

**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

Designer's Data Sheet**Part Number/Ordering Information ^{1/}****SDR60** _ **H** **CT** _ _ _**Screening ^{2/}**

_ = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

Lead Bend Options (TO-254, Z)

DB = Down Bend
 UB = Up Bend

Package

S1 = SMD1
 M = TO-254
 Z = TO-254Z

Recovery Time H = Hyperfast

Family/Voltage 010 = 100V
 015 = 150V
 020 = 200V

SDR60010HCT thru SDR60020HCT

**60 AMP
HYPERFAST
CENTERTAP RECTIFIER
100 - 200 VOLTS
35 nsec**

FEATURES:

- Hyperfast Recovery: 35 ns Maximum
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed Package, Isolated (TO-254, Z) or Hot Case (SMD1)
- Gold Eutectic Die Attach Available
- Ultrasonic Aluminum Wire Bonds
- TX, TXV, or Space Level Screening Available

Maximum Ratings	Symbol	Value	Unit
Peak Repetitive Reverse and DC Blocking Voltage ^{3/}	SDR60010 SDR60015 SDR60020	V_{RRM} V_{RWM} V_R	100 150 200 V
Average Rectified Forward Current ^{4/} (Resistive Load, 60 Hz Sine Wave, $T_C = 100^\circ\text{C}$)	I_O	60	A
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $T_A = 25^\circ\text{C}$, per leg)	I_{FSM}	250	A
Operating & Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Total Thermal Resistance Junction to Case, each individual diode, SMD1 Junction to Case, SMD1 ^{4/} Junction to Case, each individual diode, TO-254, Z Junction to Case, TO-254, Z ^{4/}	$R_{\theta JC}$	1.5 1.0 1.8 1.2	$^\circ\text{C/W}$

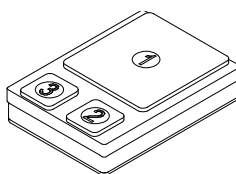
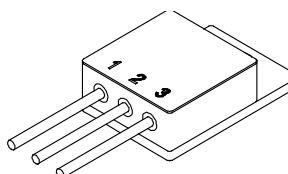
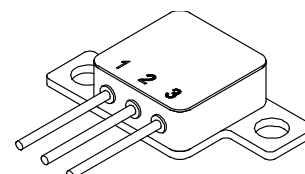
NOTES:

^{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 legs tied together.

SMD1**TO-254****TO-254Z**

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

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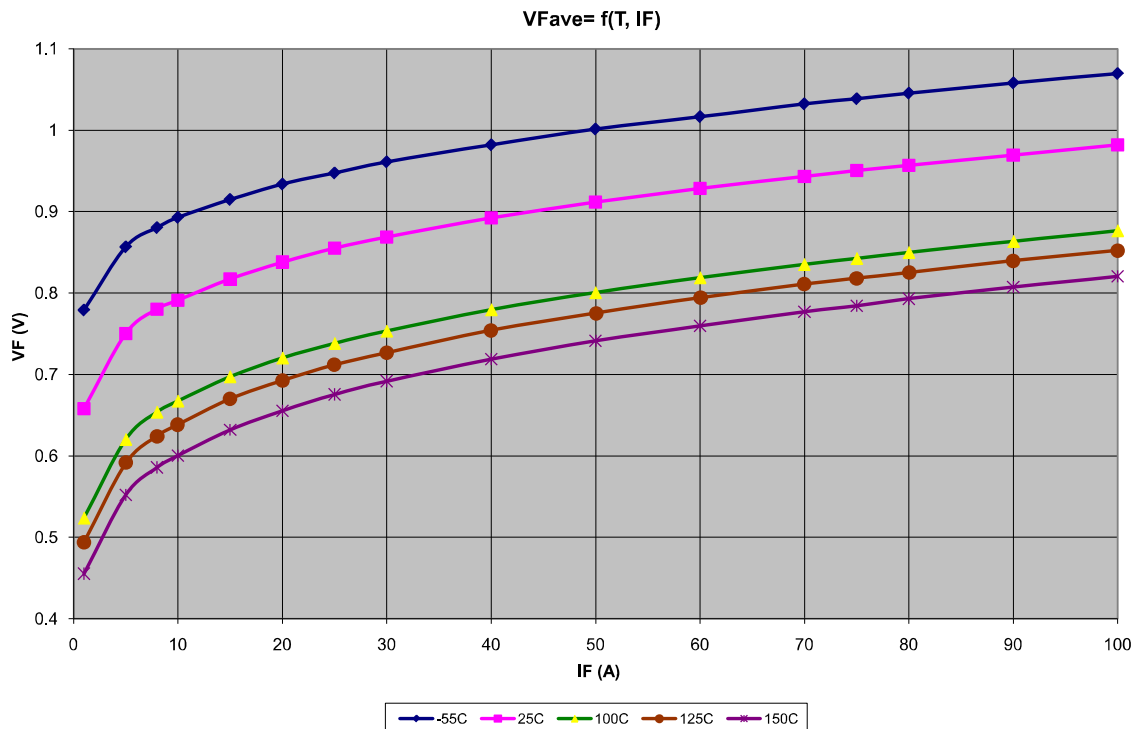


