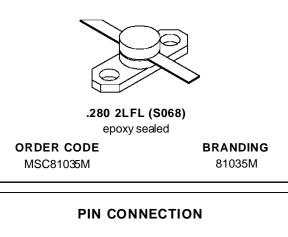


## **MSC81035M**

### **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™ package with internal input matching.

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

<b>ABSOLUTE MAXIMUM RATINGS</b>	$(T_{case} = 25^{\circ}C)$
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Symbol	Parameter	Value	Unit		
PDISS	Power Dissipation <sup>*</sup> $(T_C \le 100^{\circ}C)$	150	W		
lc	Device Current* 3.0				
Vcc	Collector-Supply Voltage*	55	V		
TJ	Junction Temperature (Pulsed RF Operation)	250	°C		
T <sub>STG</sub>	Storage Temperature	– 65 to +200	°C		

#### THERMAL DATA

R <sub>TH(j-c)</sub> Junction-Case Thermal Resistance*	1.0	°C/W
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\*Applies only to rated RF amplifier operation

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

#### MSC81035M

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

#### STATIC

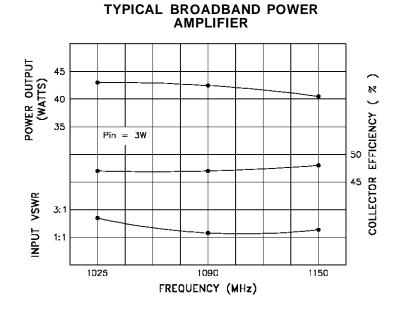
Symbol	Test Conditions	Value			Unit		
	Test conditions		Min.	Тур.	Max.		
BV <sub>CBO</sub>	I <sub>C</sub> = 10 mA	$I_E = 0 mA$		65	_		V
BVEBO	$I_E = 1 \text{ mA}$	$I_C = 0 \text{ mA}$		3.5	—		V
BVCER	I <sub>C</sub> = 10 mA	$R_{BE} = 10 \ \Omega$		65			V
ICES	$V_{BE} = 0 V$	$V_{CE} = 50 V$		_	_	5	mA
h <sub>FE</sub>	$V_{CE} = 5 V$	$I_C = 500 \text{ mA}$		15		120	

#### DYNAMIC

Symbol	Test Conditions			Value			Unit
Symbol				Min.	Тур.	Max.	Unit
Роит	f = 1025 - 1150 MHz	$P_{IN}=3.0\ W$	$V_{CC} = 50 V$	35	40	—	W
ης	f = 1025 - 1150 MHz	$P_{IN}=3.0\ W$	$V_{CC} = 50 V$	40	_	—	%
PG	f = 1025 - 1150 MHz	$P_{IN}=3.0\ W$	$V_{CC} = 50 V$	10.7	11.2		dB

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

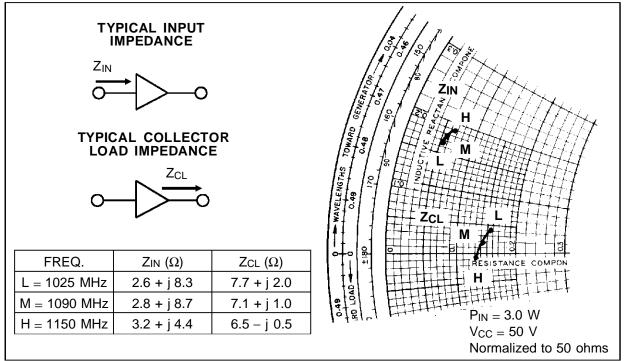
#### TYPICAL PERFORMANCE



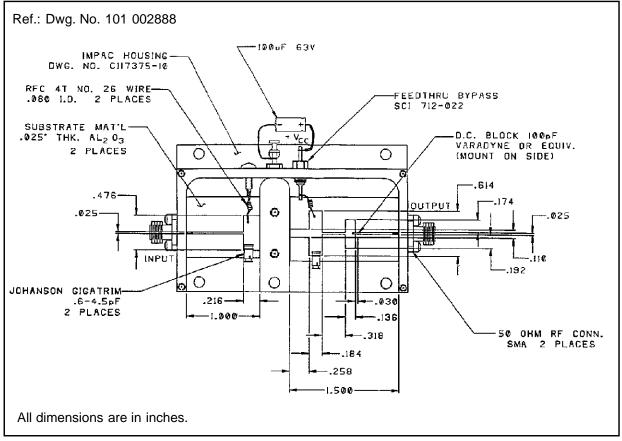


#### MSC81035M

#### IMPEDANCE DATA

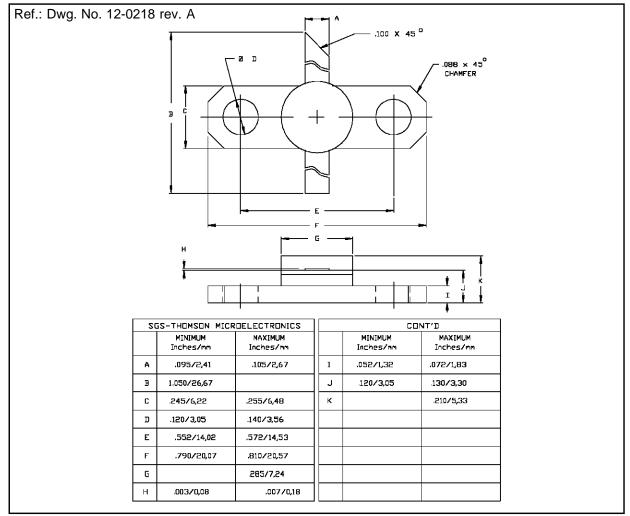


#### **TEST CIRCUIT**





#### PACKAGE MECHANICAL DATA



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