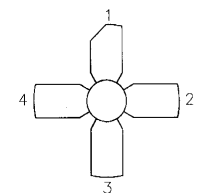
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CER}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	1.7	A
P_{DISS}	Power Dissipation	15	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature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



THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	11.6	$^{\circ}C/W$
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PIN CONNECTION



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

STATIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

Symbol	Test Conditions	MS1401			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	—

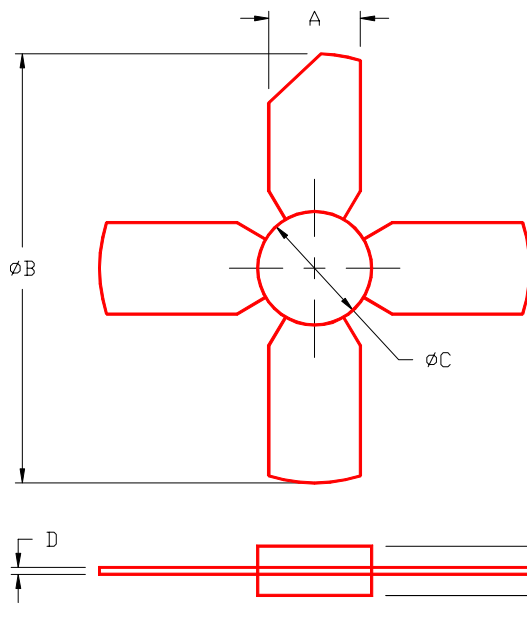
DYNAMIC ELECTRICAL SPECIFICATIONS (TCASE = 25°C)

Symbol	Test Conditions	MS1401			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.	Z _{IN} (Ω)	Z _{CL} (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

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			



MS1401

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

www.Microsemi.com

NOTES