



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

**SDR55U080CT thru
SDR55U120CT Series**

**55 AMP
ULTRA FAST CENTERTAP
RECTIFIER
800 - 1200 Volts
50 nsec**

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SDR55U

Screening ^{2/}
 — = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

Package Type
 M = TO-254
 N = TO-258
 P = TO-259

Configuration
 CT = Common Cathode
 CA = Common Anode
 D = Doubler
 DR = Doubler Reverse

Voltage/Family
 080 = 800V
 090 = 900V
 100 = 1000V
 110 = 1100V
 120 = 1200V

- Features:**
- Ultra Fast Recovery: 35 nsec typical
 - High Surge Rating
 - Low Reverse Leakage Current
 - Low Forward Voltage Drop
 - Low Junction Capacitance
 - Hermetically Sealed Package
 - Gold Eutectic Die Attach available
 - Ultrasonic Aluminum Wire Bonds
 - Ceramic Seals for improved hermeticity available
 - Available in Centertap and Doubler versions
 - TX, TXV, Space Level Screening Available Consult Factory.

Maximum Ratings	Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SDR55U080 SDR55U090 SDR55U100 SDR55U110 SDR55U120	V_{RRM} V_{RWM} V_R	800 900 1000 1100 1200 Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$) ^{3/4/}		I_o	55 Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$)		I_{FSM}	250 Amps
Operating & Storage Temperature		Top & Tstg	-65 to +200 °C
Maximum Thermal Resistance Junction to Case, each individual diode Junction to Case ^{3/}		$R_{\theta JE}$	1.25 1.0 °C/W

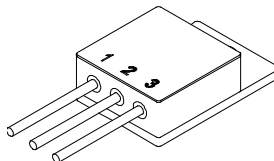
1/ For ordering information, price, operating curves, and availability - Contact factory.

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

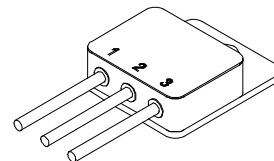
3/ Both legs tied together.

4/ Package limited.

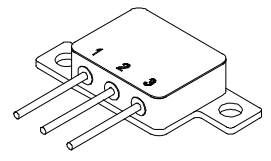
TO-254 (M)



TO-258 (N)



TO-259 (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 #: RU0119D	DOC
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Electrical Characteristics (per leg)		Symbol	Typ	Max	Units
Instantaneous Forward Voltage Drop ($T_A = 25^\circ\text{C}$, 300 μsec pulse)	$I_F = 10\text{Adc}$	V_{F1}	1.75	1.9	Volts
	$I_F = 20\text{Adc}$		1.85	2.1	
	$I_F = 50\text{Adc}$		2.1	2.5	
Instantaneous Forward Voltage Drop ($T_A = -55^\circ\text{C}$, 300 μsec pulse)	$I_F = 10\text{Adc}$	V_{F2}	1.75	1.95	Volts
	$I_F = 20\text{Adc}$		1.85	2.1	
	$I_F = 50\text{Adc}$		2.05	2.5	
Instantaneous Forward Voltage Drop ($T_A = 125^\circ\text{C}$, 300 μsec pulse)	$I_F = 10\text{Adc}$	V_{F3}	1.3	1.6	Volts
	$I_F = 20\text{Adc}$		1.52	1.8	
	$I_F = 50\text{Adc}$		1.88	2.35	
Reverse Leakage Current (Rated V_R , $T_A = 25^\circ\text{C}$, 300 μsec pulse minimum)		I_{R1}	20	100	μA
Reverse Leakage Current (Rated V_R , $T_A = 100^\circ\text{C}$, 300 μsec pulse minimum)		I_{R2}	1.5	—	mA
Reverse Leakage Current (Rated V_R , $T_A = 125^\circ\text{C}$, 300 μsec pulse minimum)		I_{R3}	5	20	mA
Reverse Leakage Current (Rated V_R , $T_A = 150^\circ\text{C}$, 300 μsec pulse minimum)		I_{R4}	15	—	mA
Junction Capacitance ($V_R = 5\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$) ($V_R = 10\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)		C_J	50	—	pF
			45	75	
Reverse Recovery Time ($I_F = 500\text{mA}$, $I_R = 1\text{A}$, $I_{RR} = 0.25\text{A}$) ($I_F = 500\text{mA}$, $I_R = 1\text{A}$, $I_{RR} = 0.25\text{A}$) ($I_F = 10\text{A}$, $dI_F / dt = 100\text{A}/\mu\text{s}$) ($I_F = 10\text{A}$, $dI_F / dt = 100\text{A}/\mu\text{s}$) ($I_F = 10\text{A}$, $dI_F / dt = 100\text{A}/\mu\text{s}$) ($I_F = 10\text{A}$, $dI_F / dt = 100\text{A}/\mu\text{s}$)	$T_A = 25^\circ\text{C}$	t_{rr1}	35	50	nsec
	$T_A = 100^\circ\text{C}$	t_{rr2}	100	--	
	$T_A = 25^\circ\text{C}$	t_{rr3}	50	--	
	$T_A = 25^\circ\text{C}$	I_{RM3}	3.7	--	
	$T_A = 100^\circ\text{C}$	t_{rr4}	110	--	
	$T_A = 100^\circ\text{C}$	I_{RM4}	6	--	

