

SWITCHMODE Power Rectifiers ULTRAFAST RECTIFIERS 8.0 A, 800 V – 1000 V

RoHS compliant

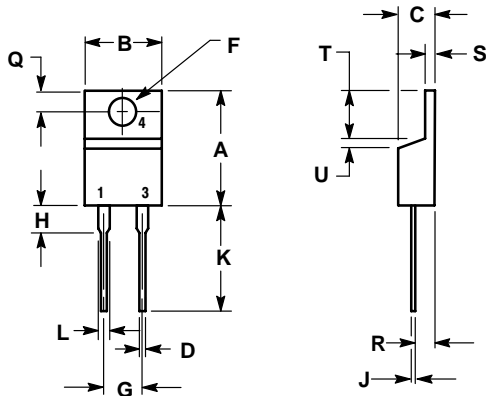
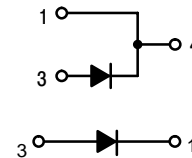
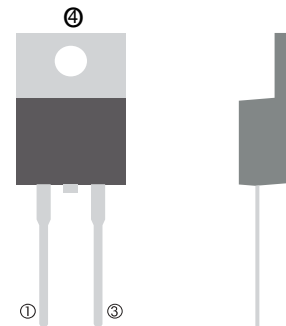
Features

- 20 mJ Avalanche Energy Guaranteed
- Excellent Protection Against Voltage Transients in Switching Inductive Load Circuits
- Ultrafast 75 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Epoxy Meets UL 94 V-0 @ 0.125 in.
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 1000 V
- Pb-Free Packages are Available*

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

TO-220AC Unit : inch (mm)



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.595	0.620	15.11	15.75
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.82
D	0.025	0.035	0.64	0.89
F	0.142	0.147	3.61	3.73
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.14	1.39
T	0.235	0.255	5.97	6.48
U	0.000	0.050	0.000	1.27

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	800 1000	V
Average Rectified Forward Current (Rated V_R , $T_C = 150^\circ\text{C}$) Total Device	$I_{F(AV)}$	8.0	A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 150^\circ\text{C}$)	I_{FM}	16	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	100	A
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +175	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	2.0	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 8.0\text{ A}$, $T_C = 150^\circ\text{C}$) ($i_F = 8.0\text{ A}$, $T_C = 25^\circ\text{C}$)	v_F	1.5 1.8	V
Maximum Instantaneous Reverse Current (Note 1) (Rated DC Voltage, $T_C = 100^\circ\text{C}$) (Rated DC Voltage, $T_C = 25^\circ\text{C}$)	i_R	500 25	μA
Maximum Reverse Recovery Time ($I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu\text{s}$) ($I_F = 0.5\text{ A}$, $i_R = 1.0\text{ A}$, $I_{REC} = 0.25\text{ A}$)	t_{rr}	100 75	ns
Controlled Avalanche Energy (See Test Circuit in Figure 6)	W_{AVAIL}	20	mJ

