



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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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

**SDR12U080
thru
SDR12U120**

**12 AMP
ULTRA FAST RECTIFIER
800 - 1200 VOLTS
50 nsec**

FEATURES:

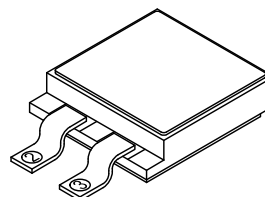
- Hyper Fast Recovery: typically 30 nS
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed Power Package
- Gold Eutectic Die Attach Available
- Ultrasonic Aluminum Wire Bonds
- TX, TXV, or Space Level Screening Available

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

NOTES:

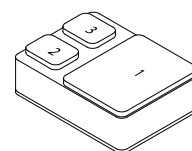
- ^{1/} For ordering information, price, and availability, contact factory.
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.
^{3/} Higher voltages available.
^{4/} Both anodes tied together.

Cerpack (G)



Bottom pad = cathode
Pins 2, 3 = anode

SMD.5 (S.5)



Pin 1 = cathode
Pins 2, 3 = anode

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

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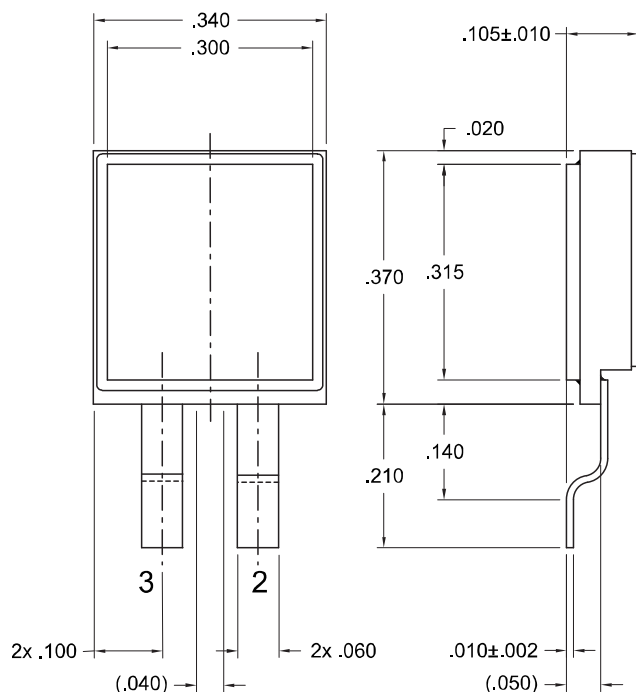
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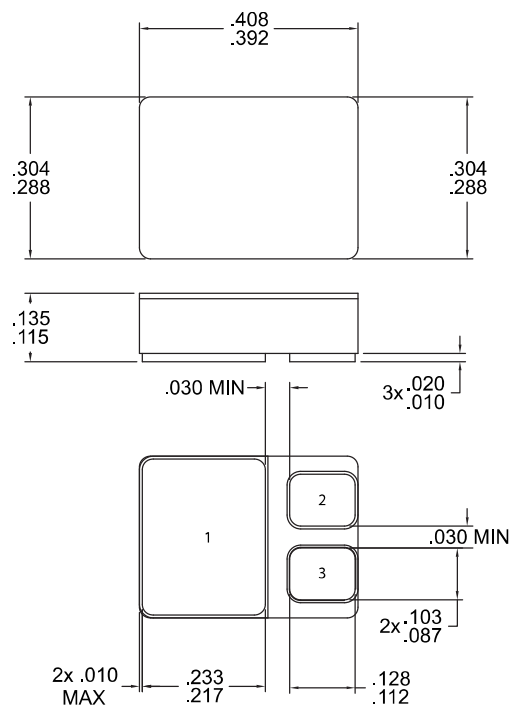
SDR12U080 thru SDR12U120

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

CASE OUTLINE: Cerpack (G)



CASE OUTLINE: SMD.5 (S.5)



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