



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SXM7001  
 thru  
 SXM7006**

**PIN DIODE  
 RF POWER SWITCHING  
 AND ATTENUATOR**

**Designer's Data Sheet**

**Part Number/Ordering Information <sup>1/</sup>**  
**SXM70**                     

    L    **Screening <sup>2/</sup>**  
               = Not Screened  
           TX = TX Level  
           TXV = TXV Level  
           S = S Level

    L    **Package Type**  
               = Axial Leaded  
           SMS = Surface Mount Square Tab  
           C = Case Style C  
           V = Isolated Ministud V

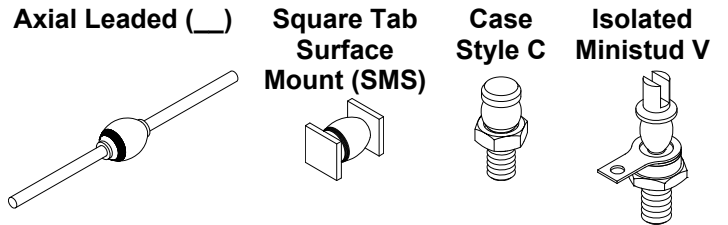
    L    **Voltage Range**  
           01 = 100V  
           02 = 200V  
           06 = 600V

- FEATURES:**
- Operating Frequency from HF to 3 Ghz
  - Voltage Ratings to 600 Volts
  - High Power Handling
  - 15kW Peak Pulse Power Dissipation
  - Long Carrier Life Time Design
  - Passivated Chip for very low Leakage Current
  - Hermetically Sealed
  - Axial, Surface Mount, Case Style C and Ministud Version Available – Contact Factory
  - Custom Design Upon Request
  - TX, TXV, and Space Level Screening Available <sup>2/</sup>

<b>MAXIMUM RATINGS<sup>3/</sup></b>		<b>Symbol</b>	<b>Value</b>	<b>Units</b>
<b>Reverse Voltage</b>	SXM7001	<b>V<sub>R</sub></b>	100	<b>Volts</b>
	SXM7002		200	
	SXM7006		600	
<b>Power Dissipation</b>	Axial Leaded <sup>4/</sup>	<b>P<sub>D</sub></b>	5	<b>Watts</b>
	Axial Leaded <sup>5/</sup>		1.5	
	SMS <sup>6/</sup>		8.5	
	Case Style C		9	
<b>Thermal Resistance</b>	Isolated Ministud	8.5	<b>°C/W</b>	
	Axial Leaded <sup>4/</sup>	<b>R<sub>θJL</sub></b>		30
	Axial Leaded <sup>5/</sup>	<b>R<sub>θJL</sub></b>		---
	SMS <sup>6/</sup>	<b>R<sub>θJE</sub></b>		17
	Case style C	<b>R<sub>θJC</sub></b>		16
<b>Peak Power Dissipation</b>	100us	<b>PP<sub>D</sub></b>	0.3	<b>kW</b>
	1us		15	
<b>Operating and Storage Temperature</b>		<b>T<sub>OP</sub> &amp; T<sub>stg</sub></b>	-65 to +175	<b>°C</b>

**NOTES:**

- 1/ For ordering information, price, operating curves, and availability-contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request.
- 3/ @25°C unless otherwise specified
- 4/ 1/4" total length to 25°C contact/derate linearly to 175°C for TL>25°C
- 5/ Free air
- 6/ Junction to End Tab, de-rate linearly to 175°C for Te>25°C





**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

**SXM7001  
thru  
SXM7006**

<b>ELECTRICAL CHARACTERISTICS<sup>3/</sup></b>		<b>Symbol</b>	<b>Min</b>	<b>Typ</b>	<b>Max</b>	<b>Unit</b>
<b>Reverse Breakdown Voltage</b> (at 10 $\mu$ A)	SXM7001	<b>B<sub>VR</sub></b>	100	--	--	<b>V</b>
	SXM7002		200	--	--	
	SXM7006		600	--	--	
<b>Forward Voltage Drop</b> (at I <sub>F</sub> = 0.1A)		<b>V<sub>F</sub></b>	--	--	1.0	<b>V</b>
<b>Reverse Leakage Current</b> (at rated V <sub>R</sub> )		<b>I<sub>R</sub></b>	--	--	1	<b><math>\mu</math>A</b>
<b>Junction Capacitance</b> (V <sub>R</sub> = 100V, 1MHz)		<b>C<sub>J</sub></b>	--	--	0.7	<b>pF</b>
<b>Carrier Lifetime</b> (at I <sub>F</sub> = 10 mA)		<b><math>\tau</math></b>	3	--	--	<b><math>\mu</math>sec</b>
<b>Intrinsic Region Width</b>		<b>W</b>	--	175	--	<b><math>\mu</math>m</b>
<b>Series Resistance</b> (I <sub>F</sub> = 100mA, 100MHz)		<b>R<sub>S</sub></b>	--	--	0.8	<b><math>\Omega</math></b>
<b>RF Parallel Resistance</b> (V <sub>R</sub> = 100V, 100MHz)		<b>R<sub>P</sub></b>	200	--	--	<b>K<math>\Omega</math></b>

**NOTES:**

- 1/** For ordering information, price, operating curves, and availability- contact factory.
- 2/** Screening based on MIL-PRF-19500. Screening flows available on request.
- 3/** @25°C unless otherwise specified
- 4/** 1/4" total length to 25°C contact/derate linearly to 175°C for TL>25°C
- 5/** Free air
- 6/** Junction to End Tab, de-rate linearly to 175°C for Te>25°C



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SXM7001  
 thru  
 SXM7006**

DIMENSIONS (inches)		
	MIN	MAX
<b>A</b>	—	0.090
<b>B</b>	—	0.190
<b>C</b>	0.975	—
<b>D</b>	0.025	0.029

**Case Outline: Axial**

DIMENSIONS (inches)		
	MIN	MAX
<b>A</b>	.093	.100
<b>B</b>	—	.250
<b>C</b>	.022	.028
<b>D</b>	.002	—

**Case Outline: SMS**

**Note: Dimensions prior to soldering.**

**Case Outline: Case Style C**

Labels: CATHODE, ANODE, #4-40 UNC-2A, Ø.159, .154, .193 HEX, .183.

**Case Outline: Isolated Ministud V**

Labels: BERILIA INSULATING DISK, FULL THD TO WITHIN .060" OF SHOULDER, #6-32 UNC-2A GOLD PLATED STUD, R.005 MAX, CATHODE TERMINAL GOLD PLATED, ANODE TERMINAL GOLD PLATED, Ø.187 MAX, .135, .115, Ø.072, .230, .170, .330 MAX, .255, .245 HEX.