

## SFS2326 THRU SFS2329

1.6 AMP

SILICON CONTROLLED RECTIFIER

200 - 400 VOLTS

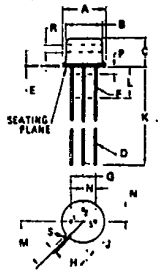
SSDI

T-25-13

14830 VALLEY VIEW  
LA MIRADA, CA. 90638  
(213) 921-9660  
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## CASE STYLE TO-5

## FEATURES



1. CATHODE  
2. GATE  
3. ANODE (CONNECTED TO CASE)

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.91	9.40	0.350	0.370
B	7.75	8.31	0.305	0.328
C	6.10	6.40	0.240	0.252
D	0.40	0.53	0.016	0.021
E	0.22	0.31	0.009	0.012
F	0.40	0.53	0.016	0.021
G	5.91	6.40	0.233	0.252
H	0.71	0.84	0.028	0.033
J	0.75	1.14	0.029	0.045
K	36.18	-	1.421	-
L	8.91	-	0.350	-
M	45.7	50.8	1.8	2.0
N	2.54	3.05	0.100	0.120
P	11.37	-	0.448	-
Q	2.54	-	0.100	-
R	-	0.76	-	0.030

- ▶ LOW-LEVEL GATE CHARACTERISTICS
- ▶ IGT = 200uA (MAX) @ 25C
- ▶ LOW HOLDING CURRENT I<sub>H</sub> = 2mA MAX @ 25C
- ▶ ANODE COMMON TO CASE
- ▶ GLASS TO METAL BOND FOR MAXIMUM HERMETIC SEAL

## MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Forward and Reverse Blocking Voltage	VDRM and VRRM	200 250 300 400	Volts
Non-repetitive Peak Reverse Blocking Voltage (t <sub>≤</sub> 5.0ms. Notes 2 and 3)	VRSM	300 350 400 500	Volts
RMS On-State Current (All Conduction Angles)	IT (RMS)	1.6	Amps
Average On-State Current TC=85C TA=30C	IT (AV)	1.0 0.45	Amps
Peak Non-Repetitive Surge Current (One Cycle, 60Hz, TC = 80C)	ITSM	15	Amps
Peak Gate Power	PGM	0.1	Watt
Average Gate Power	PG (AV)	0.01	Watt
Peak Gate Current	IGM	0.1	Amps
Peak Gate Voltage	VGM	6.0	Volts
Operating Junction Temperature Range	TJ	-65 to +125	C
Storage Temperature Range	Tstg	-65 to +150	C
Lead Solder Temperature (>1/16" from case, 10s max)	-	+230	C

**ELECTRICAL CHARACTERISTICS** (TC = 25C, RGK = 1000 ohms)

CHARACTERISTIC	SYMBOL	MIN	MAX	UNITS
Peak Reverse Blocking Current (Rated VRRM, TJ = 125C)	IRRM	-	100	uA
Peak Forward Blocking Current	IDRM	-	100	uA
Peak On-State Voltage (ITM = 1.0A Peak) (ITM = 3.14A Peak, TC = 85C)	VTM	- -	1.5 2.0	Volts
Gate Trigger Current (Note 1) (VD = 6.0Vdc, RL = 100 ohms) (VD = 6.0Vdc, RL = 100 ohms, TC = -65C)	IGT	- -	200 350	uA
Gate Trigger Voltage (VD = 6.0Vdc, RL = 100 ohms) (VD = 6.0Vdc, RL = 100 ohms, TC = -65C) (VD = Rated VDRM, RL = 100ohms, TJ = 125C)	VGT	- 0.1	0.8 1.0 -	Volts
Holding Current (VD = 6.0Vdc) (VD = 6.0Vdc, TC = -65C) (VD = 6.0Vdc, TC = 125C)	IH	- - 0.15	2.0 3.0 -	mA

- Notes: 1. RGK current is not included in measurement.  
 2. Thyristor devices shall not be tested with a constant current source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.  
 3. Thyristor devices shall not have a positive bias applied to the gate concurrently with a negative potential applied to the anode.

