

1. Description

This series are state-of-the-art devices designed for use in switching power supplies, inverters and as free wheeling diodes.

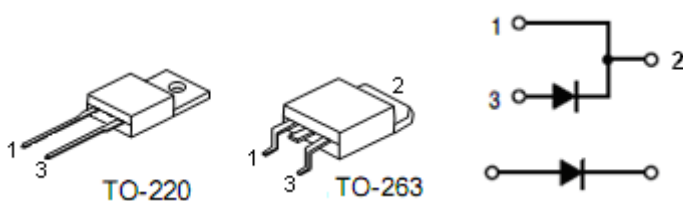
2. Features

- n Ultrafast 35 nanosecond recovery time
- n 175°C operating junction temperature
- n Popular TO-220 package
- n Epoxy meets UL 94 V-0 @ 0.125 in
- n Low forward voltage
- n Low leakage current
- n High temperature glass passivated junction
- n Reverse voltage to 600 V
- n Pb-free packages are available

3. Mechanical Characteristics

- n Case: epoxy, molded
- n Weight: 1.9 grams (approximately)
- n Finish: all external surfaces corrosion resistant and terminal
- n Leads are readily solderable
- n Lead temperature for soldering purposes: 260°C max for 10 seconds

4. Pin configuration



Pin(TO220)	Function
1	Cathode
3	Anode

Pin (TO-263)	Function
1	Drain
2	Anode
3	Source

5. Maximum ratings

Parameter	Symbol	Rating	Units
Peak repetitive reverse voltage Working peak reverse voltage DC blocking voltage	V_{RRM} V_{RWM} V_R	600	V
Average rectified forward current Total device, (Rated VR), $T_C = 150^\circ\text{C}$	$I_{F(AV)}$	8.0	A
Peak repetitive forward current (Rated VR, square wave, 20 kHz), $T_C = 150^\circ\text{C}$	I_{FM}	16	A
Nonrepetitive peak surge current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	100	A
Operating junction temperature and storage temperature range	T_J, T_{stg}	-55 to +175	$^\circ\text{C}$

6. Thermal characteristics

Parameter	Symbol	Rating	Unit
Maximum thermal resistance, junction-to-case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$

7. Electrical characteristics

Parameter	Symbol	Conditions	Rating	Unit
Maximum Instantaneous Forward Voltage (Note 1)	V_F	$I_F=8.0\text{ A}, T_C=25^\circ\text{C}$	1.7	V
Maximum Instantaneous Reverse Current (Note 1)	I_R	rated DC voltage, $T_J=150^\circ\text{C}$ rated DC voltage, $T_J=25^\circ\text{C}$	500 10	μA
Maximum Reverse Recovery Time	t_{rr}	$I_F=1.0\text{ A}, di/dt=50\text{ A}/\mu\text{s}$ $I_F=0.5\text{ A}, I_R=1.0\text{ A}, I_{REC}=0.25\text{ A}$	35 30	ns

Note:1. Pulse test: pulse width = 300 μs , Duty cycle $\leq 2.0\%$.