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

SDR12U080 thru SDR12U120

12 AMP ULTRA FAST RECTIFIER

800 - 1200 VOLTS

50 nsec

Designer's Data Sheet

Part Number/Ordering Information [1/]

SDR12U ___ ___ ___

- **Screening** [2/]
  - ___ = Not Screened
  - TX = TX Level
  - TXV = TXV Level
  - S = S Level
- **Package**
  - G= Cerpack
  - S.5 = SMD.5
- **Family/Voltage**
  - 080 = 800V
  - 090 = 900V
  - 100 = 1000V
  - 110 = 1100V
  - 120 = 1200V

FEATURES:

- **Hyper Fast Recovery: typically 30 nS**
- **High Surge Rating**
- **Low Reverse Leakage Current**
- **Low Junction Capacitance**
- **Hermetically Sealed Power Package**
- **Gold Eutectic Die Attach Available**
- **Ultrasonic Aluminum Wire Bonds**
- **TX, TXV, or Space Level Screening Available**

Maximum Ratings [4/]		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage [3/]	SDR12U080 SDR12U090 SDR12U100 SDR12U110 SDR12U120	V_{RRM} V_{RWM} V_R	800 900 1000 1100 1200	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_C= 100ºC)		I_O	12	**Amps**
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, T_A= 25ºC)		I_{FSM}	120	**Amps**
Operating & Storage Temperature		T_{OP} & T_{STG}	-65 to +200	**ºC**
Maximum Total Thermal Resistance Junction to Case	Cerpack SMD.5	$R_{\theta JC}$	2.2 (typ 1.7) 1.5 (typ 1.0)	**ºC/W**

NOTES:

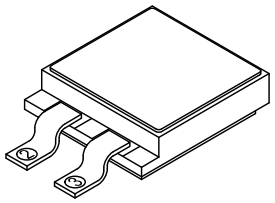
1/ For ordering information, price, and availability, contact factory.

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

3/ Higher voltages available.

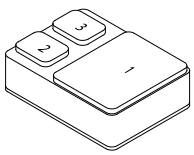
4/ Both anodes tied together.

Cerpack (G)



Bottom pad = cathode
Pins 2, 3 = anode

SMD.5 (S.5)



Pin 1 = cathode
Pins 2, 3 = anode

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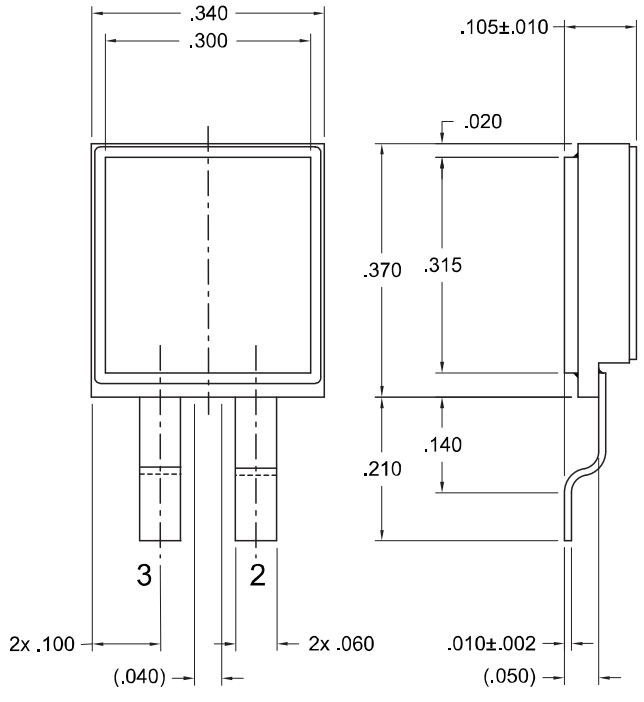
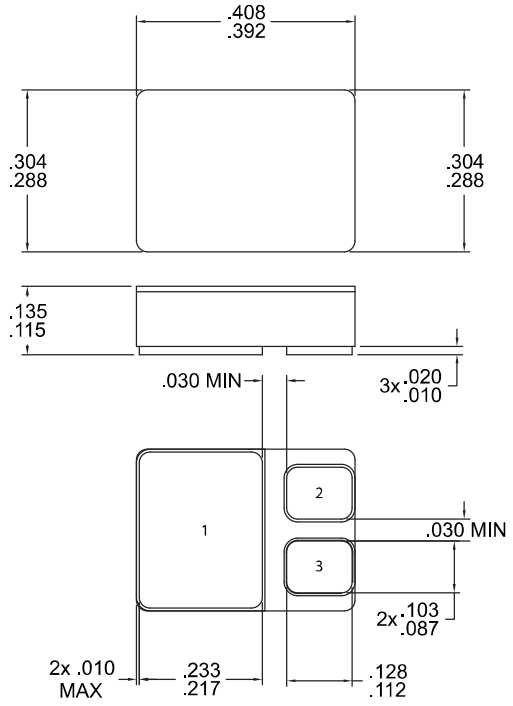
SDR12U080 thru SDR12U120

Electrical Characteristic		Symbol	Typ	Max	Units
Instantaneous Forward Voltage Drop (T_A = 25ºC, 300 – 500 µsec Pulse)	I_F = 1 A I_F = 5 A I_F = 10 A	V_{F1} V_{F2} V_{F3}	**1.08** **1.54** **1.85**	1.20 1.70 2.00	V_{DC}
Instantaneous Forward Voltage Drop (T_A = -55ºC, 300 – 500 µsec Pulse)	I_F = 1 A I_F = 5 A I_F = 10 A	V_{F4} V_{F5} V_{F6}	**1.13** **1.40** **1.60**	-	V_{DC}
Instantaneous Forward Voltage Drop (T_A = 125ºC, 300 – 500 µsec Pulse)	I_F = 1 A I_F = 5 A I_F = 10 A	V_{F7} V_{F8} V_{F9}	**0.83** **1.37** **1.80**	- - 1.95	V_{DC}
Reverse Leakage Current (100% of rated V_R, 300 µs pulse min.)	T_A = 25ºC T_A = 100ºC T_A = 125ºC T_A = 150ºC	I_{R1} I_{R2} I_{R3} I_{R4}	**1** **70** **250** **800**	10 - 1000 -	µA
Reverse Recovery Time (I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A, T_A = 25ºC)		t_{RR1}	**30**	50	nsec
Reverse Recovery Time (I_F = 10 A, dI_F/dt = 100 A/us)	T_A = 25ºC	t_{RR2} I_{RM2}	**65** **5**	-	nsec A
Junction Capacitance (T_A = 25ºC, f = 1 MHz)	V_R = 5 V_{DC} V_R = 10 V_{DC}	C_J	**60** **47**	- 60	pF

CASE OUTLINE: Cerpack (G)



CASE OUTLINE: SMD.5 (S.5)



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: RC0164A	DOC