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

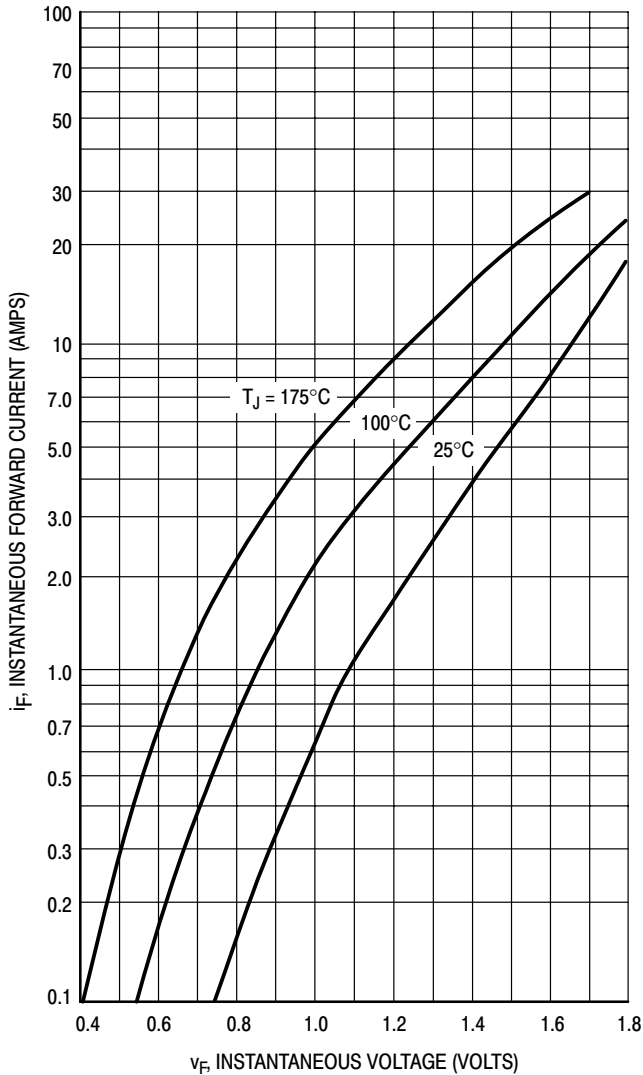


Figure 1. Typical Forward Voltage

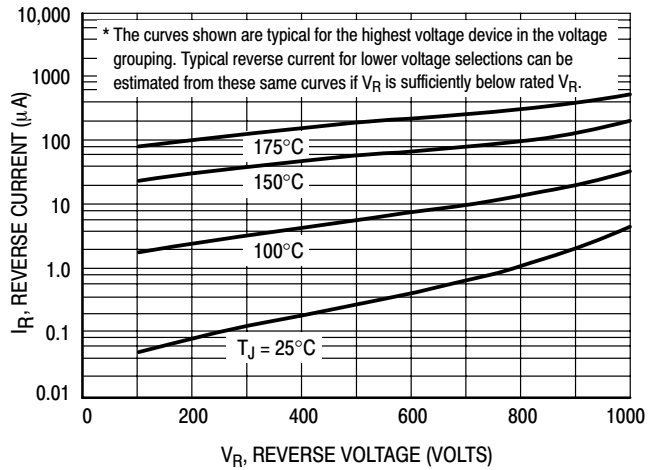


Figure 2. Typical Reverse Current*

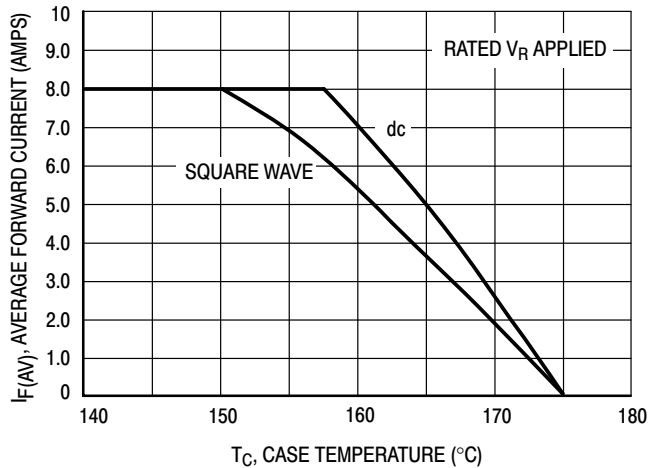


Figure 3. Current Derating, Case

