



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638-5223

Phone: (562) 404-4474 * Fax: (562) 404-1773

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SSR20C180

Designer's Data Sheet

Part Number / Ordering Information ^{1/}

SSR20C 180

- Screening^{2/}
 - = Not Screened
 - TX = TX Level
 - TXV = TXV Level
 - S = S Level
- Package
 - G = Cerpack
 - S.5 = SMD.5
- Voltage
 - 180 = 1800 Volts

20 AMP, 1800 VOLTS SILICON CARBIDE SCHOTTKY RECTIFIER

FEATURES:

- 1800 Volt Silicon Carbide Schottky Rectifier
- Average Output Current: 20 Amps
- No Reverse Recovery
- No Forward Recovery
- No Switching Time Change Over Temperature
- Small Package Size
- TX, TXV, and Space Level Screening Available - Consult Factory

MAXIMUM RATINGS^{3/4/}

	Symbol	Value	Unit
Peak Repetitive and Peak Reverse Voltage SSR20C180	V_{RRM} V_R	1800	V
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave)	I_O	20	A
Operating & Storage Temperature	T_{OP} & T_{STG}	-55 to +175	°C
Maximum Thermal Resistance (Junction to Case)	$R_{\theta JC}$	1.2	°C/W

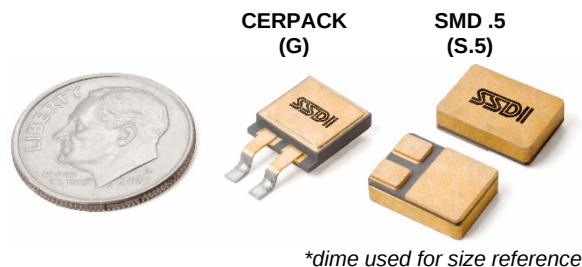
NOTES: * Pulse Test: Pulse Width = 300 μ sec, Duty Cycle = 2%

^{1/} For ordering information, price, 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.

^{4/} For best result, connect the two anode pins together.



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

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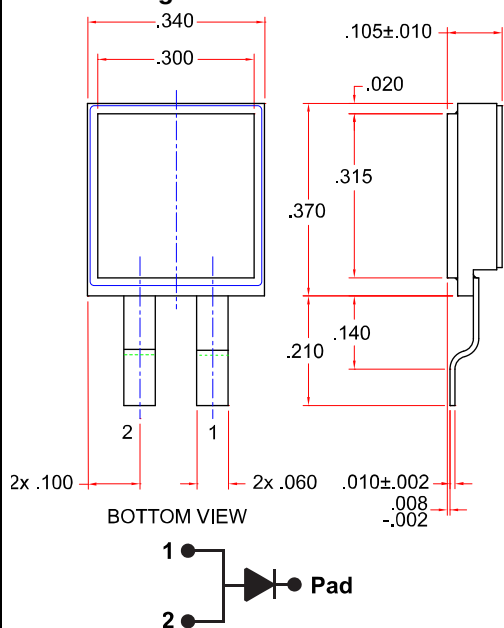
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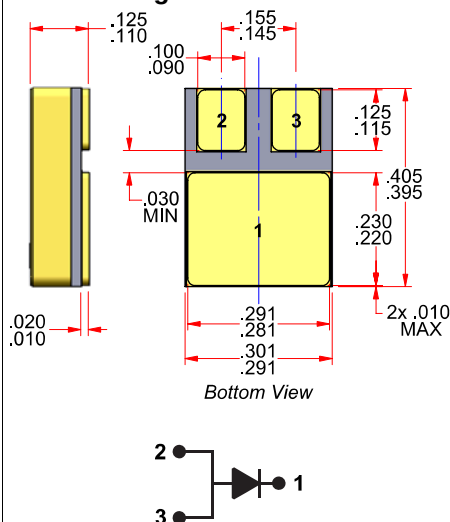
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ELECTRICAL CHARACTERISTICS ^{3/}		Symbol	Min	Typ	Max	Unit
Instantaneous Forward Voltage Drop (T _A = 25°C, 300 - 500 µsec pulse)	I _F = 2 A	V _{F1}	—	1.02	—	V _{DC}
	I _F = 5 A	V _{F2}	—	1.20	1.40	
	I _F = 10 A	V _{F3}	—	1.47	1.65	
	I _F = 20 A	V _{F4}	—	2.00	2.25	
Instantaneous Forward Voltage Drop (T _A = 100°C, 300 - 500 µsec pulse)	I _F = 2 A	V _{F5}	—	1.01	—	V _{DC}
	I _F = 5 A	V _{F6}	—	1.30	—	
	I _F = 10 A	V _{F7}	—	1.77	—	
	I _F = 20 A	V _{F8}	—	2.72	—	
Instantaneous Forward Voltage Drop (T _A = 150°C, 300 - 500 µsec pulse)	I _F = 2 A	V _{F9}	—	1.03	—	V _{DC}
	I _F = 5 A	V _{F10}	—	1.40	—	
	I _F = 10 A	V _{F11}	—	2.10	—	
	I _F = 20 A	V _{F12}	—	3.32	—	
Instantaneous Forward Voltage Drop (T _A = 175°C, 300 - 500 µsec pulse)	I _F = 2 A	V _{F13}	—	1.05	—	V _{DC}
	I _F = 5 A	V _{F14}	—	1.60	1.80	
	I _F = 10 A	V _{F15}	—	2.30	2.50	
	I _F = 20 A	V _{F16}	—	3.55	3.75	
Reverse Leakage Current (Rated V _R , 300 µsec pulse minimum)	T _A = 25°C	I _{R1}	—	20	200	µA
	T _A = 100°C	I _{R2}	—	35	—	
	T _A = 125°C	I _{R3}	—	50	—	
	T _A = 150°C	I _{R4}	—	75	—	
	T _A = 175°C	I _{R5}	—	100	750	
Total Capacitive Charge (Rated V _R , I _F = 10 A, T _A = 25°C, di/dt = 200 A/µs)		Q _C	—	138	—	nC
Junction Capacitance (f = 1 MHz, T _A = 25°C)	V _R = 0 V	C _J	—	850	—	pF
	V _R = 10 V		—	325	—	
	V _R = 800 V		—	68	—	

