

MOTOROLA
SEMICONDUCTOR
 TECHNICAL DATA

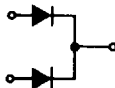
SWITCHMODE Power Rectifiers
DPAK Surface Mount Package

... 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
- Dual Rectifier Single Chip Construction
- Lead Temperature for Soldering Purpose: 260°C for 10 Seconds



MURD605CT
MURD610CT
MURD615CT
MURD620CT

MURD620CT is a
 Motorola Preferred Device

ULTRAFAST
RECTIFIERS
6 AMPERES
50 TO 200 VOLTS



CASE 369A-11
 PLASTIC

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MAXIMUM RATINGS

Rating	Symbol	MURD				Unit
		605CT	610CT	615CT	620CT	
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 Voltage ($T_C = 145^\circ\text{C}$, Rated V_R)	$I_F(AV)$	3 6				Amps
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 145^\circ\text{C}$)	I_F	6				Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, 60 Hz)	I_{FSM}	63				Amps
Operating Junction and Storage Temperature	T_J, T_{stg}	-65 to +175				$^\circ\text{C}$

THERMAL CHARACTERISTICS PER DIODE

Thermal Resistance, Junction to Case Junction to Ambient (1)	$R_{\theta JC}$ $R_{\theta JA}$	9 80	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS PER DIODE

Maximum Instantaneous Forward Voltage Drop (2) $I_F = 3$ Amps, $T_C = 25^\circ\text{C}$ $I_F = 3$ Amps, $T_C = 125^\circ\text{C}$ $I_F = 6$ Amps, $T_C = 25^\circ\text{C}$ $I_F = 6$ Amps, $T_C = 125^\circ\text{C}$	V_F	1 0.95 1.2 1.1	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	5 250	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, $I_{REC} = 0.25$ 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 size recommended.
 (2) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$

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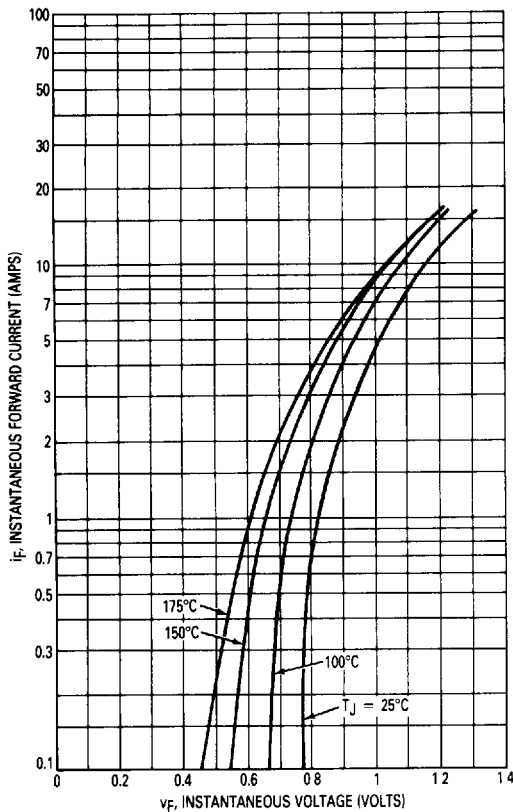
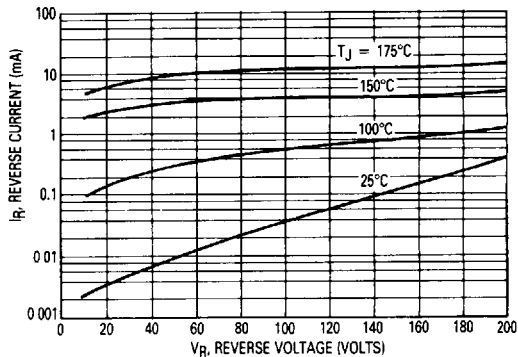


Figure 1. Typical Forward Voltage (Per Leg)



*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 Leakage Current* (Per Leg)

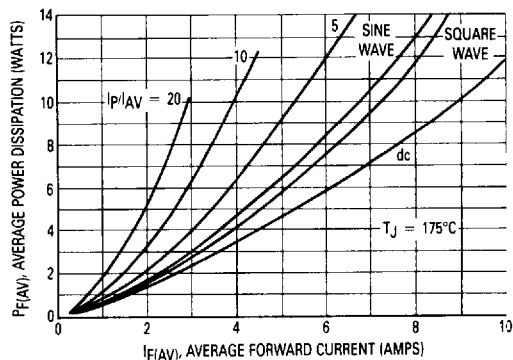


Figure 3. Average Power Dissipation (Per Leg)

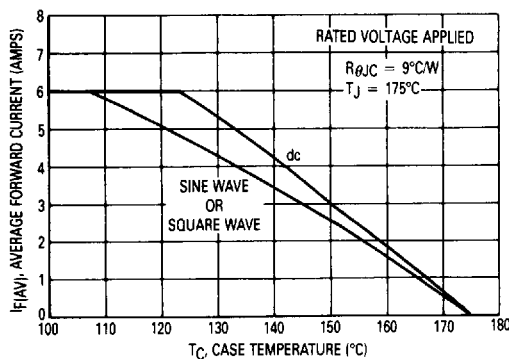


Figure 4. Current Derating, Case (Per Leg)

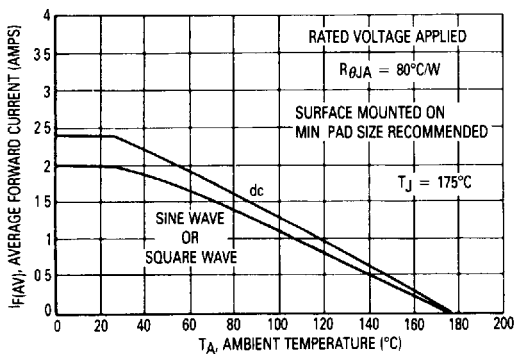


Figure 5. Current Derating, Ambient (Per Leg)

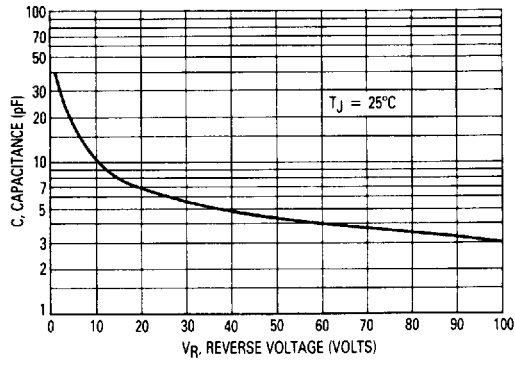


Figure 6. Typical Capacitance (Per Leg)