



PRELIMINARY

Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

Phone: (562) 404-7855 * Fax: (562) 404-1773

ssdi@ssdi-power.com * www.ssdi-power.com

SDR6006 series

60Apk 60nsec

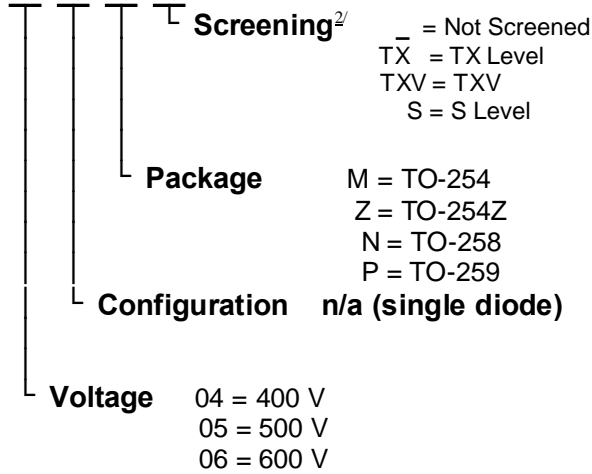
400 to 600 V

Ultrafast Rectifier

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SDR60

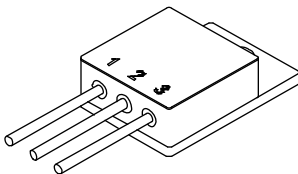


Features:

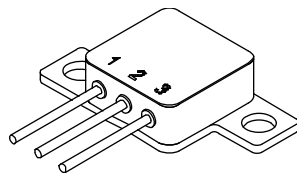
- Ultrafast Recovery: 100nsec Maximum
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed, Isolated Package providing enhanced thermal performance
- Eutectic Die Attach
- TX, TXV, and S Level Screening iaw MIL-PRF-19500 Available
- hyperfast version available (typ 30 ns)

Maximum Ratings	Symbol	Value	Units
Peak Repetitive Reverse Voltage	SDR6004 SDR6005 SDR6006	400 500 600	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T _C = 100 °C)	I _O	60	Amps, pk
Continuous Rectified Forward Current (T _C = 25 °C; limited by construction)	I _F	45	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, T _A = 25 °C, 1 pulse)	I _{FSM}	500	Amps
Operating & Storage Temperature	T _{OP} & T _{STG}	-65 to +200	°C
Maximum Total Thermal Resistance Junction to Case	R _{θJC}	1.0 (0.7 typ)	°C/W

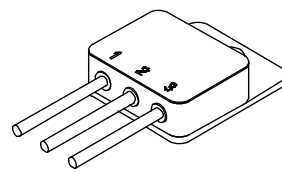
TO-254 (M)



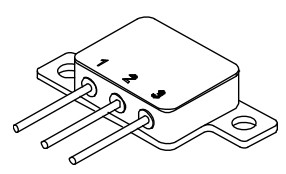
TO-254Z (Z)



TO-258



TO-259



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

DATA SHEET #: RC0121A

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SDR6006 Series

Electrical Characteristic		Symbol	Min	Typ	Max	Units
Instantaneous Forward Voltage Drop ($T_A = 25^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{A}$	V_{F1}	—	915	980	mV_{DC}
	$I_F = 20\text{A}$	V_{F2}		1015	1100	
	$I_F = 40\text{A}$	V_{F3}		1170	1250	
	$I_F = 60\text{A}$	V_{F4}		1275	1400	
Instantaneous Forward Voltage Drop ($T_A = 125^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{A}$	V_{F5}	—	765	-	mV_{DC}
	$I_F = 20\text{A}$	V_{F6}		870	-	
	$I_F = 40\text{A}$	V_{F7}		1040	1150	
	$I_F = 60\text{A}$	V_{F8}		1150	-	
Instantaneous Forward Voltage Drop ($T_A = -55^\circ\text{C}$, 300 – 500 μsec Pulse)	$I_F = 10\text{A}$	V_{F9}	—	1000	-	mV_{DC}
	$I_F = 20\text{A}$	V_{F10}		1100	-	
	$I_F = 40\text{A}$	V_{F11}		1250	1350	
	$I_F = 60\text{A}$	V_{F12}		1340	-	
Reverse Leakage Current (100% of rated V_R , 300 μs pulse min.)	$T_A = 25^\circ\text{C}$	I_{R1}	—	10	50	μA
	$T_A = 100^\circ\text{C}$	I_{R2}		1	-	mA
	$T_A = 125^\circ\text{C}$	I_{R3}		3	10	mA
	$T_A = 150^\circ\text{C}$	I_{R4}		10	-	mA
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_{RR}	—	60	100	nsec
Junction Capacitance ($V_R = 10\text{V}_{\text{DC}}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)		C_J	—	160	240	pF

NOTES: 1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screened to MIL-PRF-19500.

