

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

MURD605CT
MURD610CT
MURD615CT
MURD620CT

Switchmode Power Rectifiers
DKAK Surface Mount Package

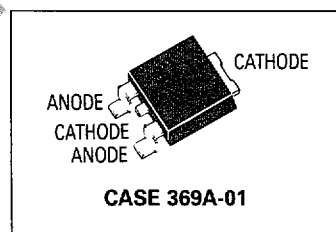
... designed for use in switching power supplies, inverters and as free wheeling diodes, these state-of-the-art devices have the following features:

- 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

ULTRAFAST
RECTIFIERS
6 AMPERES
50 TO 200 VOLTS



MAXIMUM RATINGS

Rating	Symbol	MURD				Unit
		605CT	610CT	615CT	620CT	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWV} 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	$R_{\theta JC}$	9	$^\circ\text{C/W}$
Junction to Ambient (1)	$R_{\theta JA}$	80	

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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TYPICAL CHARACTERISTICS

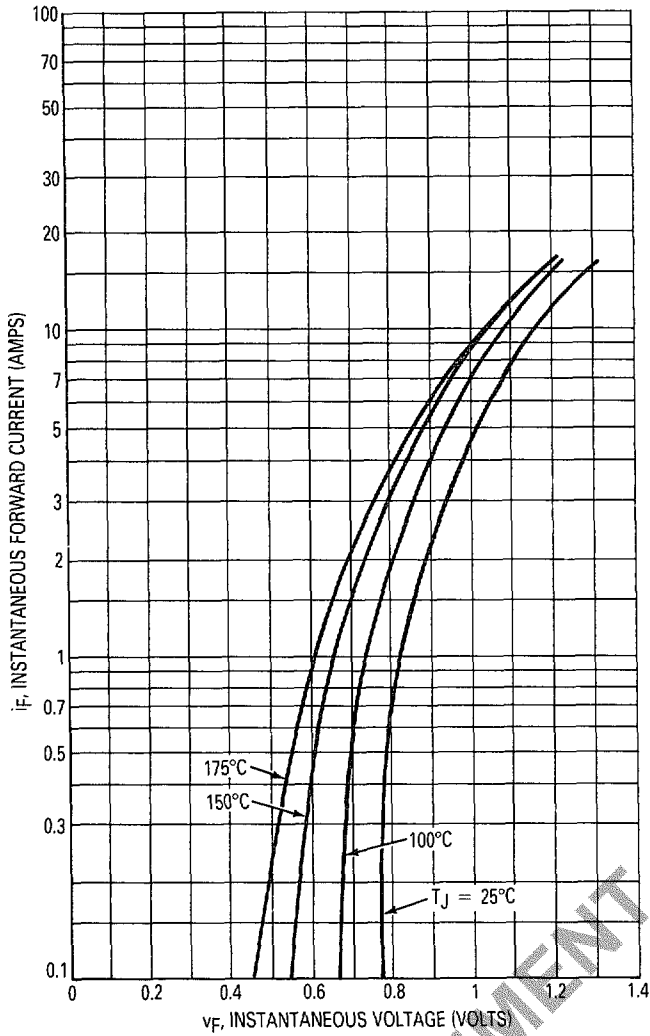
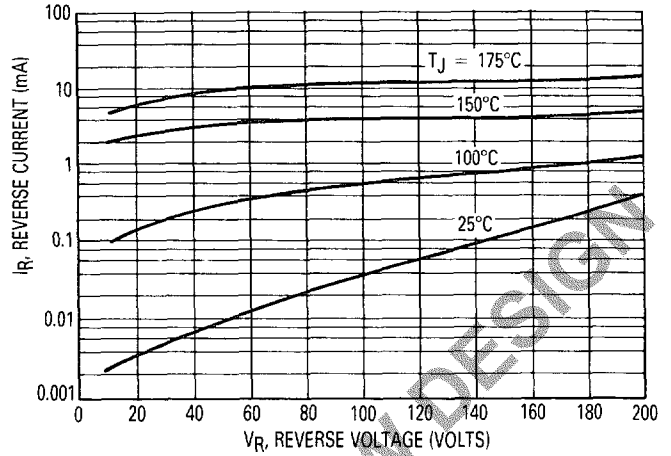


Figure 1. Typical Forward Voltage (Per Leg)