**CURRENT DERATING**

FIGURE 1 - CASE TEMPERATURE

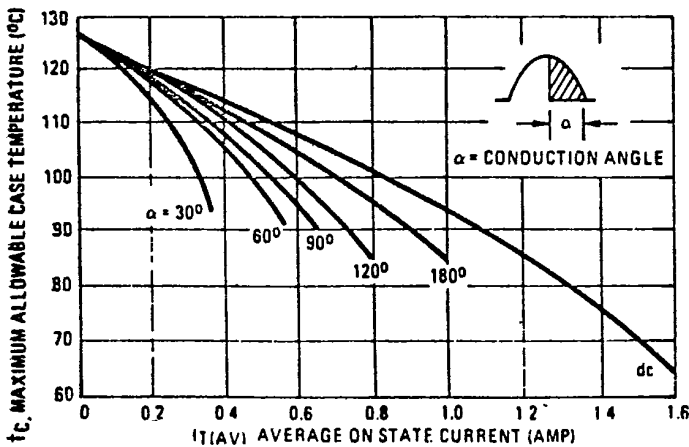
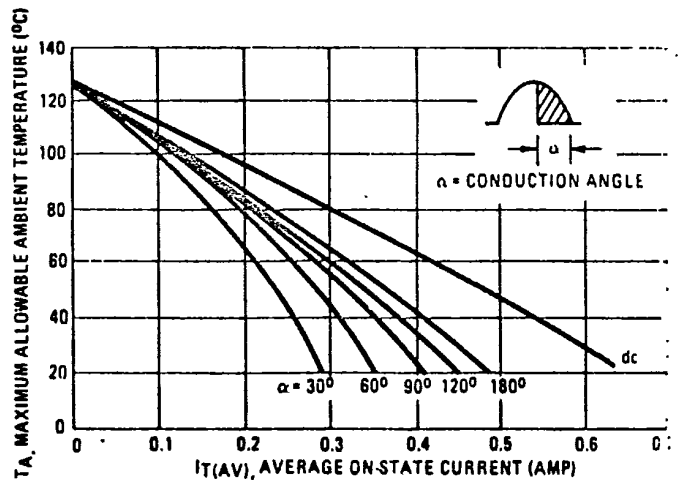


FIGURE 2 - AMBIENT TEMPERATURE



# SPD5823 THRU SPD5825

## 5 AMP

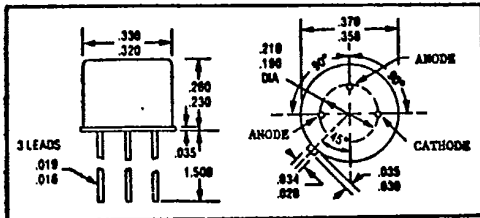
### SCHOTTKY RECTIFIERS

## 20-40 VOLTS



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#### CASE STYLE TO-5



#### FEATURES

- ULTRA LOW LEAKAGE 5mA @ 100°C
- EXTREMELY LOW FORWARD VOLTAGE DROP  
600 mV MAX
- PIV TO 40 VOLTS
- HERMETICALLY SEALED TO-5 PACKAGE
- HIGH SURGE CAPABILITY
- HI REL VERSIONS PROCESSED TO TX, TXV,  
AND S LEVEL

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage and DC Blocking Voltage	$V_{RM} (rep)$ $V_R$		Volts
		SPD5823 SPD5824 SPD5825	20 30 40
RMS Reverse Voltage	$V_r$		Volts
		SPD5823 SPD5824 SPD5825	14 21 28
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60 Hz, Sine Wave, $T_C = 55^\circ C$ )	$I_0$	5.0	Amps
Peak Repetitive Forward Current ( $T_C = 55^\circ C$ , 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)	$I_{FM} (rep)$	15	Amps
Peak Surge Current ( $T_C = 55^\circ C$ , Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)	$I_{FM} (surge)$	500	Amps
Operating and Storage Temperature	$T_J, T_{stg}$	-55 to -150	°C

