



# 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

## SDR6210CT thru SDR6212CT Series

### Designer's Data Sheet

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

SDR62

J

—

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

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

#### Leg Bend

— = Straight

DB = Down Bend

UB = Up Bend

#### Package

J = TO-257

S1 = SMD1 (CT configuration only)

#### Pin Configuration

CT: Common Cathode

CA: Common Anode

D: Doubler

DR: Doubler Reverse

#### Voltage

10 = 1000V

11 = 1100V

12 = 1200V

**40 AMPS**  
**1000 - 1200 VOLTS**  
**35 nsec**  
**HYPER FAST**  
**CENTERTAP RECTIFIER**

#### FEATURES:

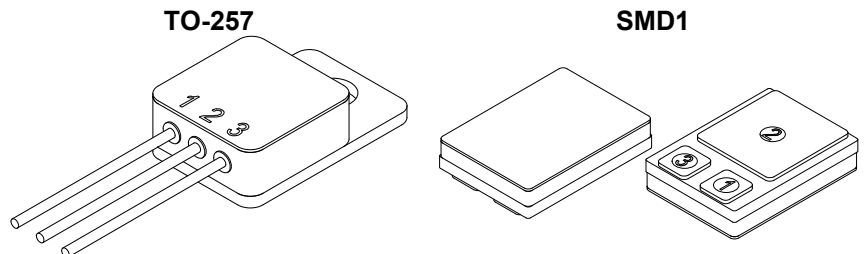
- Hyper Fast Recovery: 35 nsec Maximum <sup>3/</sup>
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Isolated Hermetically Sealed Package with ceramic seals (TO-257)
- Ultrasonic Aluminum Wire Bonds
- Custom Lead Forming Available
- TX, TXV, and Space Level Screening Available Consult Factory. <sup>2/</sup>
- Upgrade to the HFA35HB120C

### MAXIMUM RATINGS

	Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SDR6210	$V_{RRM}$	1000
	SDR6211	$V_{RWM}$	1100
	SDR6212	$V_R$	1200
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A=25^\circ\text{C}$ ) <sup>4/</sup>	$I_o$	40 <sup>6/</sup>	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $T_A=25^\circ\text{C}$ ) <sup>5/</sup>	$I_{FSM}$	150	Amps
Operating and Storage Temperature	$T_{OP}$ & $T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case <sup>4/</sup> Junction to Case <sup>5/</sup>	$R_{\theta JC}$	1.2	$^\circ\text{C/W}$
		2.0	

#### NOTES:

- 1/ For ordering information, price, operating curves, and availability - contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request.
- 3/ Recovery conditions:  $I_F = 0.5$  Amp,  $I_R = 1.0$  Amp, rec. to 0.25 Amp.
- 4/ Both legs tied together.
- 5/ Per leg.
- 6/ Doublers:  $I_o = 20\text{A/leg}$ . TO257: max 30A in the center tap; wirebond 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 #: RC0177A**

**DOC**

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# SDR6210CT thru SDR6212CT Series

