

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 and 60 nanosecond recovery time
- n 175°C operating junction temperature
- n Popular TO-220 package
- n High voltage capability to 600 volts
- n Low forward drop
- n Low leakage specified @ 150°C case temperature
- n Current derating specified @ both case and ambient temperatures

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	Function
1	Cathode
3	Anode

5. Maximum ratings

($T_C = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test	Rating	Units
Repetitive reverse voltage DC reverse voltage	V_{RRM} V_R		600	V
Average forward current	$I_{F(AV)}$	$T_C=90^\circ\text{C}$, duty=0.5	15	A
RMS forward current	$I_{F(RMS)}$		25	A
Non-repetitive surge forward current	I_{FSM}	$T_J=45^\circ\text{C}$, 8.3ms	110	A
Operating junction temperature and storage temperature range	T_J, T_{stg}		-55 to +150	$^\circ\text{C}$

6. Thermal characteristics

Parameter	Symbol	Rating	Unit
Maximum thermal resistance, junction to case	$R_{\theta JC}$	1.5	$^\circ\text{C}/\text{W}$

7. Electrical characteristics

($T_C = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Reverse leakage current	I_{RM}	$V_R=600\text{V}, T_J=25^\circ\text{C}$			20	μA
		$V_R=600\text{V}, T_J=125^\circ\text{C}$			250	μA
Forward voltage	V_F	$I_F=15\text{A}, T_J=25^\circ\text{C}$		1.4	2.0	V
		$I_F=15\text{A}, T_J=125^\circ\text{C}$		1.2		V
Reverse recovery time	t_{rr}	$I_F=1\text{A}, V_R=30\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$		30		ns
Reverse recovery time	t_{rr}	$I_F=15\text{A}$ $V_R=400\text{V}$ $di_F/dt=-200\text{A}/\mu\text{s}$	$T_J=25^\circ\text{C}$	40		ns
Reverse recovery time	t_{rr}		$T_J=100^\circ\text{C}$	80		ns
Reverse recovery charge	Q_{rr}		$T_J=100^\circ\text{C}$	120		nC
Max.reverse recovery current	I_{RRM}		$T_J=100^\circ\text{C}$		3.0	