

## Switchmode Power Rectifiers DPAK Surface Mount Package

... designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

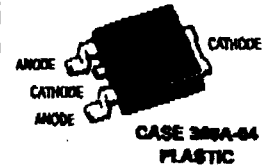
- Ultrafast 35 Nanosecond Recovery Time
- Low Forward Voltage Drop
- Low Leakage

### Mechanical Characteristics

- Case: Epoxy, Molded
- Finish: All External Surface Corrosion Resistance and Terminal Leads are Readily Solderable
- Lead Formed for Surface Mount
- Available in 16 mm Tape and Reel or Plastic Rails
- Compact Size
- Lead and Mounting Surface Temperature for Soldering Purpose 260°C Max. for 10 Seconds

**MURD305**  
**MURD310**  
**MURD315**  
**MURD320**

**ULTRAFAST  
 RECTIFIERS  
 3 AMPERES  
 50 TO 200 VOLTS**



### MAXIMUM RATINGS

Rating	Symbol	MURD				Unit
		305	310	315	320	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	150	200	Volts
Average Rectified Forward Current ( $T_C = 150^\circ\text{C}$ , Rated $V_R$ )	$I_{FAV}$	3				Amps
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz, $T_C = 150^\circ\text{C}$ )	$I_{FRM}$	6				Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, 60 Hz)	$I_{FSM}$	75				Amps
Operating Junction and Storage Temperature	$T_J, T_{stg}$	- 65 to +175				$^\circ\text{C}$

### THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Case Junction to Ambient (1)	$R_{\theta JC}$ $R_{\theta JA}$	6 80	$^\circ\text{C/W}$

### ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage Drop (2) ( $I_F = 3$ Amps, $T_J = 25^\circ\text{C}$ ) ( $I_F = 3$ Amps, $T_J = 125^\circ\text{C}$ )	$V_F$	0.95 0.75	Volts
Maximum Instantaneous Reverse Current (2) ( $T_J = 25^\circ\text{C}$ , Rated dc Voltage) ( $T_J = 125^\circ\text{C}$ , Rated dc Voltage)	$I_R$	5 500	$\mu\text{A}$
Maximum Reverse Recovery Time ( $I_F = 1$ Amp, $dI/dt = 50$ Amps/ $\mu\text{s}$ , $V_R = 30$ V, $T_J = 25^\circ\text{C}$ ) ( $I_F = 0.5$ Amp, $I_R = 1$ Amp, $I_{REC} = 0.25$ A, $V_R = 30$ V, $T_J = 25^\circ\text{C}$ )	$t_{rr}$	35 25	ns

(1) Rating applies when surface mounted on the minimum pad sizes recommended.  
 (2) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

# MURD305, MURD310, MURD315, MURD320

## TYPICAL CHARACTERISTICS

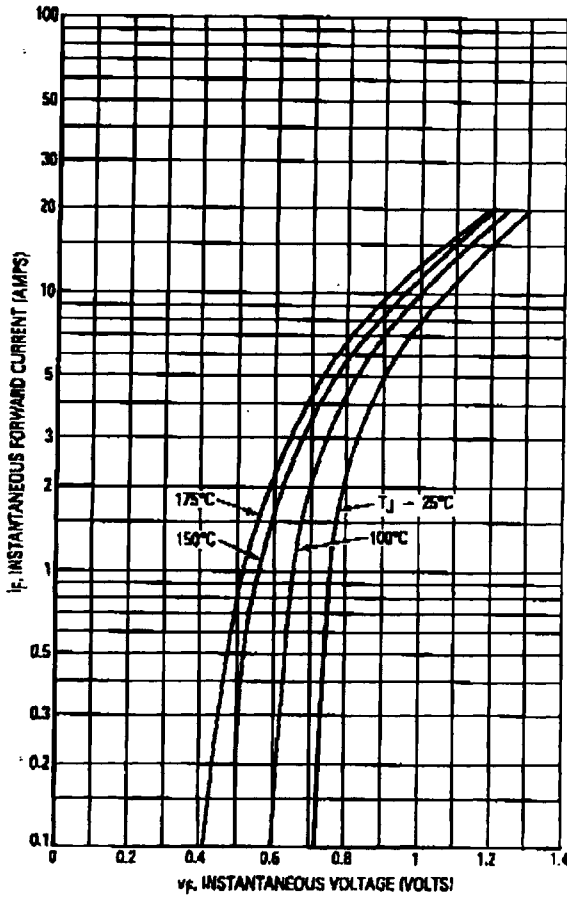
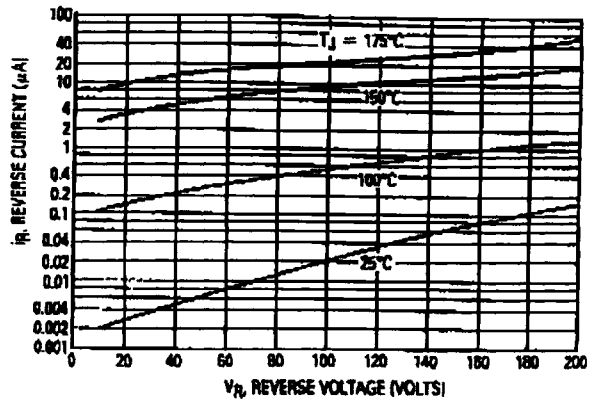


