

**DESCRIPTION**

The MS2176 is a gold metallized silicon NPN pulse power transistor. The MS2176 is designed for applications requiring high peak power and low duty cycles within the frequency range of 400 – 500 MHz.

**IMPORTANT:** For the most current data, consult *MICROSEMI*'s website: <http://www.microsemi.com>

**KEY FEATURES**

- 350 Watts @ 10 $\mu$ Sec Pulse Width, 10% Duty Cycle
- 300 Watts @ 250 $\mu$ Sec Pulse Width 10% Duty Cycle
- 9.5 dB Min. Gain
- Refractory Gold Metallization
- Emitter Ballasting And Low Thermal Resistance For Reliability and Ruggedness
- Infinite VSWR Capability At Specified Operating Conditions

**ABSOLUTE MAXIMUM RATINGS (T<sub>CASE</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CES</sub>	Collector-Emitter Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>C</sub>	Device Current	21.6	A
P <sub>DISS</sub>	Power Dissipation	875	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

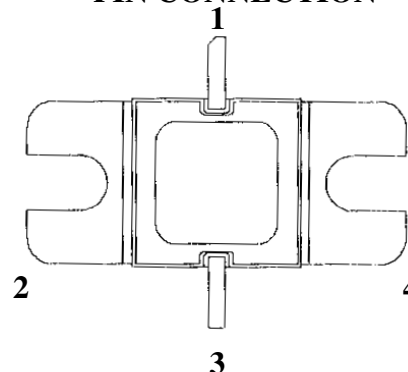
**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	0.2	°C/W
----------------------	----------------------------------	-----	------

