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

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SDR60 ___ ___ ___ ___

- **Screening**[2/]: _ = Not Screened; TX = TX Level; TXV = TXV; S = S Level
- **Package**: M = TO-254; Z = TO-254Z; N = TO-258; P = TO-259
- **Configuration**: n/a (single diode)
- **Voltage**: 04 = 400 V; 05 = 500 V; 06 = 600 V

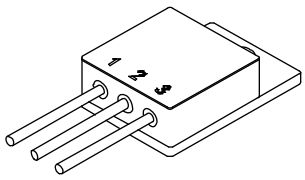
60Apk 60nsec
400 to 600 V
Ultrafast Rectifier

Features:

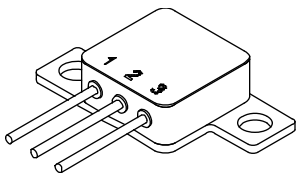
- **Ultrafast Recovery: 100nsec Maximum**
- **High Surge Rating**
- **Low Reverse Leakage Current**
- **Low Junction Capacitance**
- **Hermetically Sealed, Isolated Package providing enhanced thermal performance**
- **Eutectic Die Attach**
- **TX, TXV, and S Level Screening iaw MIL-PRF-19500 Available**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

Maximum Ratings	Symbol	Value	Units
Peak Repetitive Reverse Voltage **SDR6004** / **SDR6005** / **SDR6006**	V_{RRM}	400 / 500 / 600	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_C = 100 °C)	Io	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	**ºC**
Maximum Total Thermal Resistance Junction to Case	$R_{\theta JC}$	1.0 (0.7 typ)	**ºC/W**

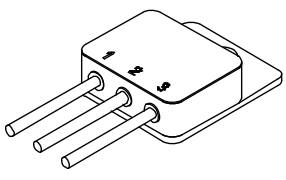
TO-254 (M)



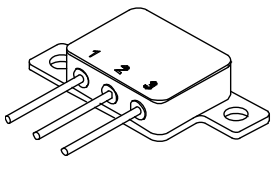
TO-254Z (Z)



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**	**DOC**

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SDR6006 Series

Electrical Characteristic		Symbol	Min	Typ	Max	Units
Instantaneous Forward Voltage Drop (T_A = 25ºC, 300 – 500 µsec Pulse)	I_F = 10A	V_{F1}	—	915	980	**mV_{DC}**
	I_F = 20A	V_{F2}		1015	1100	
	I_F = 40A	V_{F3}		1170	1250	
	I_F = 60A	V_{F4}		1275	1400	
Instantaneous Forward Voltage Drop (T_A = 125ºC, 300 – 500 µsec Pulse)	I_F = 10A	V_{F5}	—	765	-	**mV_{DC}**
	I_F = 20A	V_{F6}		870	-	
	I_F = 40A	V_{F7}		1040	1150	
	I_F = 60A	V_{F8}		1150	-	
Instantaneous Forward Voltage Drop (T_A = -55ºC, 300 – 500 µsec Pulse)	I_F = 10A	V_{F9}	—	1000	-	**mV_{DC}**
	I_F = 20A	V_{F10}		1100	-	
	I_F = 40A	V_{F11}		1250	1350	
	I_F = 60A	V_{F12}		1340	-	
Reverse Leakage Current (100% of rated V_R, 300 µs pulse min.)	T_A = 25 ºC	I_{R1}	—	10	50	**µA**
	T_A = 100 ºC	I_{R2}		1	-	**mA**
	T_A = 125 ºC	I_{R3}	—	3	10	**mA**
	T_A = 150 ºC	I_{R4}		10	-	**mA**
Reverse Recovery Time (I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A, T_A = 25ºC)		t_{RR}	—	60	100	**nsec**
Junction Capacitance (V_R = 10V_{DC}, T_A = 25ºC, f = 1MHz)		C_J	—	160	240	**pF**

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

2/ Screened to MIL-PRF-19500.

