



**Solid State Devices, Inc.**

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# SFS07050 thru SFS07400 Series

## 7 AMP SILICON CONTROLLED RECTIFIER 50 – 400 VOLTS

Designer's Data Sheet	
Part Number/Ordering Information <sup>1/</sup>	
SFS07	
┌───┐	Screening <sup>2/</sup>
├───┤	── = Not Screened
├───┤	TX = TX Level
├───┤	TXV = TXV Level
├───┤	S = S Level
├───┤	= TO-5
├───┤	S.5 = SMD.5
├───┤	G = Cerpack
└───┘	Package
Voltage/Family	
050 = 50 V	250 = 250 V
100 = 100 V	300 = 300 V
200 = 200 V	400 = 400 V

- FEATURES:**
- Low-Level Gate Characteristics
  - $I_{GT} = 20 \mu A$  (typical) @ 25°C
  - Low Holding Current  $I_H = 1.25 \text{ mA}$  (typ) @ 25°C
  - Anode Common to Case
  - Hermetically Sealed

MAXIMUM RATINGS	Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage</b>	SFS07050	50	<b>Volts</b>
	SFS07100	100	
	SFS07200	200	
	SFS07250	250	
	SFS07300	300	
	SFS07400	400	
<b>Non-Repetitive Peak Reverse Blocking Voltage</b> $t < 5.0 \text{ ms}$	SFS07050	75	<b>Volts</b>
	SFS07100	150	
	SFS07200	300	
	SFS07250	350	
	SFS07300	400	
	SFS07400	500	
<b>RMS On-State Current</b> All Conduction Angles	$I_{T(RMS)}$	7	<b>Amps</b>
<b>Peak Non-Repetitive Surge Current</b> One Cycle, 60 Hz, $T_C = 80^\circ C$	$I_{TSM}$	80	<b>Amps</b>
<b>Peak Gate Power</b>	$P_{GM}$	20	<b>Watts</b>
<b>Average Gate Power</b>	$P_{G(AV)}$	0.5	<b>Watts</b>
<b>Peak Gate Current</b>	$I_{GM}$	1	<b>Amps</b>
<b>Peak Gate Voltage</b>	$V_{GM}$	6.0	<b>Volts</b>
<b>Operating Junction Temperature Range</b>	$T_J$	-55 to +125	<b>°C</b>
<b>Storage Temperature Range</b>	$T_{stg}$	-55 to +150	<b>°C</b>
<b>Thermal Resistance, Junction to Case</b>	TO-5	10 (6 typ)	<b>°C/W</b>
	SMD.5, Cerpack	3.5 (2 typ)	

**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/ Unless otherwise specified, all electrical characteristics @25°C.

SMD.5 (S.5)    Cerpack (G)    TO-5 ( )





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ELECTRICAL CHARACTERISTICS		Symbol	Min	Typical	Max	Unit
<b>Peak Reverse Blocking Current</b>	Rated $V_{RRM}$ , $T_C = 25^\circ C$ Rated $V_{RRM}$ , $T_C = 110^\circ C$	$I_{RRM}$	—	0.2 25	1 500	$\mu A$
<b>Peak Forward Blocking Current</b>	Rated $V_{RRM}$ , $T_C = 25^\circ C$ Rated $V_{RRM}$ , $T_C = 110^\circ C$	$I_{DRM}$	—	0.2 40	1 750	$\mu A$
<b>Peak On-State Voltage</b>	$I_F = 7 A$ , $T_C = 25^\circ C$	$V_{TM}$	—	2.1	2.2	Volts
<b>Gate Trigger Current</b>	$V_D = 6 V_{DC}$ , $R_L = 100 \Omega$ , $T_C = 25^\circ C$	$I_{GT}$	—	20	200	$\mu A$
<b>Gate Trigger Voltage</b>	$V_D = 6 V_{DC}$ , $R_L = 100 \Omega$ , $T_C = 25^\circ C$	$V_{GT}$	—	0.51	0.8	Volts
<b>Gate Controlled Turn-on Time</b>	$I_G = 10 mA$ , $T_C = 25^\circ C$	$t_{GT}$	—	0.6	1.2	$\mu sec$
<b>Critical Rate of Rise of Off-State Voltage</b>	Open gate, $V = 100 V$ , $T_C = 100^\circ C$	$dV/dt$	100	270	-	$V/\mu sec$
<b>Holding Current</b>	$V_D = 6 V_{DC}$ , $T_C = 25^\circ C$	$I_{HO}$	-	1.25	10	mA

NOTES: \* RGK current is not included in measurement

Case Outline: TO-5	Case Outline: SMD.5																			
	<table border="1"> <thead> <tr> <th>PACKAGE</th> <th>PIN 1 / Bottom Pad:</th> <th>PIN 2:</th> <th>PIN 3:</th> </tr> </thead> <tbody> <tr> <td>TO-5</td> <td>CATHODE</td> <td>GATE</td> <td>ANODE</td> </tr> <tr> <td>SMD.5</td> <td>ANODE</td> <td>CATHODE</td> <td>GATE</td> </tr> <tr> <td>Cerpack</td> <td>ANODE</td> <td>CATHODE</td> <td>GATE</td> </tr> </tbody> </table>	PACKAGE	PIN 1 / Bottom Pad:	PIN 2:	PIN 3:	TO-5	CATHODE	GATE	ANODE	SMD.5	ANODE	CATHODE	GATE	Cerpack	ANODE	CATHODE	GATE			
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Cerpack	ANODE	CATHODE	GATE																	
<p>*For information on curves, contact the Factory Representative for Engineering Assistance.</p>																				

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

DATA SHEET #: SCR011C

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