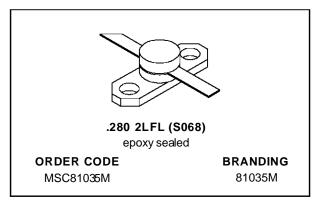


MSC81035M

RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- REFRACTORY/GOLD METALLIZATION
- EMITTER SITE BALLASTED
- ∞:1 VSWR CAPABILITY
- LOW THERMAL RESISTANCE
- INPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC HERMETIC PACKAGE
- Pout = 35 W MIN. WITH 10.7 dB GAIN

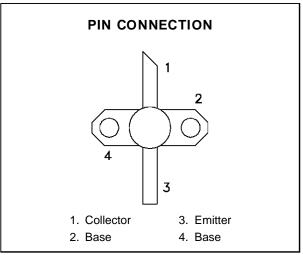


DESCRIPTION

The MSC81035M is a medium power Class C transistor designed specifically for pulsed L-Band avionics applications. This device is a direct replacement for the MSC1035M. MSC81035M offers improved saturated ouput power and collector efficiency based on the test circuit described herein.

Low RF thermal resistance and computerized automatic wire bonding techniques ensure high reliability and product consistency.

The MSC81035M is housed in the IMPAC $^{\rm TM}$ package with internal input matching.



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

Symbol	Parameter	Value	Unit
P _{DISS}	Power Dissipation* (T _C ≤ 100°C)	150	W
Ic	Device Current*	3.0	А
Vcc	Collector-Supply Voltage*	55	V
TJ	Junction Temperature (Pulsed RF Operation)	250	°C
T _{STG}	Storage Temperature	- 65 to +200	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance*	1.0	°C/W

*Applies only to rated RF amplifier operation

Note: Thermal Resistance determined by Infra-Red Scanning of Hot-Spot Junction Temperature at rated RF operating conditions.

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

STATIC

Symbol	Took Conditions	Value			11:4		
	Test Conditions		Min.	Тур.	Max.	Unit	
BV _{CBO}	I _C = 10 mA	$I_E = 0 \text{ mA}$		65	_		V
BV _{EBO}	I _E = 1 mA	$I_C = 0 \text{ mA}$		3.5	_	_	V
BVcer	I _C = 10 mA	$R_{BE} = 10 \Omega$		65	_		V
ICES	V _{BE} = 0 V	V _{CE} = 50 V		_	_	5	mA
h _{FE}	V _{CE} = 5 V	I _C = 500 mA		15	_	120	_

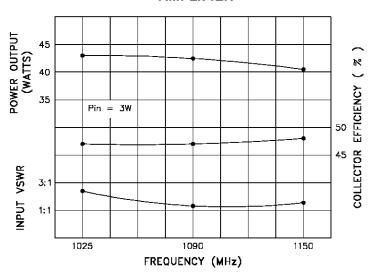
DYNAMIC

Cumbal	Took Conditions		Value			IImit	
Symbol	Test Conditions			Min.	Тур.	Max.	Unit
Pout	f = 1025 - 1150 MHz	$P_{IN} = 3.0 \text{ W}$	$V_{CC} = 50 V$	35	40	_	W
ης	f = 1025 - 1150 MHz	$P_{IN} = 3.0 \text{ W}$	$V_{CC} = 50 \text{ V}$	40	_	_	%
P _G	f = 1025 - 1150 MHz	$P_{IN} = 3.0 \text{ W}$	$V_{CC} = 50 \text{ V}$	10.7	11.2	_	dB

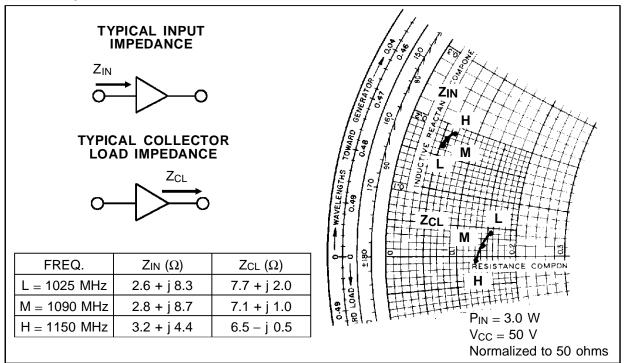
Note: Pulse Width = $10\mu Sec$ Duty Cycle = 1%

TYPICAL PERFORMANCE

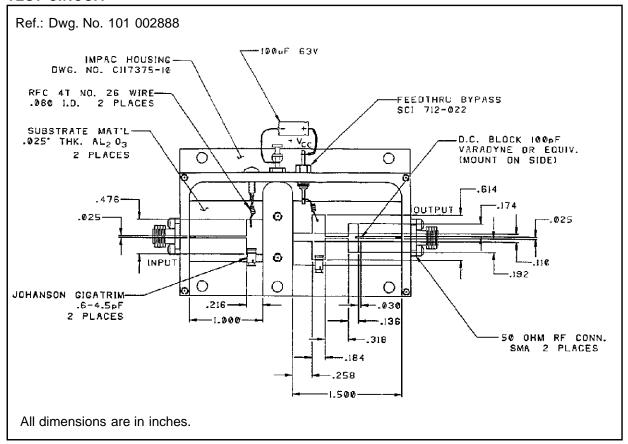
TYPICAL BROADBAND POWER AMPLIFIER



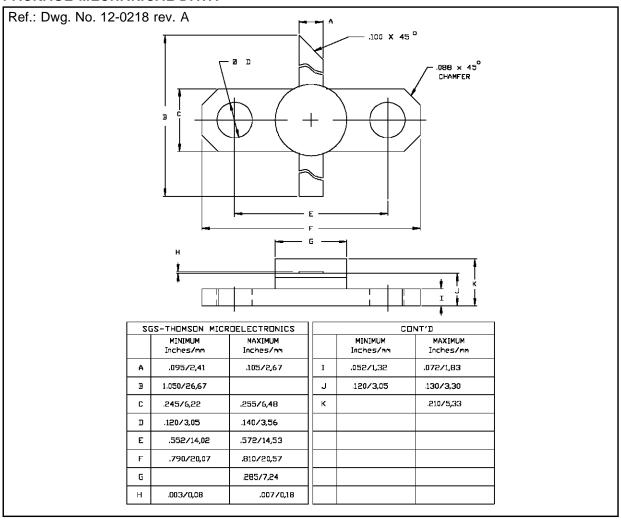
IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA



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