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SDR60010HCT thru SDR60020HCT

Electrical Characteristic (Per Leg)		Symbol	Typ	Max	Unit
Instantaneous Forward Voltage Drop ($T_A = 25^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{ A}$	V_{F1}	0.80	0.95	V_{DC}
	$I_F = 20\text{ A}$	V_{F2}	0.84	0.98	
	$I_F = 30\text{ A}$	V_{F3}	0.88	1.10	
Instantaneous Forward Voltage Drop ($T_A = -55^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{ A}$	V_{F4}	0.90	1.10	V_{DC}
	$I_F = 20\text{ A}$	V_{F5}	0.95	1.15	
	$I_F = 30\text{ A}$	V_{F6}	0.97	1.20	
Instantaneous Forward Voltage Drop ($T_A = 125^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{ A}$	V_{F7}	0.64	0.80	V_{DC}
	$I_F = 20\text{ A}$	V_{F8}	0.70	0.86	
	$I_F = 30\text{ A}$	V_{F9}	0.74	1.00	
Reverse Leakage Current (100% of rated V_R , 300 μs pulse min.)	$T_A = 25^\circ\text{C}$	I_{R1}	0.025	10	μA
	$T_A = 100^\circ\text{C}$	I_{R2}	2.5	-	
	$T_A = 125^\circ\text{C}$	I_{R3}	8	100	
	$T_A = 150^\circ\text{C}$	I_{R4}	30	-	
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	35	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}	45	-	nsec
		I_{RM2}	2.6	-	A
	$T_A = 100^\circ\text{C}$	t_{RR3}	85	-	nsec
		I_{RM3}	5	-	A
Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1\text{ MHz}$)	$V_R = 5\text{ V}_{DC}$	C_J	470	-	pF
	$V_R = 10\text{ V}_{DC}$		375	500	



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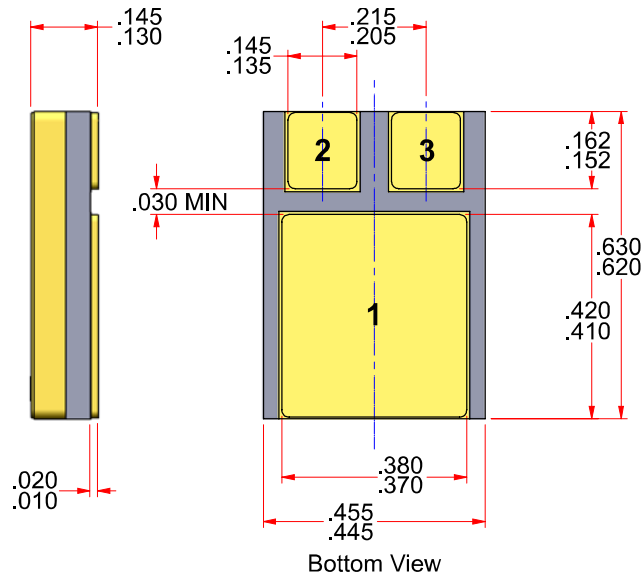