*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)

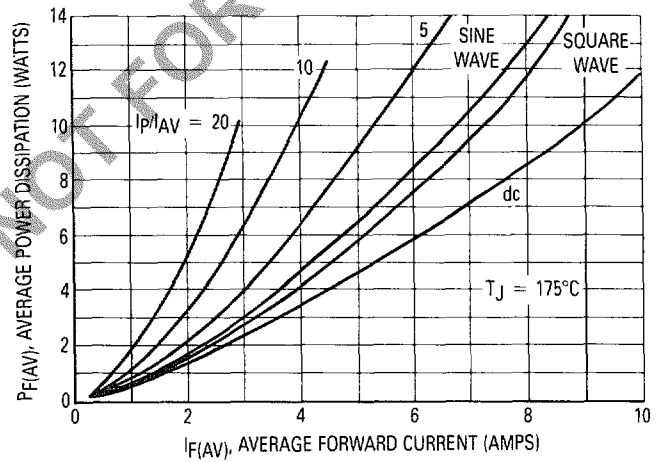


Figure 3. Average Power Dissipation (Per Leg)

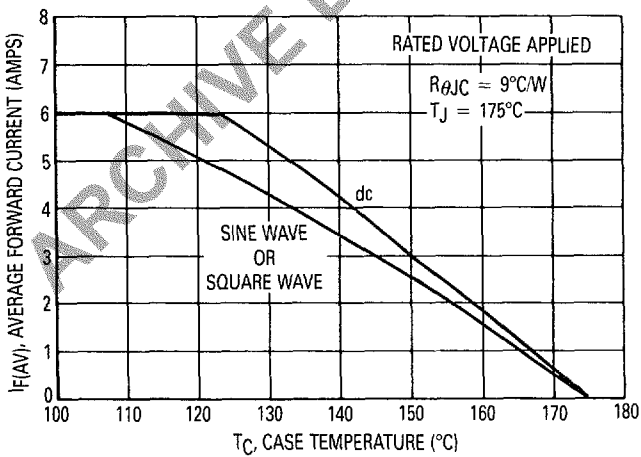


Figure 4. Current Derating, Case (Per Leg)

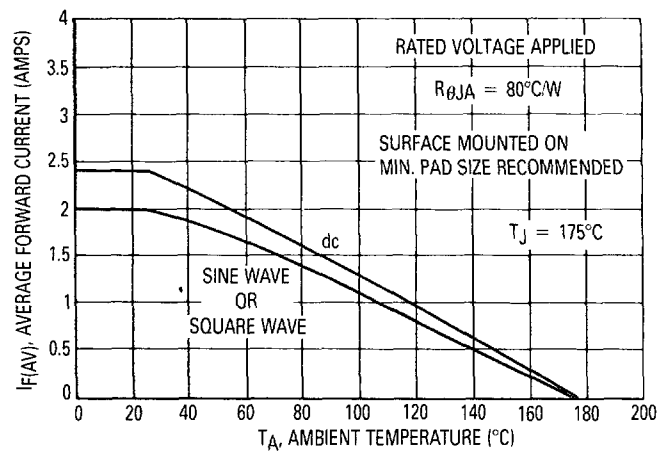


Figure 5. Current Derating, Ambient (Per Leg)

