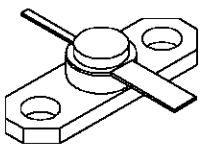
SGS-THOMSON MICROELECTRONICS

MSC81402

RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIERS APPLICATIONS

PRELIMINARY DATA

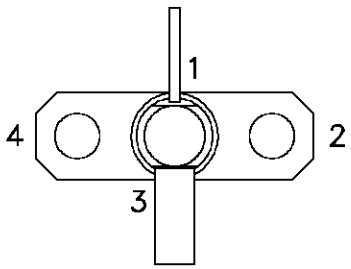
- REFRACTORY/GOLD METALLIZATION
- HIGH GAIN & COLLECTOR EFFICIENCY
- RUGGED OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- P_{OUT} = 2.0 W MIN. WITH 10.0 dB GAIN



.250 2LFL (S010)
hermetically sealed

ORDER CODE	BRANDING
MSC81402	81402

PIN CONNECTION



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

DESCRIPTION

The MSC81402 is a 28 Volt, Class C, common base NPN biploar 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* ($T_C \leq 50°C$)	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

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}	IC = 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
ηc	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