



# Solid State Devices, Inc.

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## SHM15F-SHM140F and SHM15FSMS – SHM40FSMS

### Designer's Data Sheet

#### Part Number / Ordering Information <sup>1/</sup>

SHM \_\_\_ F \_\_\_

- └─ Screening<sup>2/</sup> = None  
     TX = TX Level  
     TXV = TXV Level  
     S = S Level
- └─ Package  
     \_\_\_ = Axial Leaded  
     SMS = Surface Mount Square Tab
- └─ Recovery Time  
     F = Fast Recovery
- └─ Voltage
 

15 = 1500 V	60 = 6000 V
20 = 2000 V	80 = 8000 V
25 = 2500 V	100 = 10000 V
30 = 3000 V	120 = 12000 V
40 = 4000 V	140 = 14000 V
50 = 5000 V	

**50-250 mAmp  
1500 – 14000 VOLTS  
FAST RECOVERY  
HIGH VOLTAGE  
RECTIFIER**

#### FEATURES:

- Fast Recovery: 150-200 nsec Maximum
- PIV to 14000 Volts
- Hermetically Sealed Axial Lead Package
- Void-Free Construction
- Metallurgically Bonded
- 175°C Maximum Operating Temperature
- Also Available in Standard and Ultra Fast Recovery Versions. Contact Factory.
- TX, TXV, and Space Level Screening Available<sup>2/</sup>

### ELECTRICAL CHARACTERISTICS

Part Number	Peak Inverse Voltage	Average Rectifier Current			Maximum Reverse Current	Maximum Forward Voltage	Maximum Surge Current (1 Cycle)	Maximum Reverse Recovery Time	Maximum Junction Capacitance	Typical Thermal Impedance		
Symbol	PIV	I <sub>0</sub>			IR @ PIV	V <sub>F</sub> <sup>4/</sup>	I <sub>FSM</sub>	t <sub>RR</sub> <sup>7/</sup>	C <sub>J</sub>	θ <sub>JL</sub>	θ <sub>JE</sub>	
Units	Volts	mA			µA	Volts	Amps	nsec	pF	°C/W		
Conditions	Volts	25°C	100°C		25°C	100°C	25°C	25°C	25°C	V <sub>R</sub> = 100V f <sub>T</sub> = 1MHZ	SHM	SMS
			Axial	SMS								
SHM15F	1500	250	160	185	1.0	25	8.0	15	150	8	65	55
SHM20F	2000	250	160	185	1.0	25	8.0	15	150	8	65	55
SHM25F	2500	250	160	185	1.0	25	8.0	15	150	8	65	55
SHM30F	3000	150	100	110	1.0	25	12	10	150	4	65	55
SHM40F	4000	150	100	110	1.0	25	12	10	150	4	65	55
SHM50F	5000	150	100	110	1.0	25	12	10	150	4	65	55
SHM60F	6000	100	65	75	1.0	25	18	5	150	2	65	55
SHM80F	8000	100	65	75	1.0	25	18	5	150	2	65	55
SHM100F	10000	100	65	75	1.0	25	18	5	150	2	65	55
SHM120F	12000	100	65	75	1.0	25	20	5	150	2	65	55
SHM140F	14000	50	35	40	1.0	25	24	1	200	2	95	85

<sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability – Contact Factory.

<sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.

<sup>3/</sup> Operating and testing over 10,000 V/inch may require encapsulation or immersion in a suitable dielectric material.

<sup>4/</sup> I<sub>F</sub> = I<sub>0</sub>. Max. forward voltage measured with instantaneous forward pulse of 300µsec minimum.

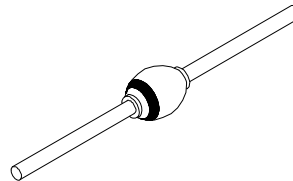
<sup>5/</sup> Max. lead/end tab temp for soldering is 250°C, 3/8" from the case for 5 sec maximum.

<sup>6/</sup> Operating and storage temperature: -65°C to +175°C.

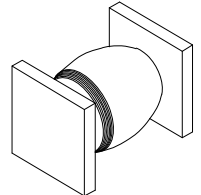
<sup>7/</sup> Reverse Recovery Test Conditions: I<sub>F</sub>=50mA, I<sub>R</sub>=100mA, I<sub>RR</sub>=25mA, T<sub>A</sub>=25°C.

<sup>8/</sup> Consult manufacturing for operating curves.

Axial



SMS



**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: RV0011C**

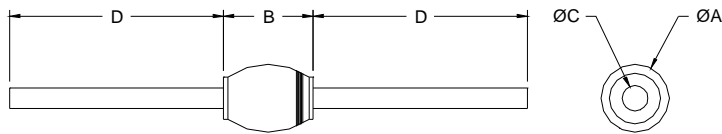
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**PACKAGE OUTLINE: Axial**



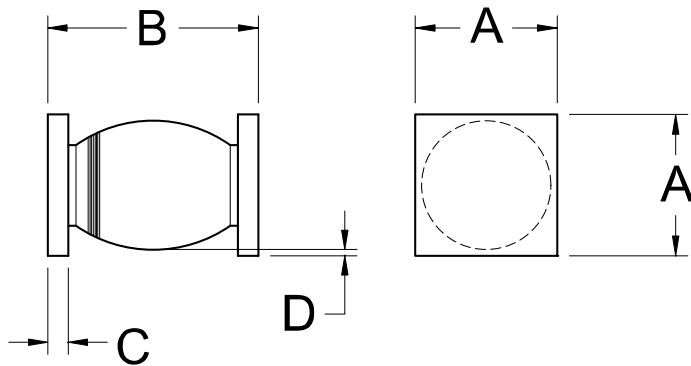
**SHM15F-SHM140F  
 and  
 SHM15FSMS – SHM40FSMS**

DIMENSIONS: SHM15-50		
DIM	MIN	MAX
A	---	.140"
B	---	.300"
C	.025"	.033"
D	1.00"	---

DIMENSIONS: SHM60-140		
DIM	MIN	MAX
A	---	.140"
B	---	.400"
C	.025"	.033"
D	1.00"	---

**PACKAGE OUTLINE: Surface Mount Square Tab**



DIMENSIONS: SHM15-50		
DIM	MIN	MAX
A	.127"	.140"
B	.280"	.320"
C	.022"	.028"
D	.002"	---

DIMENSIONS: SHM60-140		
DIM	MIN	MAX
A	.127"	.140"
B	.360"	.450"
C	.022"	.028"
D	.002"	---

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