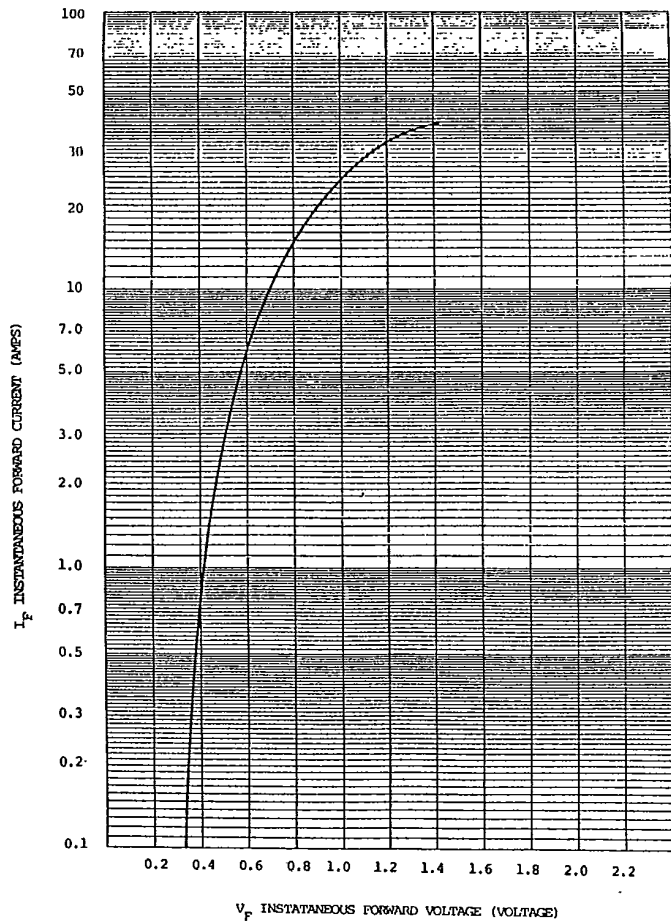
#### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	15	°C/W

**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle ( $I_O$ (Max), 60 Hz Square Wave, $T_C = 55^\circ\text{C}$ )	$V_{F(AV)}$	0.45	Vdc
Max Instantaneous Forward Drop ( $I_F = 5$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse) ( $I_F = 15$ Adc, $T_C = 25^\circ\text{C}$ , 300 $\mu\text{s}$ Pulse)	$V_F$	0.6 0.9	Vdc
Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated $V_R$ , 60Hz, Square Wave, $T_C = 100^\circ\text{C}$ )	$I_{R(AV)}$	5.0	mA <sub>dc</sub>
Max Reverse Leakage Current (Rated $V_R$ , $T_C = 25^\circ\text{C}$ )	$I_R$	500	$\mu\text{A}dc$
Max Junction Capacitance ( $V_R = 10$ V, $T_C = 25^\circ\text{C}$ )	$C_J$	800	pf

**TYPICAL OPERATING CURVES**



# SGB10UF thru SGB35UF

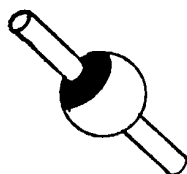
## ULTRA FAST

## HIGH VOLTAGE RECTIFIERS



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### CASE STYLE C



### FEATURES

- ULTRA FAST RECOVERY 60 NS MAX
- PIV TO 3500 VOLTS
- LOW REVERSE LEAKAGE
- HERMETICALLY SEALED
- MONOLITHIC NON-CAVITY CONSTRUCTION
- SUB-MINIATURE PACKAGE
- LOW COST