Figure 1. Typical Forward Voltage



\*The curves shown are typical for the highest voltage device in the voltage grouping. Typical reverse current for lower voltage selections can be estimated from these curves if  $V_R$  is sufficient below rated  $V_R$ .

Figure 2. Typical Reverse Current\*

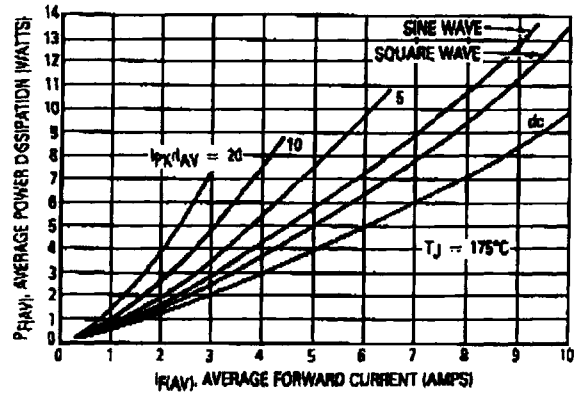


Figure 3. Average Power Dissipation

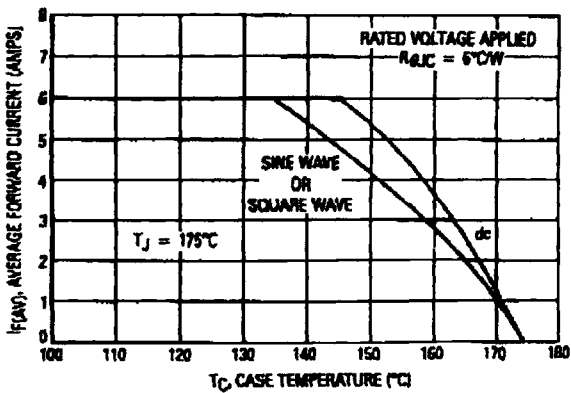


Figure 4. Current Derating, Case

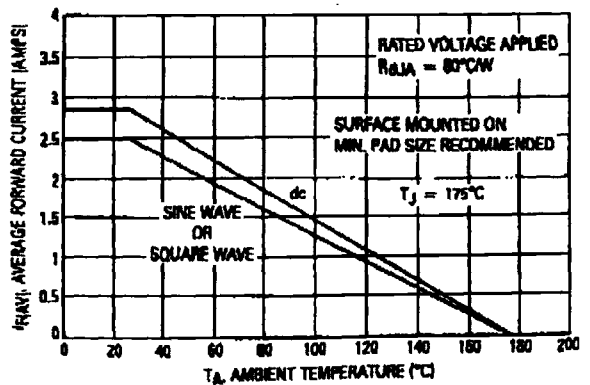


Figure 5. Current Derating, Ambient

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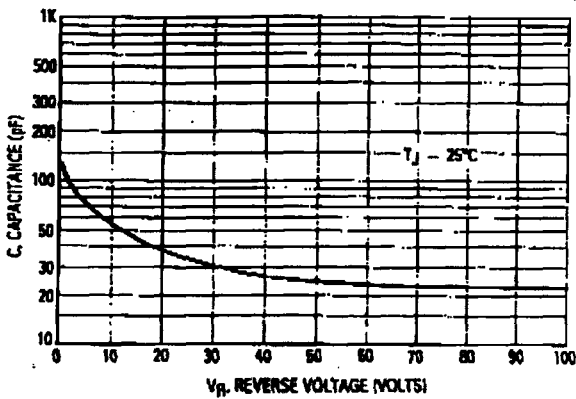
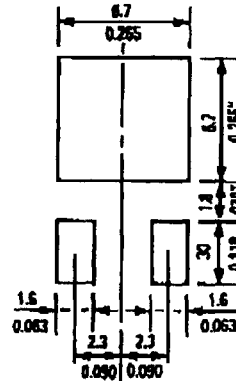


Figure 8. Typical Capacitance

## MINIMUM PAD SIZES RECOMMENDED FOR SURFACE MOUNTED APPLICATIONS



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## OUTLINE DIMENSIONS

