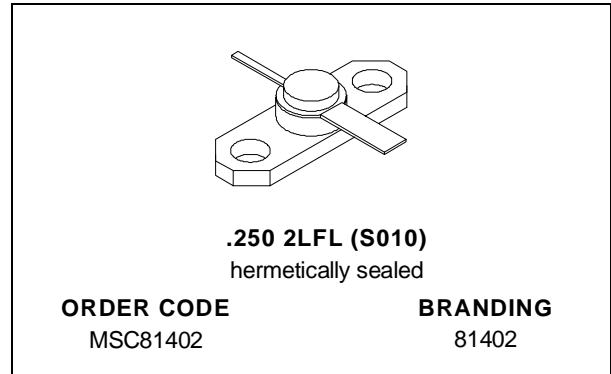


## RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIERS APPLICATIONS

PRELIMINARY DATA

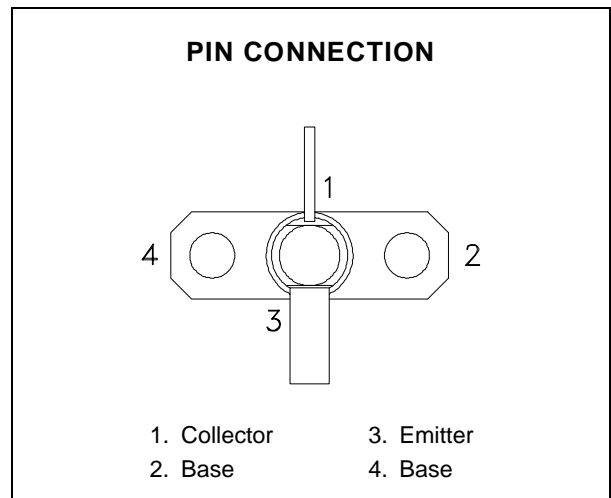
- REFRACTORY/GOLD METALLIZATION
- HIGH GAIN & COLLECTOR EFFICIENCY
- RUGGED OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P<sub>OUT</sub> = 2.0 W MIN. WITH 10.0 dB GAIN



### DESCRIPTION

The MSC81402 is a 28 Volt, Class C, common base NPN bipolar device designed for general purpose amplifier applications in the UHF and L-Band frequency range.

High gain and collector efficiency along with extreme ruggedness are obtained using a gold metallized emitter-ballasted overlay die geometry.



### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
P <sub>DISS</sub>	Power Dissipation* (T <sub>C</sub> ≤ 50°C)	6	W
I <sub>C</sub>	Device Current*	0.23	A
V <sub>CC</sub>	Collector-Supply Voltage*	30	V
T <sub>J</sub>	Junction Temperature	200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +200	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance*	25	°C/W
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\*Applies only to rated RF amplifier operation

# MSC81402

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

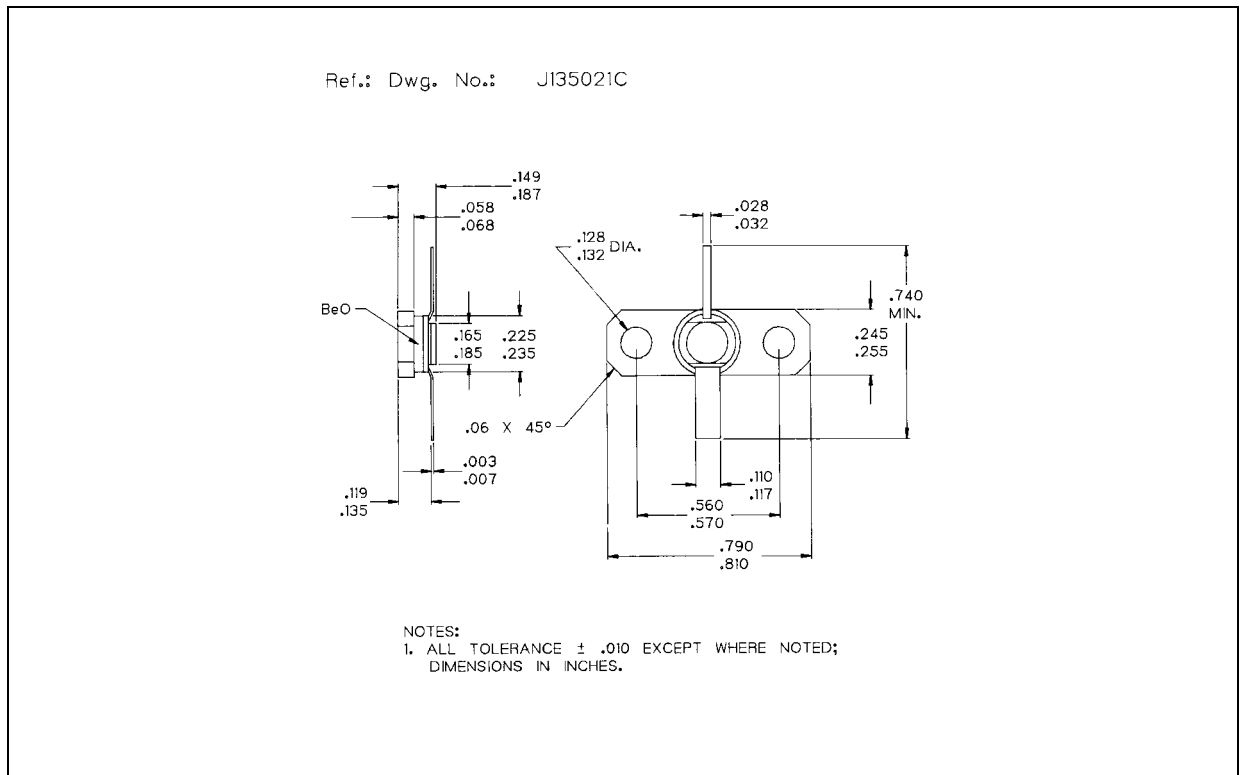
### STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 1mA	I <sub>E</sub> = 0mA	50	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	I <sub>C</sub> = 0mA	3.5	—	—	V
BV <sub>CER</sub>	I <sub>C</sub> = 5mA	R <sub>BE</sub> = 10Ω	50	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 28V		—	—	0.5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 100mA	30	—	300	—

### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1.4 GHz	P <sub>IN</sub> = 0.2W	V <sub>CC</sub> = 28V	2.0	—	—	W
η <sub>C</sub>	f = 1.4 GHz	P <sub>IN</sub> = 0.2W	V <sub>CC</sub> = 28V	50	—	—	%
G <sub>P</sub>	f = 1.4 GHz	P <sub>IN</sub> = 0.2W	V <sub>CC</sub> = 28V	10.0	—	—	dB
C <sub>OB</sub>	f = 1MHz	V <sub>CB</sub> = 28V		—	3.2	—	pF

## PACKAGE MECHANICAL DATA



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