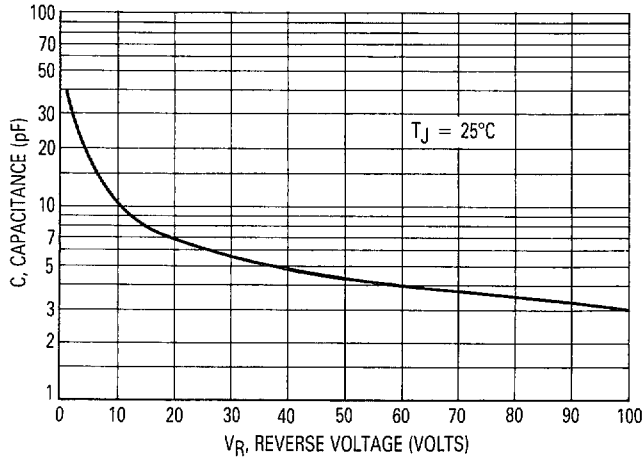
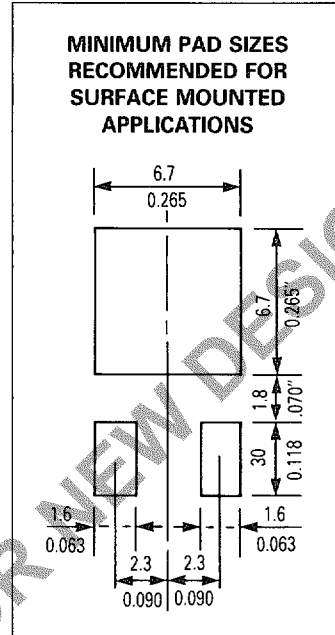
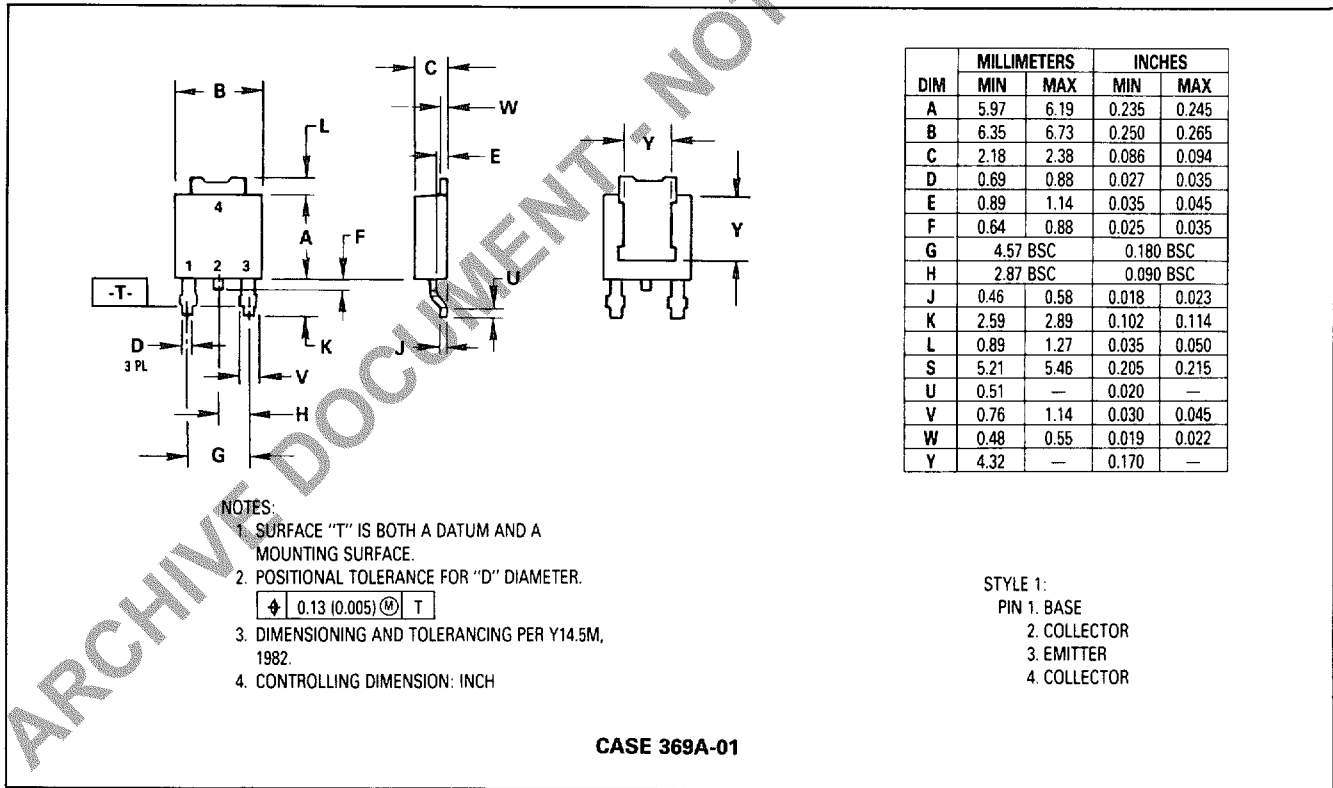


Figure 6. Typical Capacitance (Per Leg)



OUTLINE DIMENSIONS



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