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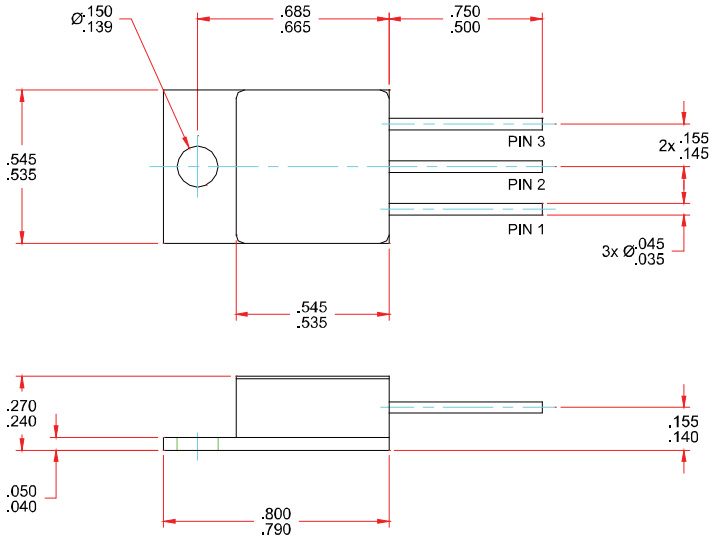


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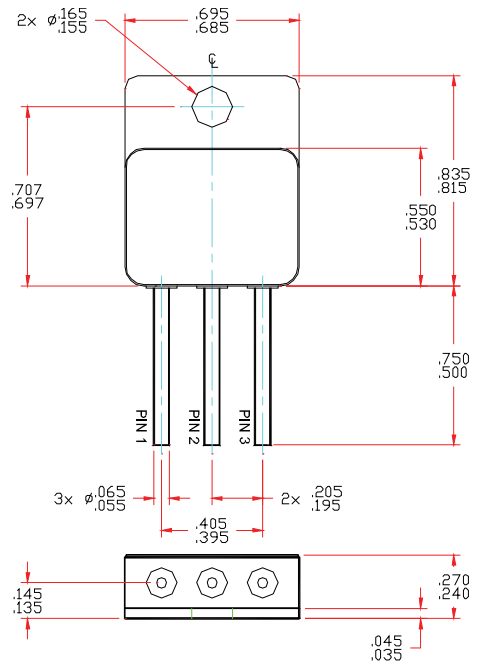
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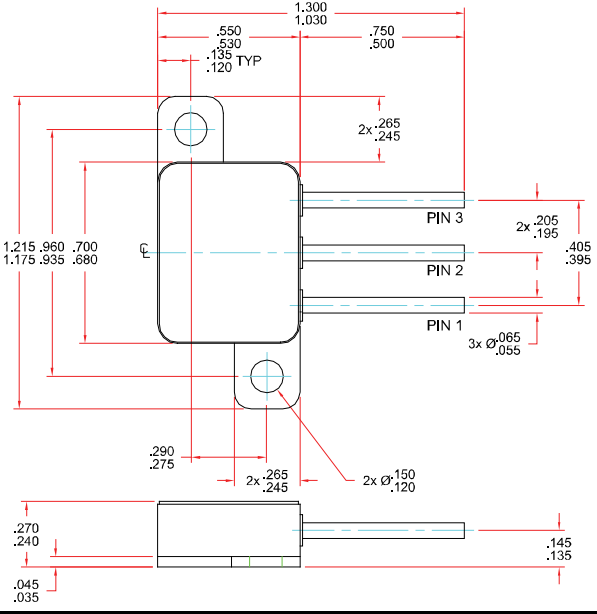
Case Outline: TO-254



Case Outline: TO-258



Case Outline: TO-259



PIN ASSIGNMENT				
Code	Function	Pin 1	Pin 2	Pin 3
CT	Common Cathode	Anode	Cathode	Anode
CA	Common Anode	Cathode	Anode	Cathode
D	Doubler	Cathode	Anode / Cathode	Anode
DR	Doubler Reverse	Anode	Cathode / Anode	Cathode

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