PRELIMINARY

SOLID STATE DEVICES, INC.
14005 Stage Road * Santa Fe Springs, Ca 90670
Phone: (562) 404-4474 * Fax: (562) 404-1773

5R5/3D thru 15R5/3D

Designer's Data Sheet

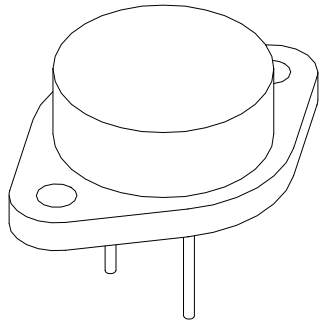
30 AMP 50-150 VOLTS EPION HIGH SPEED RECTIFIER

FEATURES:

Optimized for 12V and 15V auxiliary output power supplies. The EPION series has been designed to provide low forward voltage drops and small delta shifts in reverse recovery time at high temperature minimizing switching loses.

- **Radiation Tolerant**
- **Ultra Fast Recovery Time**
- **Low Forward Voltage**
- **Low Reverse Leakage**
- **Hermetically Sealed Package**
- **High Reverse Blocking Voltage**
- **175°C Operating T_J**

TO-3



Maximum Ratings		SYMBOL	VALUE	UNITS
Peak Repetitive Reverse and DC Blocking Voltage	**5R** **7R** **10R** **12R** **15R**	**V_{RM}(rep)** **V_R**	**50** **70** **100** **125** **150**	**Volts**
Half Wave Rectified Forward Current. Averaged Over Full Cycle per leg . (Resistive load, 60Hz, Sine Wave, T_C = 55°C)		**Io**	**30**	**Amps**
Peak Repetitive Forward Current per leg (T_C = 55°C, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		**I_{FM}**(rep)	**110**	**Amps**
Peak Surge Current per leg (T_C= 55°C, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)		**I_{FM}**(surge)	**350**	**Amps**
Operating and Storage Temperature		**T_J & Tstg**	**-65 TO +175**	**°C**
Maximum Thermal Resistance Junction to Case		**$R_{\theta JC}$**	**1.5**	**°C/W**

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

DATA SHEET #: RC0003A

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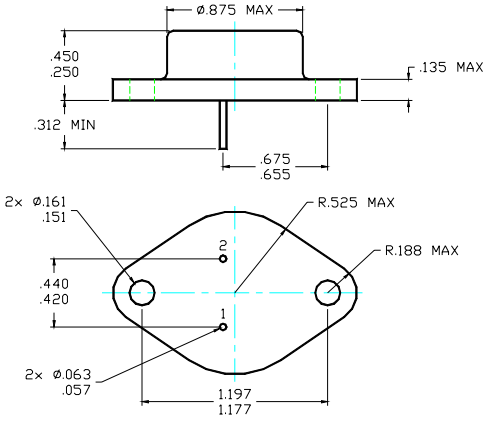
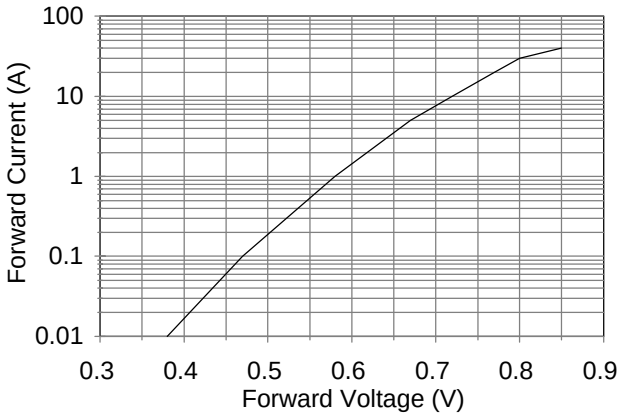
Electrical Characteristics (Per leg)	SYMBOL	VALUE	UNITS
Reverse Leakage Current (T_J = 25°C, 300µs pulse minimum V_R = 150V)	I_{R1}	50	mA
Reverse Leakage Current (T_J = 125°C, 300µs pulse minimum V_R = 150V)	I_{R2}	175	mA
Instantaneous Forward Voltage Drop T_J = 25°C, 300µsec pulse minimum I_F = 30A I_F = 50A	I_{F1}	 0.85 1.0	 V_{DC} V_{DC}
Instantaneous Forward Voltage Drop T_J = 125°C, 300µsec pulse minimum I_F = 30A I_F = 50A	I_{F2}	 .75 .90	 V_{DC} V_{DC}
Reverse Recovery Time (T_A= 25°C, I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A	T_{RR1}	65	nsec
Reverse Recovery Time (T_A= 150°C, I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A	T_{RR2}	90	nsec
Junction Capacitance (V_R = 10V_{DC}, T_A = 25°C, f = 1MHz)	C_J	250	pF

CASE OUTLINE: TO-3

CASE: CATHODE
PIN 1: ANODE
PIN 2: ANODE



FORWARD VOLTAGE @T_J = 25°C (per leg)



FORWARD VOLTAGE @T_J = 125°C (per leg)