

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

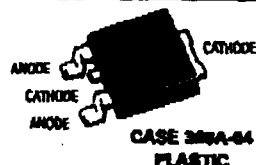
Mechanical Characteristics

- 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_F , 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	$^\circ\text{C/W}$
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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	μA
Maximum Reverse Recovery Time ($I_F = 1$ Amp, $dI/dt = 50$ Amps/ μs , $V_R = 30$ V, $T_J = 25^\circ\text{C}$) ($I_F = 0.5$ Amp, $I_R = 1$ Amp, $t_{REC} = 0.25$ 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 size recommended.

(2) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.

MURD305, MURD310, MURD315, MURD320

TYPICAL CHARACTERISTICS

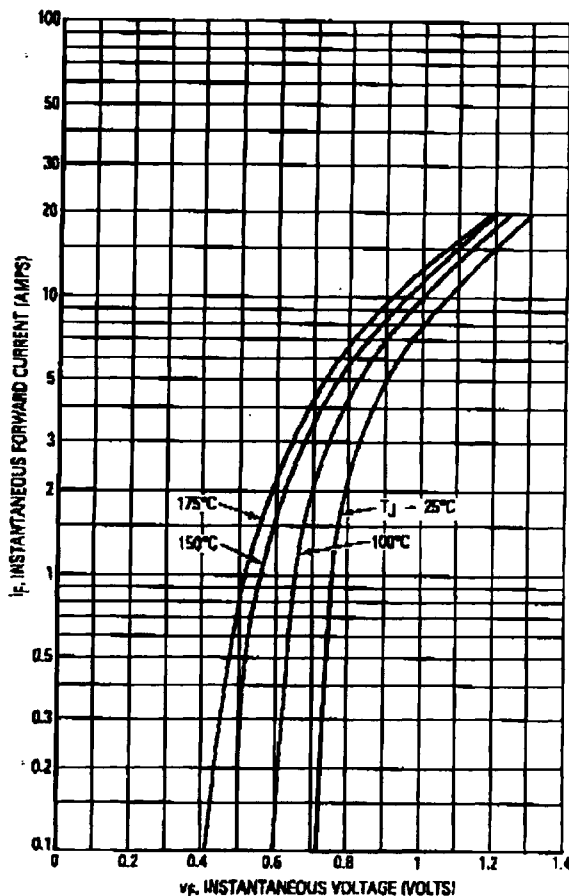
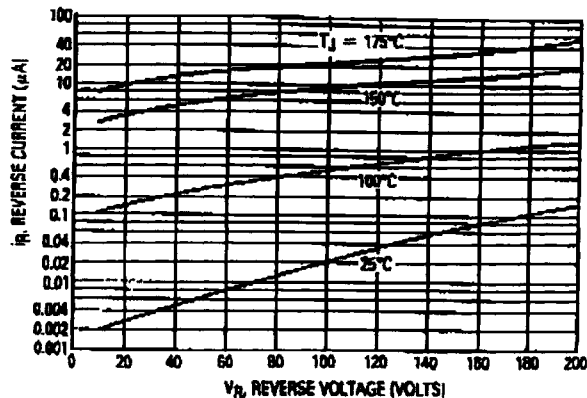