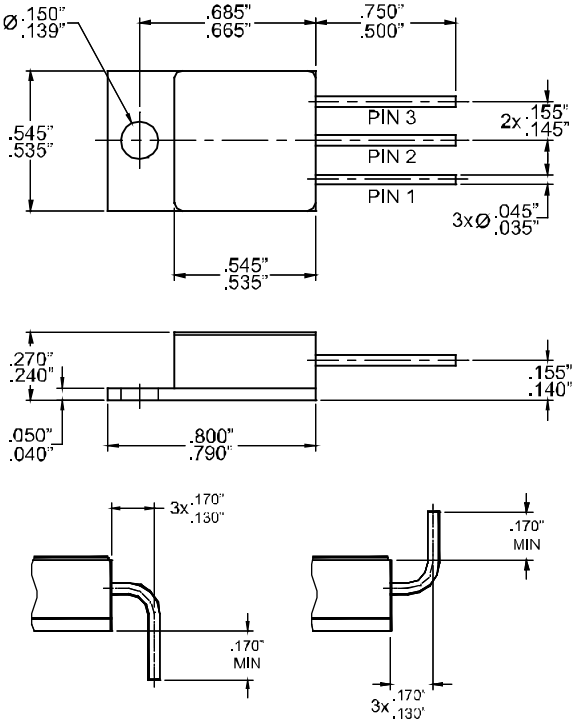
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SDR6006 Series

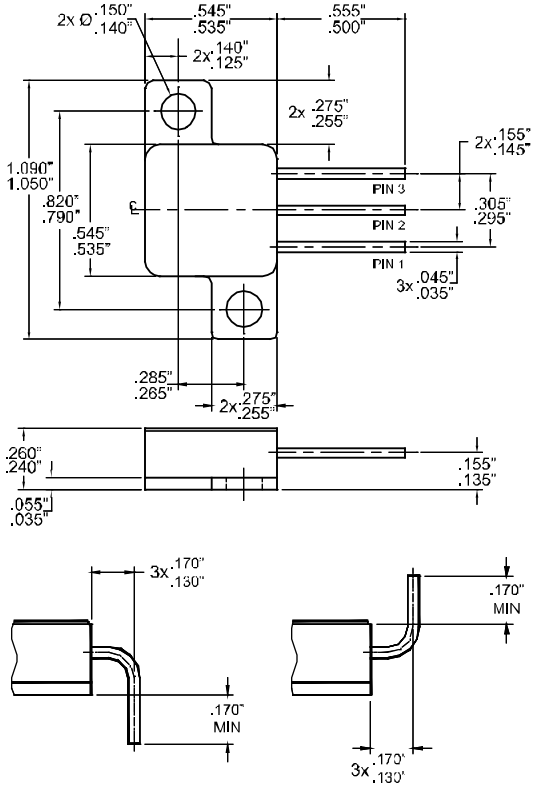
Available Part Numbers:
SDR6004M, SDR6004Z, SDR6004N, SDR6004P
SDR6005M, SDR6005Z, SDR6005N, SDR6005P
SDR6006M, SDR6006Z, SDR6006N, SDR6006P

PIN ASSIGNMENT			
PACKAGE	**Pin 1**	**Pin 2**	**Pin 3**
ALL	Cathode	Anode	Anode

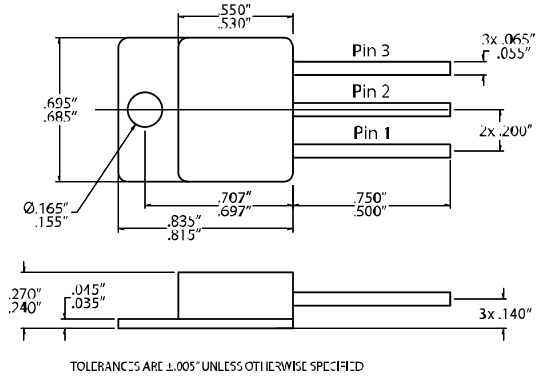
TO-254:



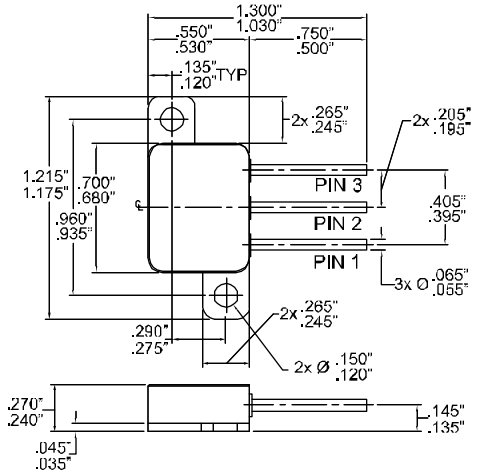
TO-254Z:



TO-258:



TO-259:



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