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SDR6006 Series

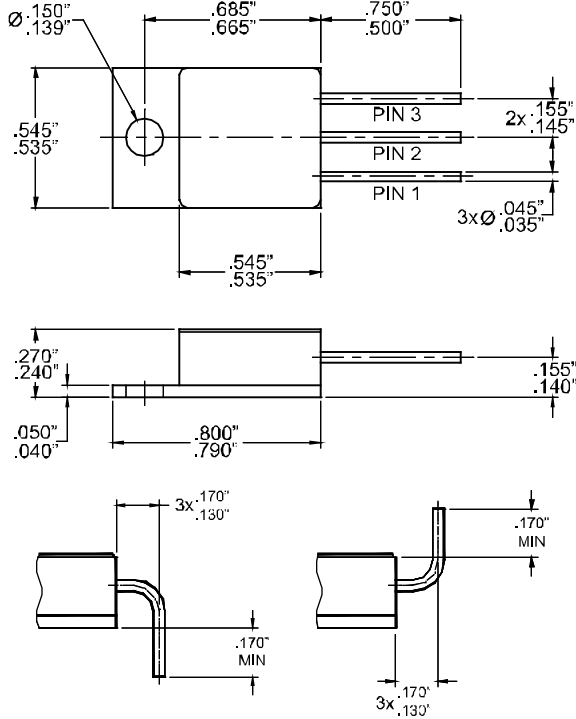
Available Part Numbers:

SDR6004M, SDR6004Z, SDR6004N, SDR6004P
 SDR6005M, SDR6005Z, SDR6005N, SDR6005P
 SDR6006M, SDR6006Z, SDR6006N, SDR6006P

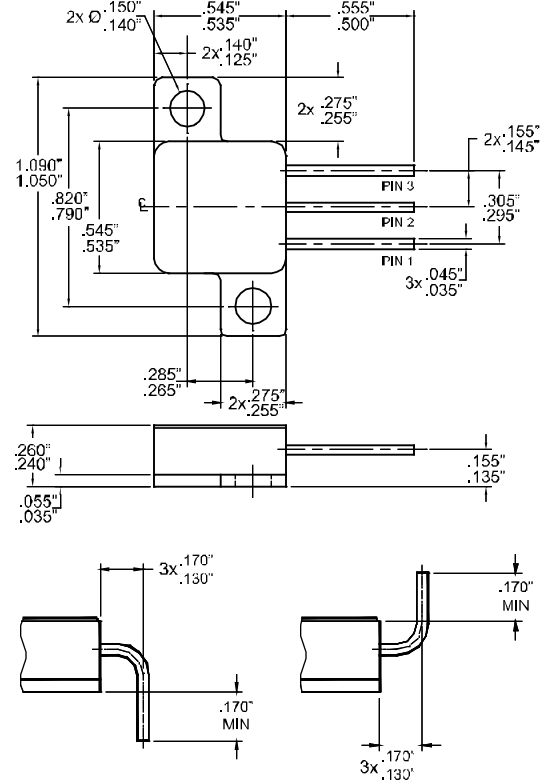
PIN ASSIGNMENT

PACKAGE	Pin 1	Pin 2	Pin 3
ALL	Cathode	Anode	Anode

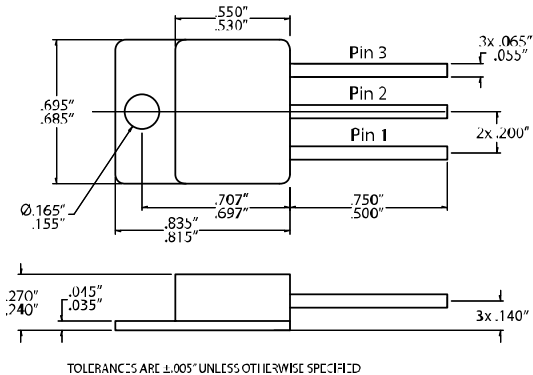
TO-254:



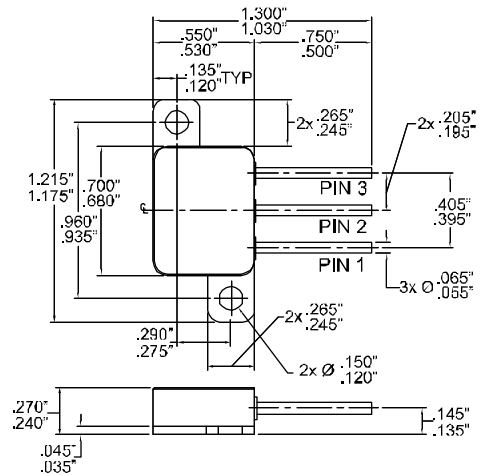
TO-254Z:



TO-258:



TO-259:



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