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

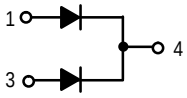
Mechanical Characteristics:

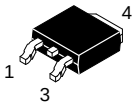
- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per reel, by adding a "T4'' suffix to the part number
- Marking: U620T

MURD620CT

MURD620CT is a Motorola Preferred Device

ULTRAFAST RECTIFIERS
6 AMPERES
200 VOLTS





CASE 369A–13
PLASTIC

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	200	Volts
Average Rectified Forward Voltage (T_C = 140°C, Rated V_R)	Per Diode Per Device	$I_{F(AV)}$	3 6	Amps
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 145°C)	Per Diode	I_F	6	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, 60 Hz)		I_{FSM}	50	Amps
Operating Junction and Storage Temperature		T_J, T_{stg}	–65 to +175	°C

THERMAL CHARACTERISTICS PER DIODE

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

ELECTRICAL CHARACTERISTICS PER DIODE

Maximum Instantaneous Forward Voltage Drop (2) (i_F = 3 Amps, T_C = 25°C) (i_F = 3 Amps, T_C = 125°C) (i_F = 6 Amps, T_C = 25°C) (i_F = 6 Amps, T_C = 125°C)	v_F	 1 0.96 1.2 1.13	Volts
Maximum Instantaneous Reverse Current (2) (T_J = 25°C, Rated dc Voltage) (T_J = 125°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°C) (I_F = 0.5 Amp, i_R = 1 Amp, I_{REC} = 0.25 A, V_R = 30 V, T_J = 25°C)	t_{rr}	 35 25	ns

(1) Rating applies when surface mounted on the minimum pad sizes recommended.
(2) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

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Preferred devices are Motorola recommended choices for future use and best overall value.

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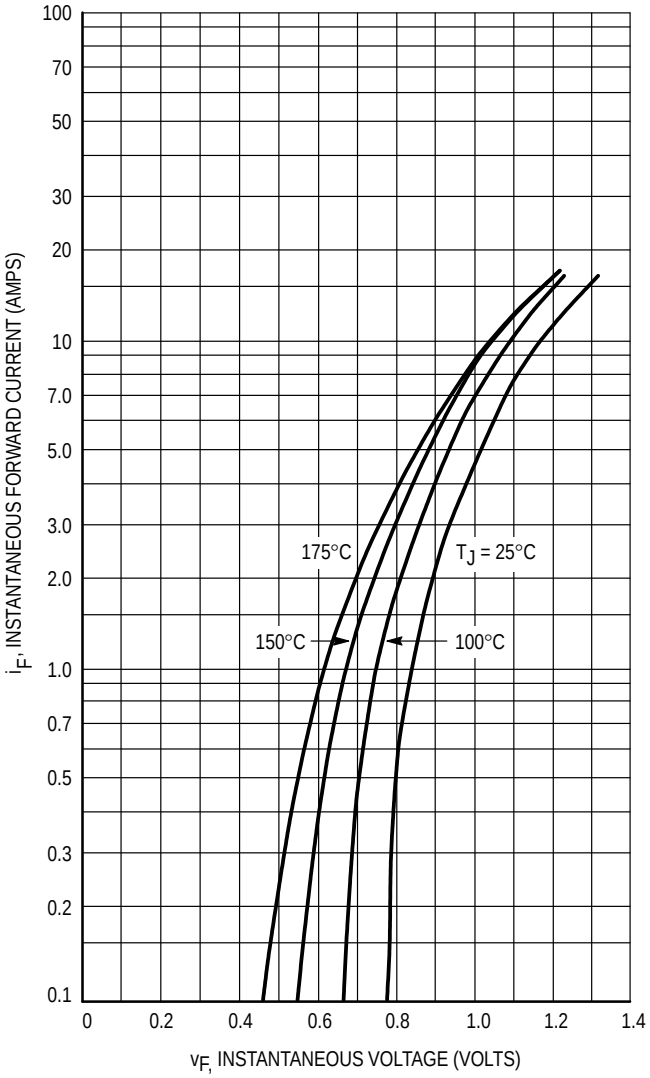


Figure 1. Typical Forward Voltage (Per Leg)

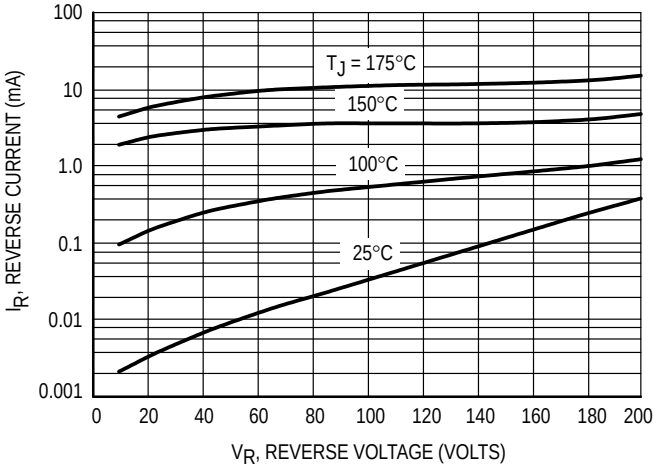


Figure 2. Typical Leakage Current* (Per Leg)

* 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 sufficiently below rated V_R.