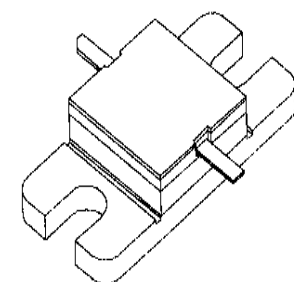
**APPLICATIONS/BENEFITS**

- UHF Pulsed Applications

**PIN CONNECTION**



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



**.400 X .400 2LFL (M106)  
hermetically sealed**

**STATIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

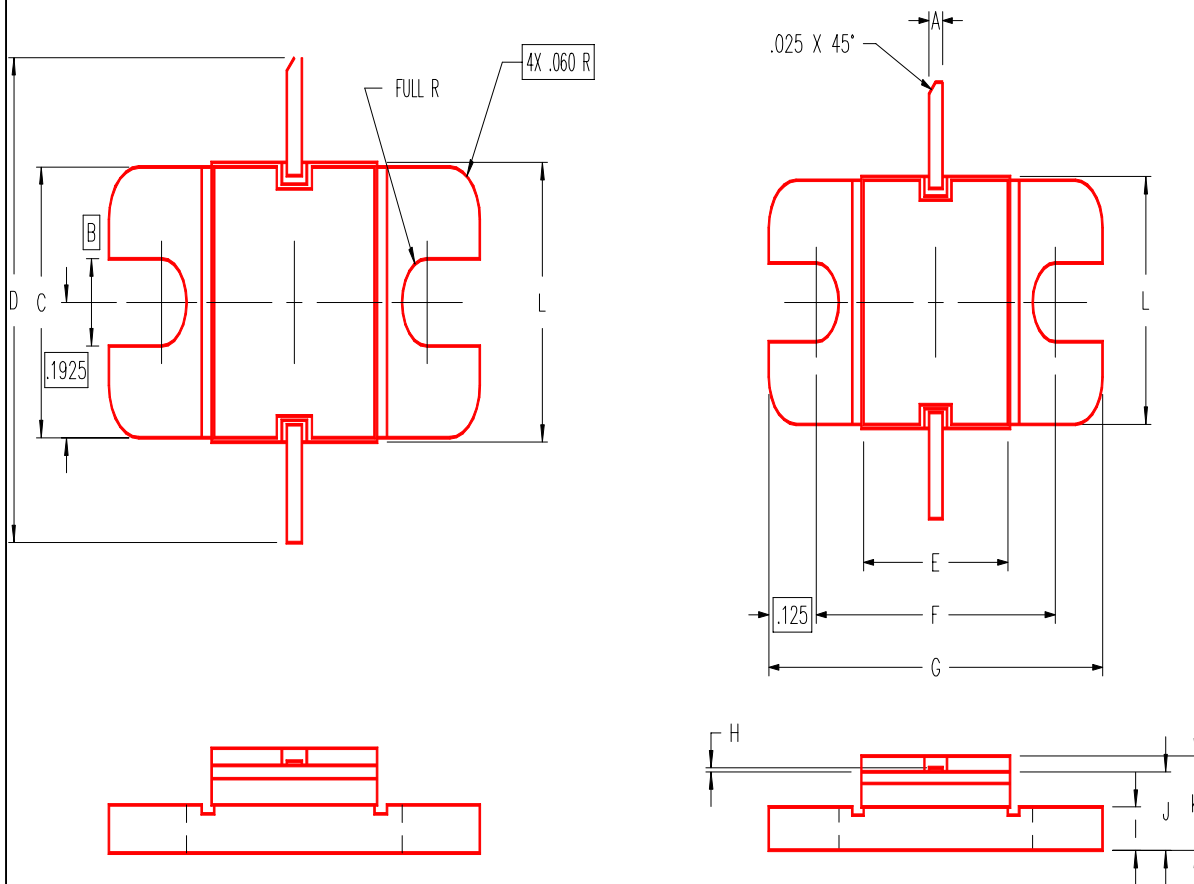
Symbol	Test Conditions			MS2176			Units
				Min.	Typ.	Max.	
<b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub> = 50 mA</b>	<b>I<sub>E</sub> = 0 mA</b>	65	—	—	V	
<b>BV<sub>CES</sub></b>	<b>I<sub>C</sub> = 50 mA</b>	<b>V<sub>BE</sub> = 0 V</b>	65	—	—	V	
<b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub> = 50 mA</b>	<b>I<sub>B</sub> = 0 mA</b>	28	—	—	V	
<b>BV<sub>EBO</sub></b>	<b>I<sub>E</sub> = 10 mA</b>	<b>I<sub>C</sub> = 0 mA</b>	3.5	—	—	V	
<b>I<sub>CES</sub></b>	<b>V<sub>CB</sub> = 30 V</b>	<b>I<sub>E</sub> = 0 mA</b>	—	—	7.5	mA	
<b>h<sub>FE</sub></b>	<b>V<sub>CE</sub> = 5 V</b>	<b>I<sub>C</sub> = 5 A</b>	10	—	100	—	

**DYNAMIC ELECTRICAL SPECIFICATIONS (T<sub>CASE</sub> = 25°C)**

Symbol	Test Conditions			MS2176			Units
				Min.	Typ.	Max.	
<b>P<sub>OUT</sub></b>	<b>f = 425 MHz</b>	<b>P<sub>IN</sub> = 33.5 W</b>	<b>V<sub>CE</sub> = 40 V</b>	300	—	—	W
<b>G<sub>p</sub></b>	<b>f = 425 MHz</b>	<b>P<sub>IN</sub> = 300 W</b>	<b>V<sub>CE</sub> = 40 V</b>	9.5	—	—	dB
<b>η<sub>C</sub></b>	<b>f = 425 MHz</b>	<b>P<sub>IN</sub> = 25 W</b>	<b>V<sub>CE</sub> = 40 V</b>	55	—	—	%

Note: Pulse Width = 250μSec, Duty Cycle = 10%

PACKAGE STYLE M106



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.045/1,14	.055/1,40	I	.055/1,40	.065/1,65
B	.125/3,18		J	.105/2,67	.125/3,18
C	.380/9,65	.390/9,91	K		.170/4,32
D	.710/18,03		L	.392/9,96	.402/10,29
E	.392/9,96	.402/10,29			
F	.645/16,38	.655/16,64			
G	.895/22,73	.905/22,99			
H	.002/0,05	.006/0,15			



MS2176

RF & MICROWAVE TRANSISTORS

PRODUCT PREVIEW

WWW.MICROSEMI.COM

NOTES