Package Outline: CERPAC



Package Outline: SMD.5



NOTES: * Pulse Test: Pulse Width = 300 µsec, Duty Cycle = 2%
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 2/ For package outlines contact factory.
 3/ Unless otherwise specified, all electrical characteristics @ 25°C.
 4/ For best result, connect the two anode pins together.
Available Part Numbers:
 SSR20C180G, SSR20C180S.5

PIN ASSIGNMENT

Package	Pin 1	Pin 2	Pin 3
Cerpack	Anode	Anode	Cathode (bottom pad)
SMD.5	Cathode	Anode	Anode

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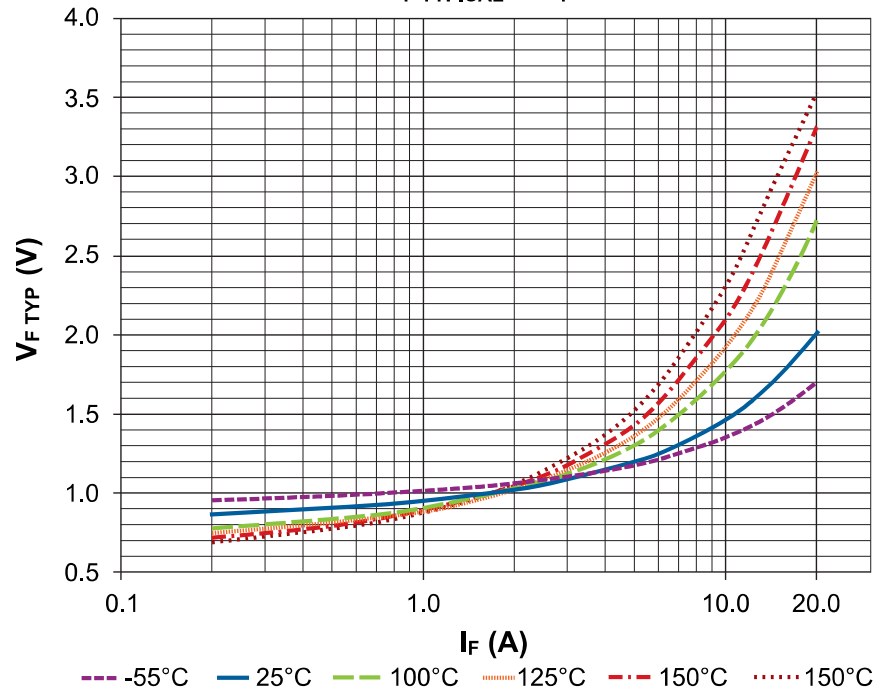
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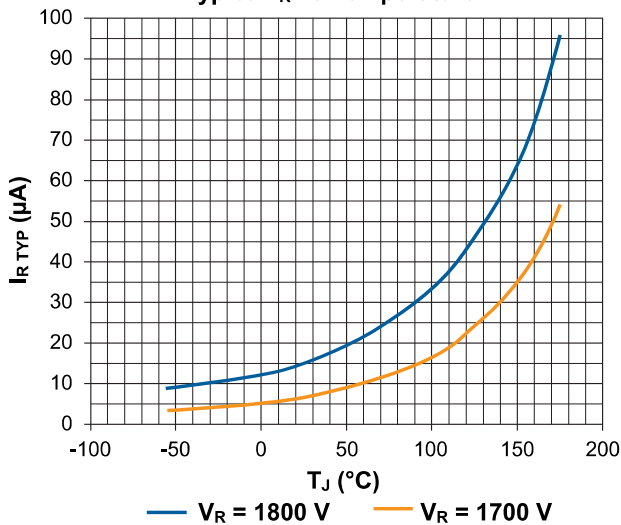
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V_F TYPICAL VS I_F



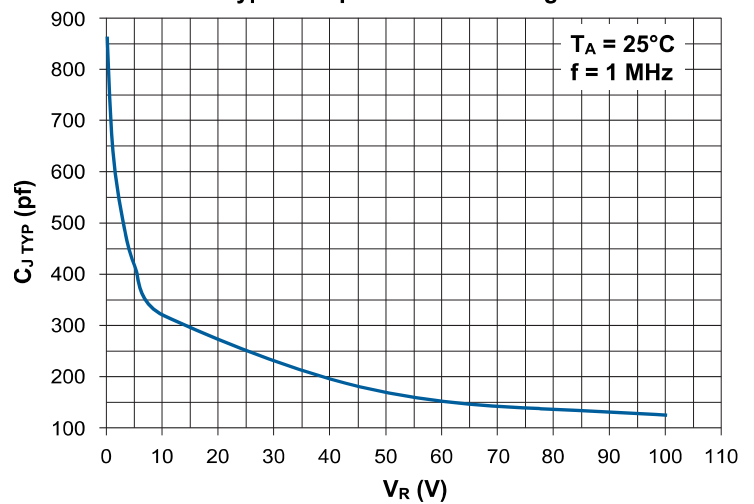
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Typical I_R vs Temperature



SSR20C180

Typical Capacitance vs Voltage



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