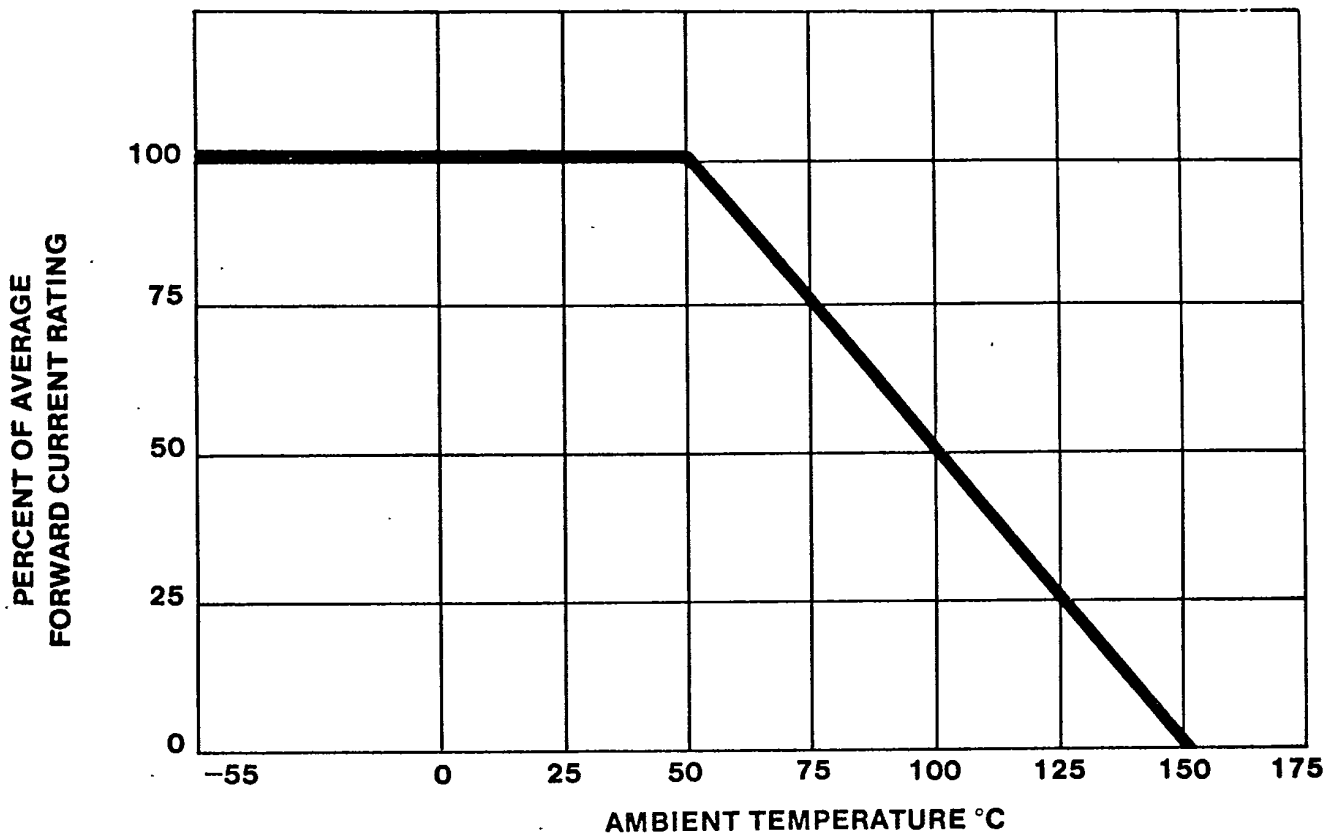
### ELECTRICAL CHARACTERISTICS

TYPE	PEAK INVERSE VOLTAGE (PIV)	REVERSE RECOVERY TIME (T <sub>RR</sub> )	AVERAGE RECTIFIED CURRENT (I <sub>O</sub> )			PEAK 1 CYCLE FORWARD SURGE (I <sub>FSM</sub> )	MAX FORWARD VOLTAGE (V <sub>F</sub> ) @ I <sub>O</sub>	MAX REVERSE CURRENT (I <sub>R</sub> ) @ PIV		MAX JUNCTION CAPACITANCE (C <sub>J</sub> )
			25°C	55°C	100°C			125°C	25°C	
	V	ns	mA	mA	mA	A	V	uA	uA	pf
SGB10UF	1000	60	80	40	20	5	8	.1	10	1.0
SGB15UF	1500	60	80	40	20	5	8	.1	10	1.0
SGB20UF	2000	60	60	30	15	5	8	.1	10	1.0
SGB25UF	2500	60	60	30	15	5	8	.1	10	1.0
SGB30UF	3000	60	60	30	15	5	8	.1	10	1.0
SGB35UF	3500	60	60	30	15	5	8	.1	10	1.0

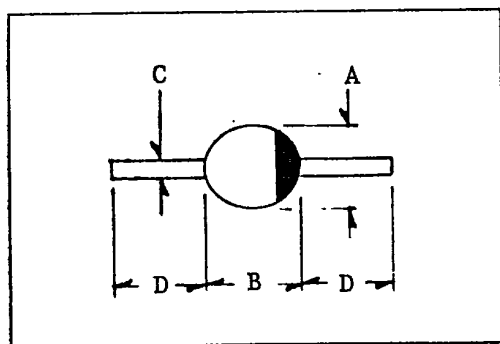
1. Reverse recovery test conditions: I<sub>F</sub> = 50 mA, I<sub>R</sub> = 100 mA, I<sub>RR</sub> = 25 mA, T<sub>A</sub> = 25°C.
2. Operation and testing of devices over 10,000 V/inch may require re-encapsulation or emersion in a suitable dielectric material.
3. Average rectified current ratings require no heat sinking, special mounting, or forced air across the body of the device.
4. Maximum forward voltage measured with instantaneous forward pulse of 8.3 mS.
5. Maximum lead temperature for soldering is 250°C, 3/8 inch from case for 5 seconds maximum.
6. Operating and storage temperature -55°C to +150°C.

NOTE: All specifications subject to change without notice.

MAXIMUM FORWARD CURRENT VS. AMBIENT TEMPERATURE



PHYSICAL DIMENSIONS



KEY TO DIMENSIONS:

(Inches)

- A = .70 - .100
- B = .125 - .180
- C = .021 - .025
- D = 1.00 MIN

REVERSE RECOVERY WAVE FORM