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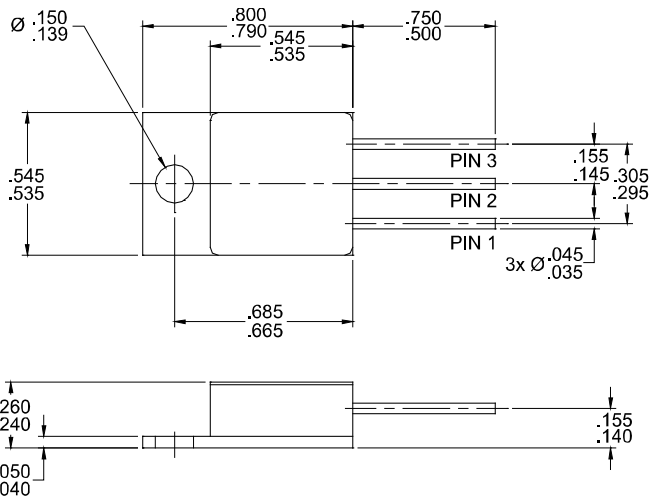
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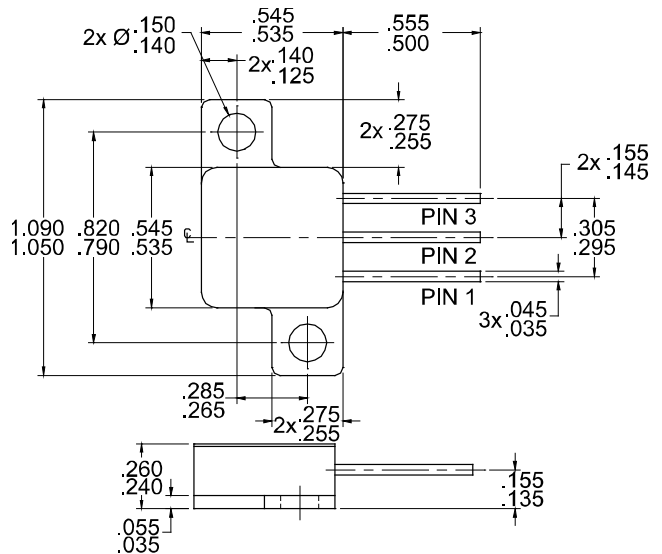
CASE OUTLINE: SMD1



CASE OUTLINE: TO-254

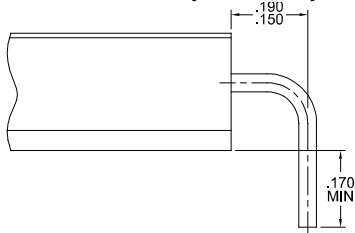


CASE OUTLINE: TO-254Z

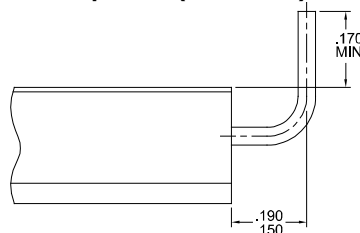


Optional Lead Bent Configuration

Down Bent (DB Suffix)



Up Bent (UB Suffix)



Pin Assignment

Package	Pin 1	Pin 2	Pin 3
SMD1	Cathode	Anode	Anode
TO-254	Anode	Cathode	Anode
TO-254Z	Anode	Cathode	Anode

For information on curves, contact the Factory Representative for Engineering Assistance.

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