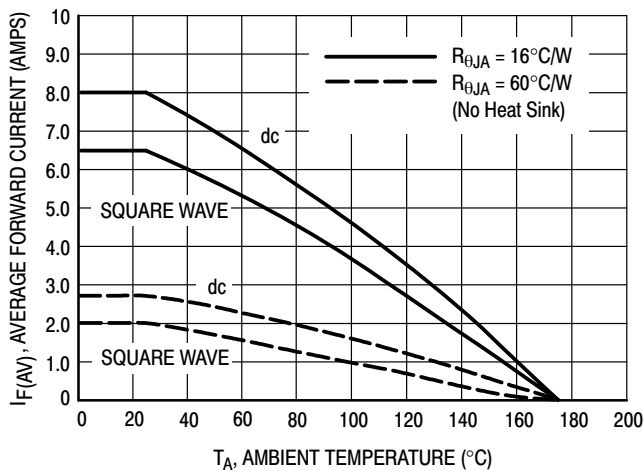


Figure 4. Current Derating, Ambient

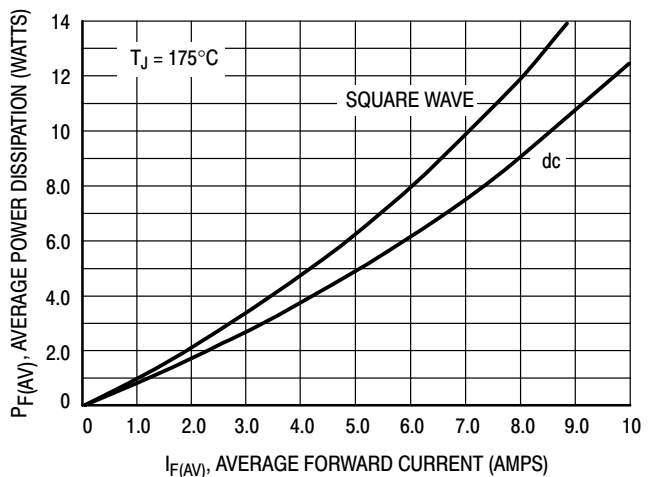


Figure 5. Power Dissipation

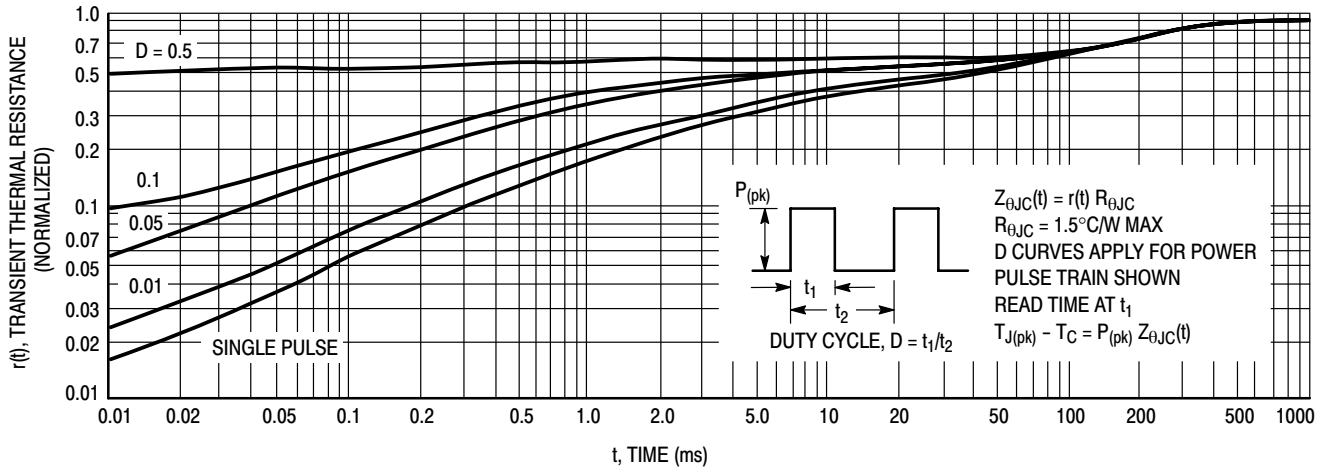


Figure 9. Thermal Response

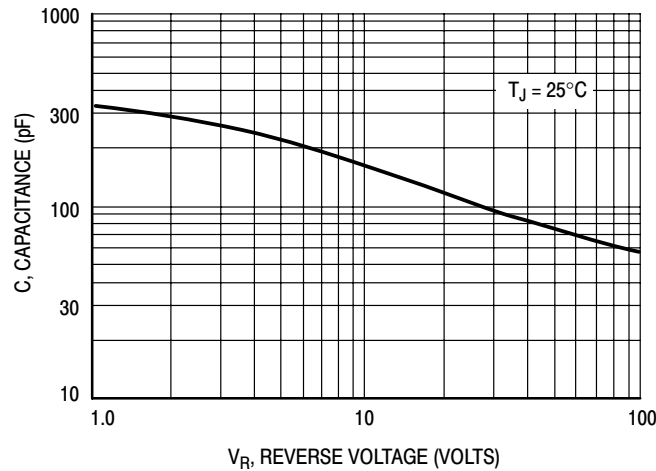


Figure 10. Typical Capacitance