ELECTRICAL CHARACTERISTICS (Per Leg)		Symbol	Typ	Max	Unit
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 5$ Amps, 300 $\mu$ sec Pulse)	$T_A = 25^\circ\text{C}$	$V_{F1}$	1.85	2.3	Volts
	$T_A = 100^\circ\text{C}$		1.55	2.0	
	$T_A = 125^\circ\text{C}$		1.45	-	
	$T_A = 150^\circ\text{C}$		1.38	-	
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 10$ Amps, 300 $\mu$ sec Pulse)	$T_A = 25^\circ\text{C}$	$V_{F2}$	2.00	2.5	Volts
	$T_A = 100^\circ\text{C}$		1.80	2.3	
	$T_A = 125^\circ\text{C}$		1.71	-	
	$T_A = 150^\circ\text{C}$		1.65	-	
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 20$ Amps, 300 $\mu$ sec Pulse)	$T_A = 25^\circ\text{C}$	$V_{F3}$	2.20	2.7	Volts
	$T_A = 100^\circ\text{C}$		2.10	2.6	
	$T_A = 125^\circ\text{C}$		2.05	-	
	$T_A = 150^\circ\text{C}$		2.0	-	
<b>Reverse Leakage Current</b> (Rated $V_R$ , 300 $\mu$ sec pulse minimum)	$T_A = 25^\circ\text{C}$	$I_R$	7.5	50	$\mu\text{A}$
	$T_A = 100^\circ\text{C}$		0.7	5	mA
	$T_A = 125^\circ\text{C}$		2.8	-	mA
	$T_A = 150^\circ\text{C}$		7.8	-	mA
<b>Reverse Recovery Time</b> ( $I_F = 0.5\text{A}$ , $I_R = 1$ A, $I_{RR} = 0.25\text{A}$ )	$T_A = 25^\circ\text{C}$	$t_{rr1}$	25	35	ns
	$T_A = 100^\circ\text{C}$		70	-	
	$T_A = 125^\circ\text{C}$		85	-	
<b>Reverse Recovery Time</b> ( $I_{RM} = 10\text{A}$ , $di/dt = 100$ A/us)	$T_A = 25^\circ\text{C}$	$t_{rr2}$	70	100	ns
	$T_A = 100^\circ\text{C}$		110	-	
	$T_A = 125^\circ\text{C}$		125	-	
<b>Reverse Recovery Current</b> ( $I_{RM} = 10\text{A}$ , $di/dt = 100$ A/us)	$T_A = 25^\circ\text{C}$	$I_{RM2}$	4.65	6	A
	$T_A = 100^\circ\text{C}$		6.5	-	
	$T_A = 125^\circ\text{C}$		7.15	-	
<b>Junction Capacitance</b> ( $T_A = 25^\circ\text{C}$ , $f = 1$ MHz)	$V_R = 5$ V <sub>DC</sub>	$C_J$	20	-	pF
	$V_R = 10$ V <sub>DC</sub>		20	50	