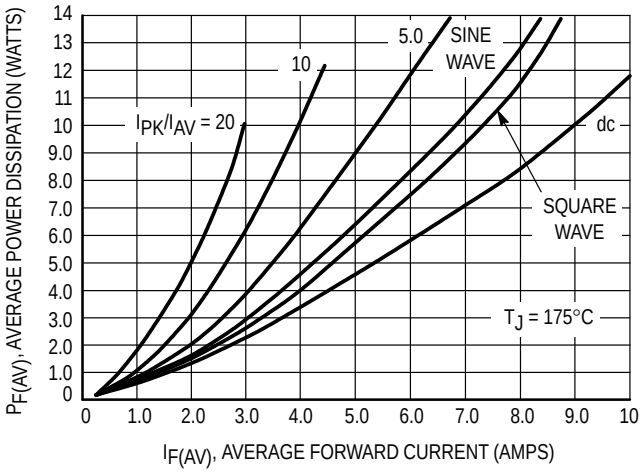


Figure 3. Average Power Dissipation (Per Leg)

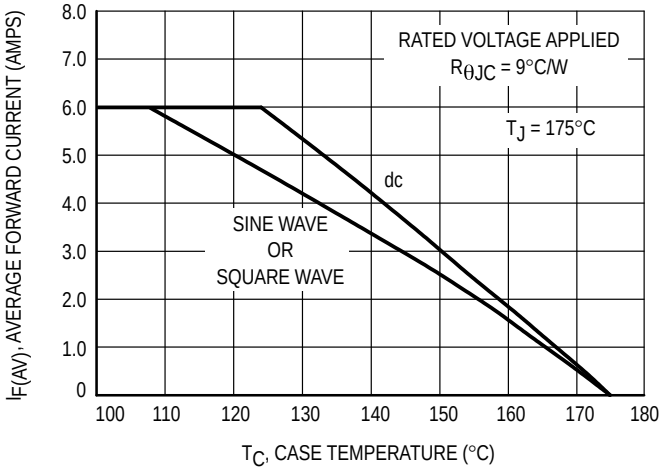


Figure 4. Current Derating, Case (Per Leg)

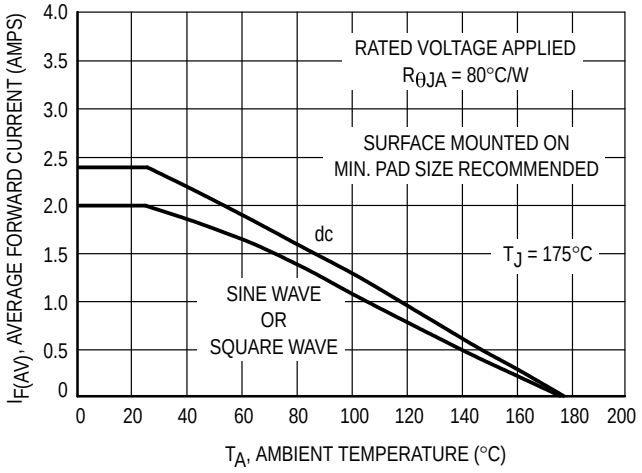


Figure 5. Current Derating, Ambient (Per Leg)

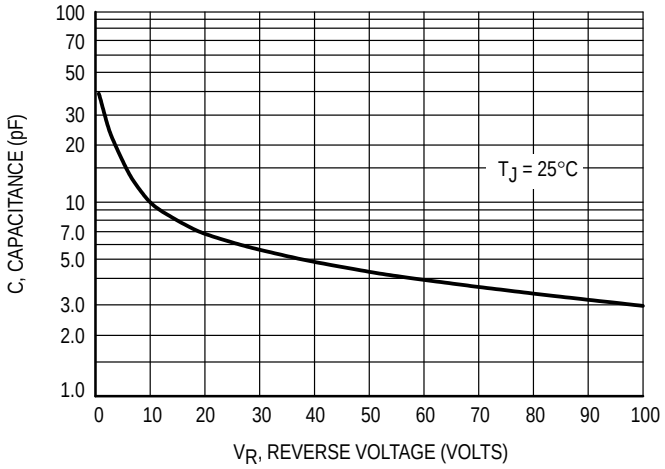
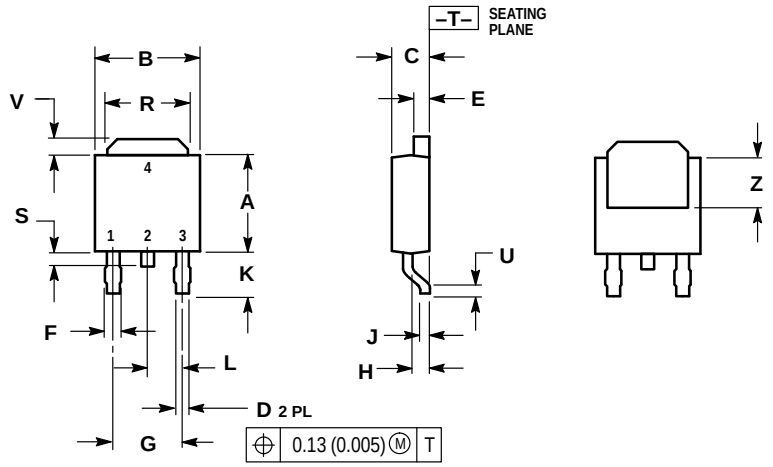


Figure 6. Typical Capacitance (Per Leg)

PACKAGE DIMENSIONS



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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.235	0.250	5.97	6.35
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.180 BSC		4.58 BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.175	0.215	4.45	5.46
S	0.020	0.050	0.51	1.27
U	0.020	—	0.51	—
V	0.030	0.050	0.77	1.27
Z	0.138	—	3.51	—

CASE 369A–13
ISSUE Y

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