



MSC81402

RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIERS APPLICATIONS

PRELIMINARY DATA

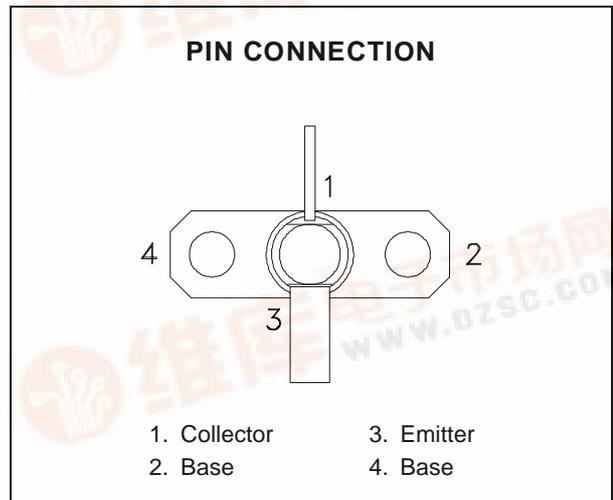
- REFRACTORY/GOLD METALLIZATION
- HIGH GAIN & COLLECTOR EFFICIENCY
- RUGGED OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- $P_{OUT} = 2.0 \text{ W MIN. WITH } 10.0 \text{ dB GAIN}$



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 ($T_{case} = 25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
P_{DISS}	Power Dissipation* ($T_c \leq 50^{\circ}\text{C}$)	6	W
I_c	Device Current*	0.23	A
V_{CC}	Collector-Supply Voltage*	30	V
T_J	Junction Temperature	200	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +200	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance*	25	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

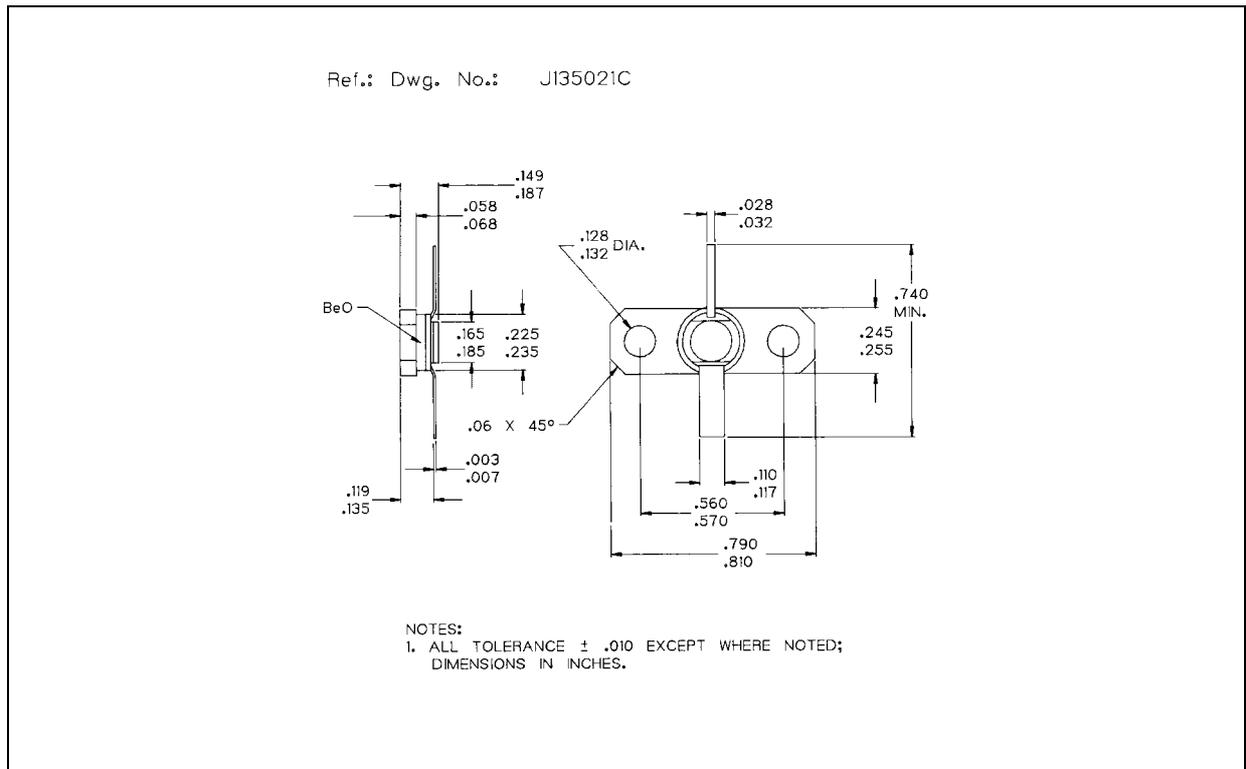
STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV _{CBO}	I _C = 1mA	I _E = 0mA	50	—	—	V
BV _{EBO}	I _E = 1mA	I _C = 0mA	3.5	—	—	V
BV _{CER}	I _C = 5mA	R _{BE} = 10Ω	50	—	—	V
I _{CBO}	V _{CB} = 28V		—	—	0.5	mA
h _{FE}	V _{CE} = 5V	I _C = 100mA	30	—	300	—

DYNAMIC

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

PACKAGE MECHANICAL DATA



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