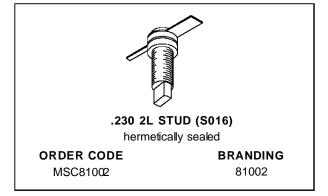
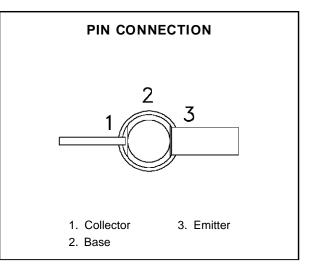


MSC81002

RF & MICROWAVE TRANSISTORS GENERAL PURPOSE AMPLIFIER APPLICATIONS

- EMITTER BALLASTED
- VSWR CAPABILITY ∞:1 @ RATED CONDITIONS
- HERMETIC STRIPAC[®] PACKAGE
- $P_{OUT} = 2.0$ W MIN. WITH 10 dB GAIN @ 1 GHz





DESCRIPTION

The MSC81002 is a common base hermetically sealed silicon NPN microwave transistor utilizing a fishbone, emitter ballasted geometry with a refractory/gold metallization system. This device is capable of withstanding an infinite load VSWR at any phase angle under rated conditions.

The MSC81002 was designed for Class C amplifier applications in the 0.4 - 1.2 GHz frequency range.

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

Symbol	Parameter	Value	Unit	
PDISS	Power Dissipation* $(T_C \le 75^{\circ}C)$	6.25	W	
Ι _C	Device Current*	200	mA	
V _{CC}	Collector-Supply Voltage*	35	V	
TJ	Junction Temperature	200	°C	
T _{STG}	Storage Temperature	– 65 to +200	°C	

THERMAL DATA

RTH(j-c)	Junction-Case Thermal Resistance*	20	°C/W		
*Applies only to rated RF amplifier operation					

MSC81002

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

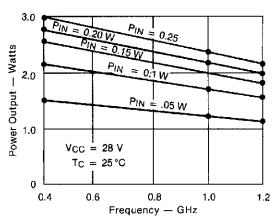
STATIC

Symbol	Test Conditions	Value			Unit	
	Test conditions		Min.	Тур.	Max.	
BV _{CBO}	$I_C = 1 m A$	$I_E = 0 m A$	45	—	_	V
BV _{EBO}	$I_E = 1 m A$	$I_C = 0 m A$	3.5	—	—	V
BVCER	IC = 5mA	$R_{BE} = 10\Omega$	45		—	V
I _{СВО}	$V_{CB} = 28V$		—	_	0.5	mA
h _{FE}	$V_{CE} = 5V$	I _C = 100mA	15		120	—

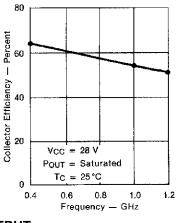
DYNAMIC

Symbol	Test Conditions		Value			11:4	
Symbol	Test Conditions			Min.	Тур.	Max.	Unit
Pout	f = 1.0 GHz	$P_{IN}=0.2\ W$	$V_{CC}=28\ V$	2.0	2.2		W
ηc	f = 1.0 GHz	$P_{IN}=0.2\ W$	$V_{CC} = 28 V$	50	55	—	%
GP	f = 1.0 GHz	$P_{IN}=0.2\ W$	$V_{CC} = 28 V$	10	10.4	—	dB
Сов	f = 1 MHz	$V_{CB} = 28 V$		—		3.2	pF

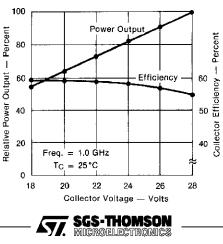
TYPICAL PERFORMANCE POWER OUTPUT vs FREQUENCY



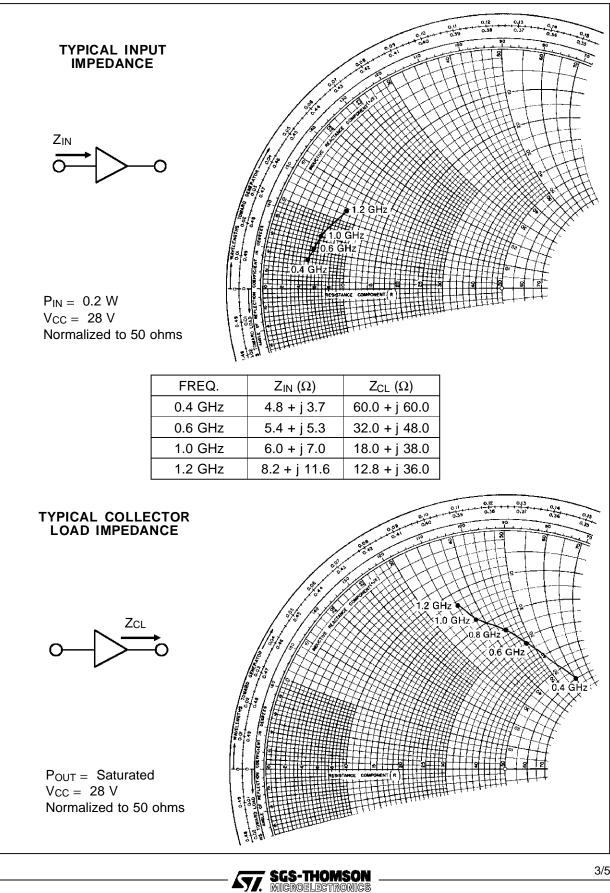
COLLECTOR EFFICIENCY vs FREQUENCY



RELATIVE POWER OUTPUT vs COLLECTOR VOLTAGE

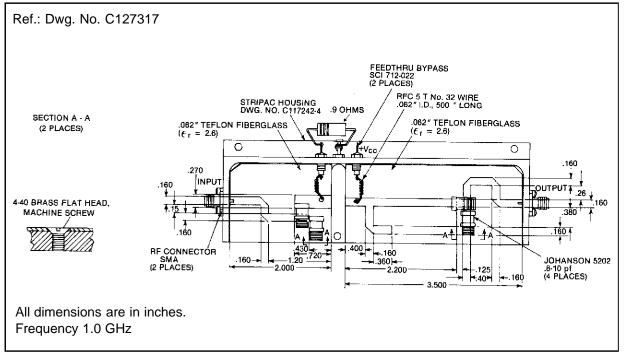


IMPEDANCE DATA

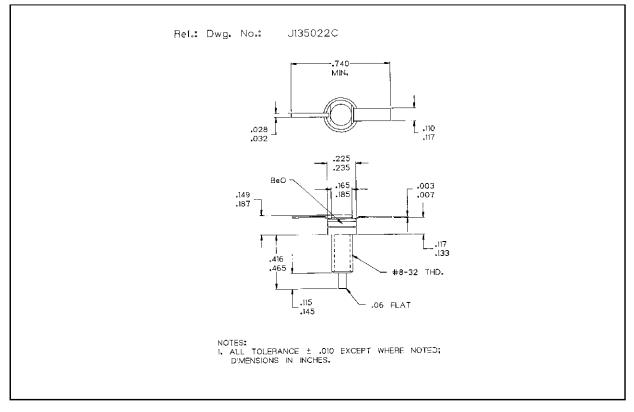


MSC81002

TEST CIRCUIT



PACKAGE MECHANICAL DATA





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