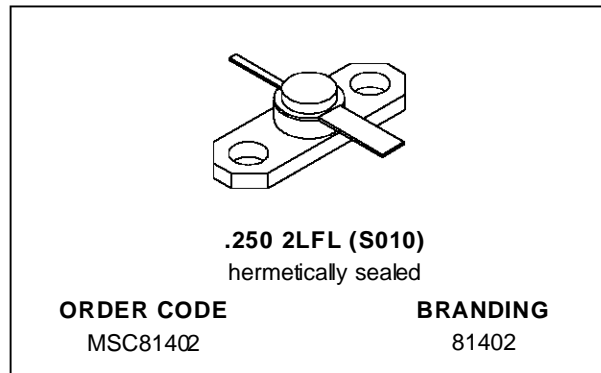


RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIERS APPLICATIONS

PRELIMINARY DATA

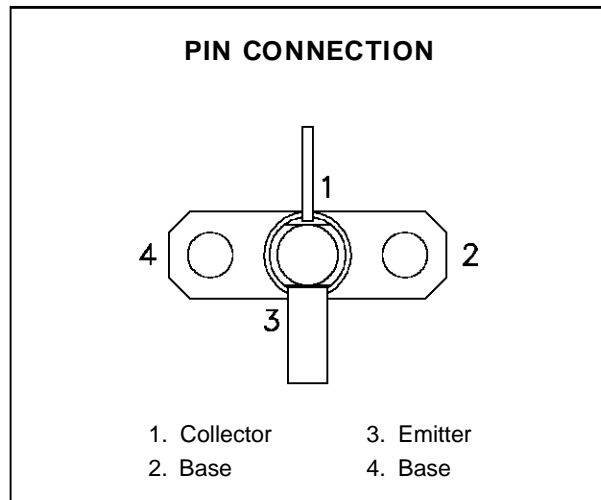
- REFRACTORY/GOLD METALLIZATION
- HIGH GAIN & COLLECTOR EFFICIENCY
- RUGGED OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 2.0 W MIN. WITH 10.0 dB GAIN



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_{case} = 25°C)

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _c ≤ 50°C)	6	W
I _c	Device Current*	0.23	A
V _{CC}	Collector-Supply Voltage*	30	V
T _J	Junction Temperature	200	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	25	°C/W
----------------------	-----------------------------------	----	------

*Applies only to rated RF amplifier operation

MSC81402

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

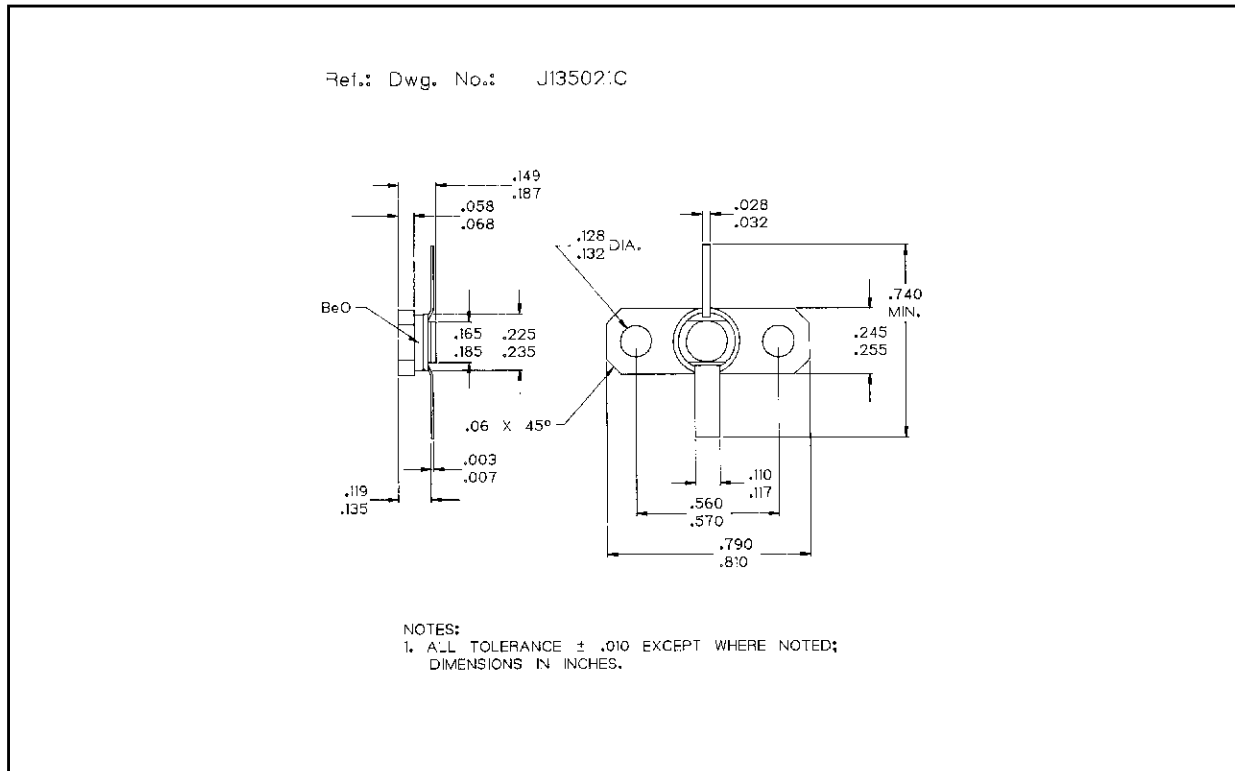
STATIC

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}	$I_C = 5mA$	$R_{BE} = 10\Omega$	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



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A