



# Solid State Devices, Inc.

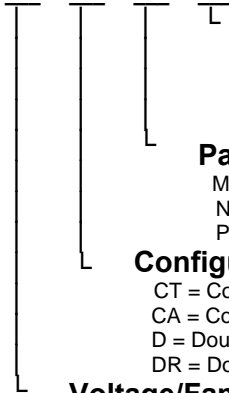
14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

## SDR55U080CT thru SDR55U120CT Series

### DESIGNER'S DATA SHEET

#### Part Number / Ordering Information <sup>1/</sup>

SDR55U



#### Screening <sup>2/</sup>

— = 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

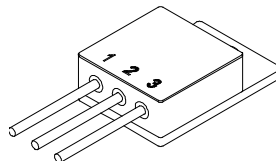
**55 AMP  
ULTRA FAST CENTERTAP  
RECTIFIER  
800 - 1200 Volts  
50 nsec**

#### Features:

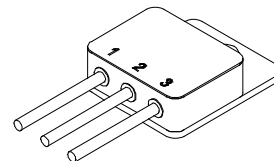
- Ultra Fast Recovery: 35 nsec typical
- High Surge Rating
- Low Reverse Leakage Current
- Low Forward Voltage Drop
- Low Junction Capacitance
- Hermetically Sealed Package
- Gold Eutectic Die Attach available
- Ultrasonic Aluminum Wire Bonds
- Ceramic Seals for improved hermeticity available
- Available 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	$V_{RRM}$	800	Volts
	SDR55U090		900	
	SDR55U100	$V_{RWM}$	1000	
	SDR55U110		1100	
	SDR55U120	$V_R$	1200	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$ ) <sup>3/4/</sup>	$I_o$	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 <sup>3/</sup>	$R_{\theta JE}$	1.25	°C/W	
		1.0		

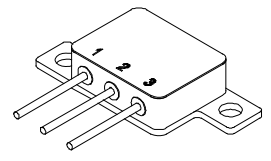
TO-254 (M)



TO-258 (N)



TO-259 (P)



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

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

<sup>3/</sup> Both legs tied together.

<sup>4/</sup> Package limited.

**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**



**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**

Electrical Characteristics (per leg)		Symbol	Typ	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , 300 $\mu\text{sec}$ 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	
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = -55^\circ\text{C}$ , 300 $\mu\text{sec}$ 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	
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 125^\circ\text{C}$ , 300 $\mu\text{sec}$ 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	
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)		$I_{R1}$	20	100	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 100^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)		$I_{R2}$	1.5	—	mA
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 125^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)		$I_{R3}$	5	20	mA
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 150^\circ\text{C}$ , 300 $\mu\text{sec}$ pulse minimum)		$I_{R4}$	15	—	mA
<b>Junction Capacitance</b> ( $V_R = 5\text{Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ ) ( $V_R = 10\text{Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )		$C_J$	50	—	pF
			45	75	
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 0.25\text{A}$ ) ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 0.25\text{A}$ ) ( $I_F = 10\text{A}$ , $dI_F / dt = 100\text{A}/\mu\text{s}$ ) ( $I_F = 10\text{A}$ , $dI_F / dt = 100\text{A}/\mu\text{s}$ ) ( $I_F = 10\text{A}$ , $dI_F / dt = 100\text{A}/\mu\text{s}$ ) ( $I_F = 10\text{A}$ , $dI_F / dt = 100\text{A}/\mu\text{s}$ )	$T_A = 25^\circ\text{C}$	$t_{rr1}$	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	--	

**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**

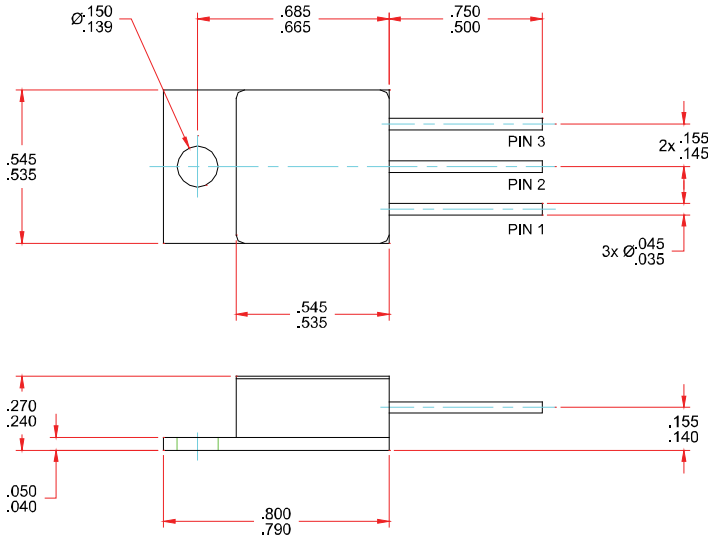


**Solid State Devices, Inc.**

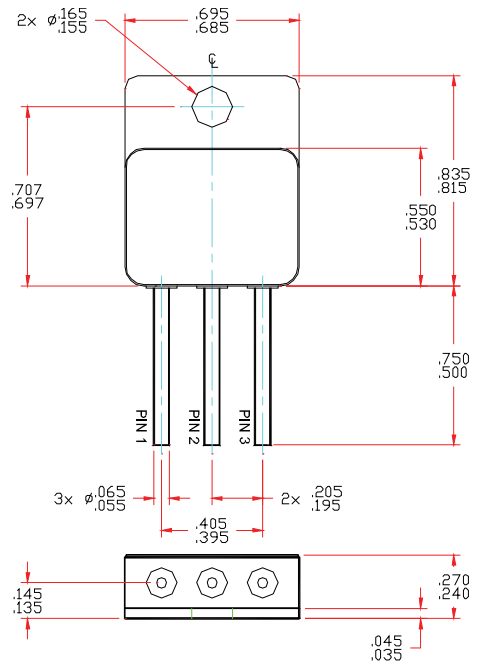
14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SDR55U080CT thru  
 SDR55U120CT Series**

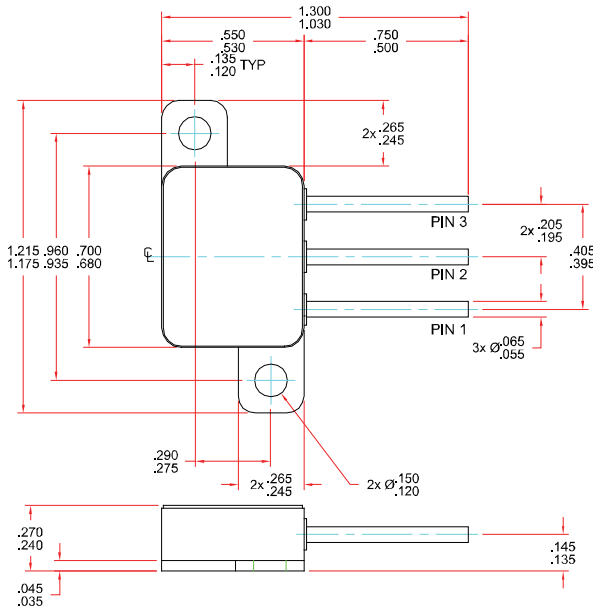
**Case Outline: TO-254**



**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

**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**