



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

**SDR643CTS1
 thru
 SDR647CTS1**

**50 AMP
 300-700 Volts
 35 nsec
 Ultra Fast
 Centertap Rectifier**

DESIGNER'S DATA SHEET

SDR64 CT

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

Package
 S1= SMD1

Voltage/Family
 3 = 300 V
 4 = 400 V
 5 = 500 V
 6 = 600 V
 7 = 700 V

- Features:**
- Ultra Fast Recovery: 25 nsec typical
 - High Surge Rating
 - Low Reverse Leakage Current
 - Low Junction Capacitance
 - Hermetically Sealed Power Surface Mount Package
 - Ceramic Seals Available
 - Higher Currents & Voltages Available – Contact Factory
 - TX, TXV, and S-Level Screening Available^{2/}

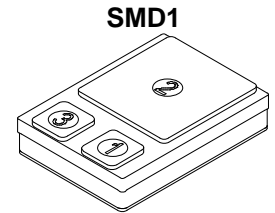
Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SDR643CTS1	V_{RRM} V_{RWM} V_R	300	Volts
	SDR644CTS1		400	
	SDR645CTS1		500	
	SDR646CTS1		600	
	SDR647CTS1		700	
Average Rectified Forward Current note 3 (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$)		I_o	50	Amps
Peak Surge Current note 3 (8.3 ms Pulse, Half Sine Wave Superimposed on I_o , Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$)		I_{FSM}	500	Amps
Operating & Storage Temperature		Top & Tstg	-65 to +200	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case, each individual diode Junction to Case, note 3		$R_{\theta JC}$	2.00	$^\circ\text{C/W}$
			1.20	

1/ For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.

2/ Screened to MIL-PRF-19500; contact factory for screening flow.

3/ Both legs tied together

*Also available in other packages: TO-254, TO-254Z, TO-257, and 28 Pin CLCC – Consult Factory





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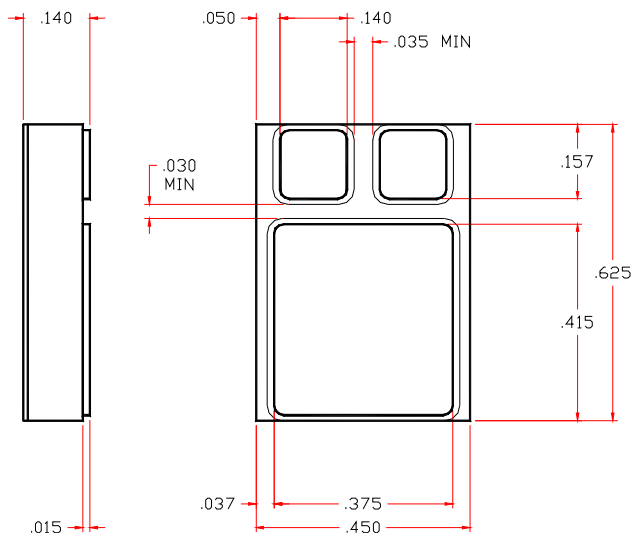
Electrical Characteristics (Per Leg)

Characteristics	Symbol	Typical	Maximum	Unit
Instantaneous Forward Voltage Drop ($I_F = 5\text{Adc}$, $T_A = 25^\circ\text{C}$, 300 msec pulse) ($I_F = 10\text{Adc}$, $T_A = 25^\circ\text{C}$, 300 msec pulse) ($I_F = 15\text{Adc}$, $T_A = 25^\circ\text{C}$, 300 msec pulse) ($I_F = 20\text{Adc}$, $T_A = 25^\circ\text{C}$, 300 msec pulse) ($I_F = 30\text{Adc}$, $T_A = 25^\circ\text{C}$, 300 msec pulse)	V_{F1} V_{F2} V_{F3} V_{F4} V_{F5}	0.94 1.0 1.05 1.07 1.1	- - 1.35 - 1.5	Volts
Instantaneous Forward Voltage Drop ($I_F = 15\text{Adc}$, $T_A = 100^\circ\text{C}$, 300 msec pulse) ($I_F = 30\text{Adc}$, $T_A = 100^\circ\text{C}$, 300 msec pulse) ($I_F = 15\text{Adc}$, $T_A = -55^\circ\text{C}$, 300 msec pulse) ($I_F = 30\text{Adc}$, $T_A = -55^\circ\text{C}$, 300 msec pulse)	V_{F6} V_{F7} V_{F8} V_{F9}	0.93 1.00 1.15 1.20	1.25 - 1.5 -	Volts
Reverse Leakage Current (Rated V_R , $T_A = 25^\circ\text{C}$, 300 msec pulse min)	SDR647CTS1 ALL OTHER I_{R1}	30 10	150 50	μA
Reverse Leakage Current (Rated V_R , $T_A = 100^\circ\text{C}$, 300 msec pulse min) (Rated V_R , $T_A = 125^\circ\text{C}$, 300 msec pulse min) (Rated V_R , $T_A = 150^\circ\text{C}$, 300 msec pulse min)	I_{R2} I_{R3} I_{R4}	2 8 25	10 - -	mA
Junction Capacitance ($V_R = 10\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	C_J	60	120	pF
Reverse Recovery Time ($I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{RR} = 0.25\text{A}$, $T_A = 25^\circ\text{C}$) ($I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{RR} = 0.25\text{A}$, $T_A = 100^\circ\text{C}$) ($I_F = 10\text{A}$, $dI_F/dt = 100\text{A/us}$, $T_A = 25^\circ\text{C}$) ($I_F = 10\text{A}$, $dI_F/dt = 100\text{A/us}$, $T_A = 100^\circ\text{C}$)	t_{rr1} t_{rr2} t_{rr3} I_{RM3} t_a/t_b t_{rr4} I_{RM4} t_a/t_b	25 70 35 2.7 1.83 80 3.6 1.0	35 - - - - - - -	nsec nsec nsec A - nsec A -

Case Outline: SMD1

PIN OUT:

- PIN 1: ANODE 1**
- PIN 2: CATHODE**
- PIN 3: ANODE 2**



NOTE: All specifications are subject to change without notification. SCDD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: RU0087D

DOC