Figure 1. Typical Forward Voltage



*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*

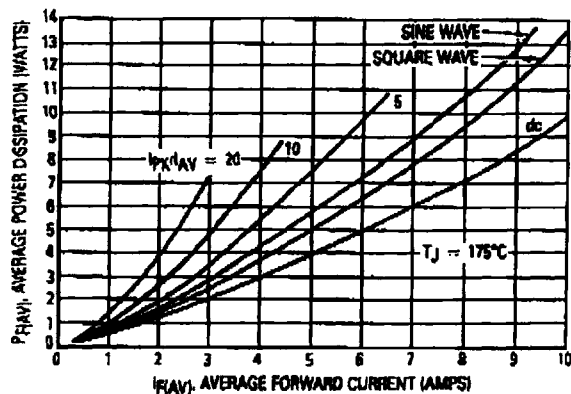


Figure 3. Average Power Dissipation

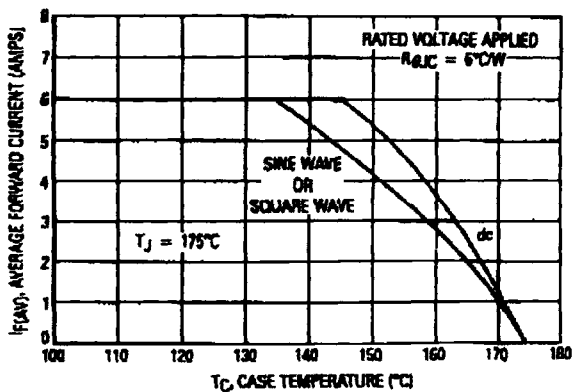


Figure 4. Current Derating, Case

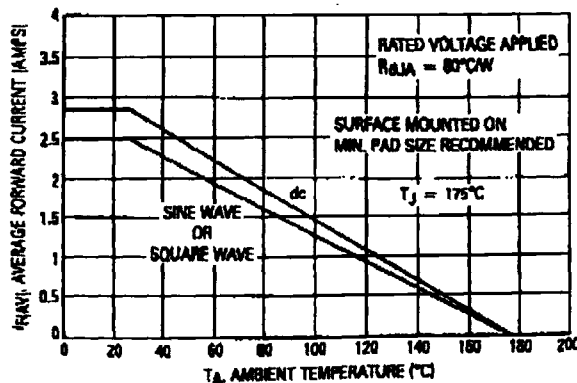


Figure 5. Current Derating, Ambient

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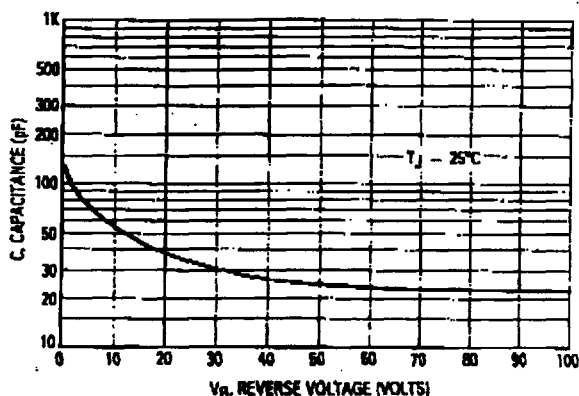
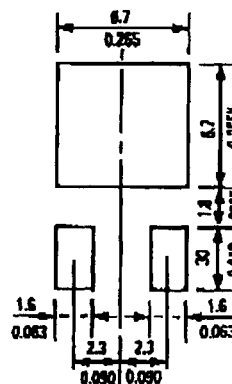


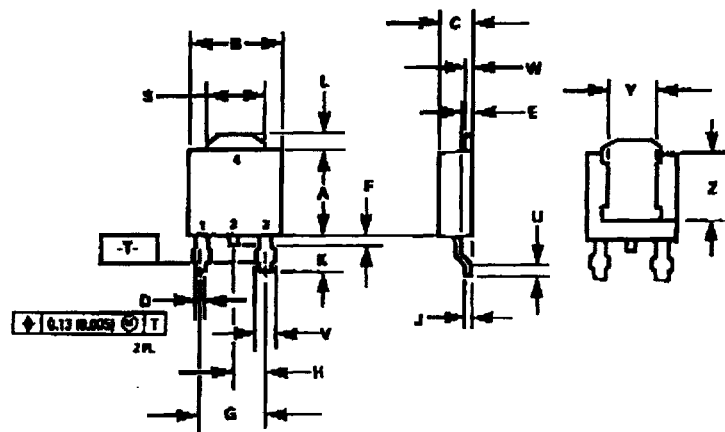
Figure 8. Typical Capacitance

MINIMUM PAD SIZES RECOMMENDED FOR SURFACE MOUNTED APPLICATIONS



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OUTLINE DIMENSIONS



NOTES:

1. SURFACE "T" IS BOTH A DATUM AND A MOUNTING SURFACE.
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
3. CONTROLLING DIMENSION: INCH.

CASE 303A-04
PLASTIC

STYLE 3:

1. ANODE
2. CATHODE
3. ANODE
4. CATHODE

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.32	5.32	0.210	0.210
B	5.35	5.73	0.210	0.225
C	2.19	2.30	0.086	0.091
D	0.80	0.80	0.031	0.031
E	0.57	1.00	0.022	0.040
F	0.80	0.80	0.031	0.031
G	4.50 BSC		0.177 BSC	
H	2.29 BSC		0.090 BSC	
J	0.40	0.50	0.016	0.020
K	2.90	2.90	0.114	0.114
L	0.80	1.27	0.031	0.050
M	0.21	0.40	0.008	0.016
N	0.51	—	0.020	—
V	0.77	1.14	0.030	0.045
W	0.84	0.84	0.033	0.033
Y	4.32	—	0.170	—
Z	3.00	—	0.118	—