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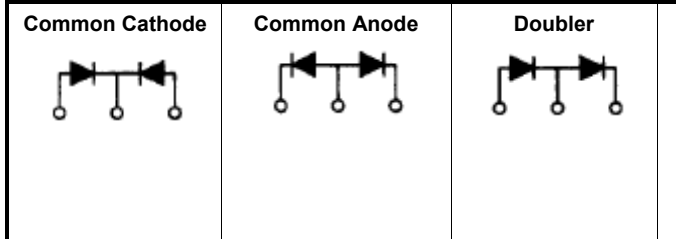
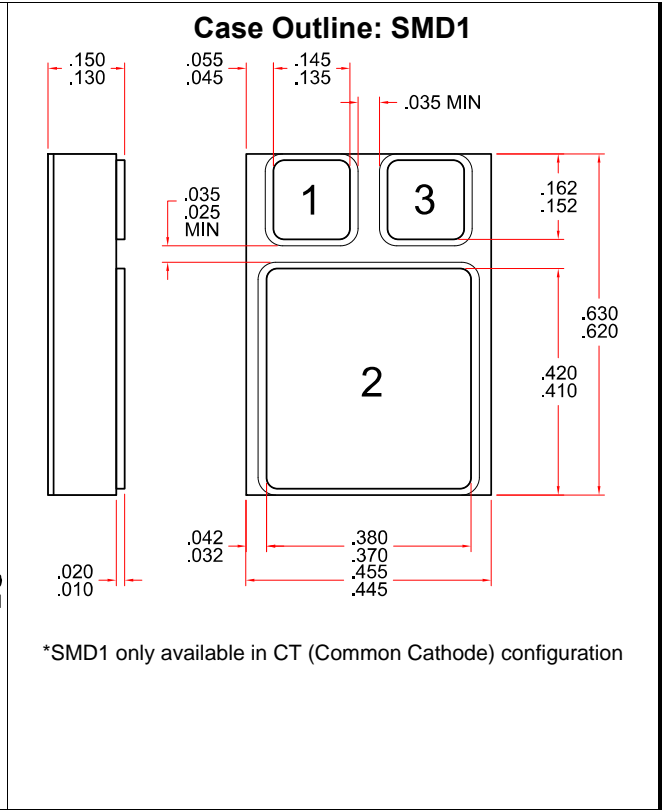
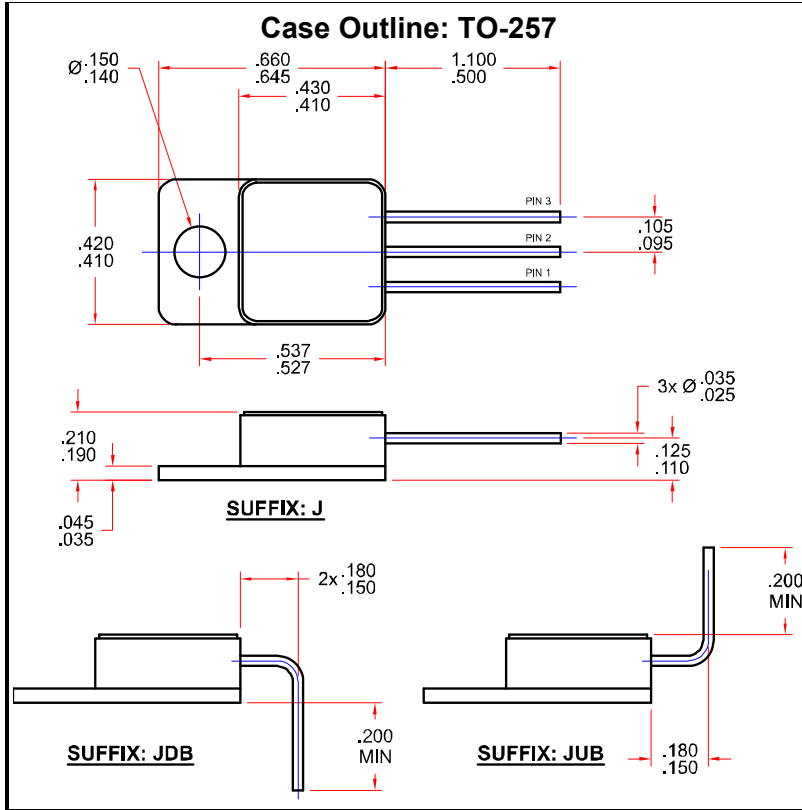
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**SDR6210CT thru  
SDR6212CT Series**



PIN ASSIGNMENT				
CODE	FUNCTION	PIN 1	PIN 2	PIN 3
CT	Common Cathode	Anode 1	Cathode	Anode 2
CA	Common Anode	Cathode 1	Anode	Cathode 2
D	Doubler	Cathode 1	Cathode2/Anode 1	Anode 2
DR	Doubler Reverse	Anode 1	Cathode1/Anode 2	Cathode 2

**Available in Following Configurations:**

**Common Cathode Centertap:** SDR6210CTJ, SDR6210CTJDB, SDR6210CTJUB, SDR6210CTS1, SDR6211CTJ, SDR6211CTJDB, SDR6211CTJUB, SDR6211CTS1, SDR6212CTJ, SDR6212CTJDB, SDR6212CTJUB, SDR6212CTS1

**Common Anode Centertap:** SDR6210CAJ, SDR6210CAJDB, SDR6210CAJUB, SDR6211CAJ, SDR6211CAJDB, SDR6211CAJUB, SDR6212CAJ, SDR6212CAJDB, SDR6212CAJUB

**Doubler:** SDR6210DJ, SDR6210DJDB, SDR6210DJUB, SDR6211DJ, SDR6211DJDB, SDR6211DJUB, SDR6212DJ, SDR6212DJDB, SDR6212DJUB, SDR6210DRJ, SDR6210DRJDB, SDR6210DRJUB, SDR6211DRJ, SDR6211DRJDB, SDR6211DRJUB, SDR6212DRJ, SDR6212DRJDB, SDR6212DRJUB

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