MUR1610CT, MUR1615CT, MUR1620CT, MUR1640CT, MUR1660CT

SWITCHMODE™ Power Rectifiers

. . . 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 and 60 Nanosecond Recovery Times
- 175°C Operating Junction Temperature
- Popular TO–220 Package
- Epoxy Meets UL94, V_O @ 1/8″
- High Temperature Glass Passivated Junction
- High Voltage Capability to 600 Volts
- Low Leakage Specified @ 150°C Case Temperature
- Current Derating @ Both Case and Ambient Temperatures

Mechanical Characteristics:

- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: U1610, U1615, U1620, U1640, U1660

MAXIMUM RATINGS

Please See the Table on the Following Page

勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-54151736
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

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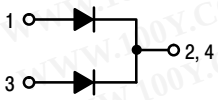
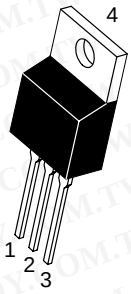
http://onsemi.com

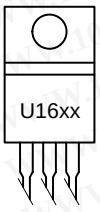
ULTRAFAST RECTIFIERS 8.0 AMPERES 100–600 VOLTS





TO–220AB
CASE 221A
PLASTIC

MARKING DIAGRAM



U16xx = Device Code
xx = 10, 15, 20, 40 or 60

ORDERING INFORMATION

Device	Package	Shipping
MUR1610CT	TO–220	50 Units/Rail
MUR1615CT	TO–220	50 Units/Rail
MUR1620CT	TO–220	50 Units/Rail
MUR1640CT	TO–220	50 Units/Rail
MUR1660CT	TO–220	50 Units/Rail

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MAXIMUM RATINGS

Rating	Symbol	MUR16 10CT	MUR16 15CT	MUR16 20CT	MUR16 40CT	MUR16 60CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	100	150	200	400	600	Volts
Average Rectified Forward Current Per Leg Total Device, (Rated V_R), T_C = 150°C Total Device	$I_{F(AV)}$	8.0 16					Amps
Peak Rectified Forward Current Per Diode Leg (Rated V_R, Square Wave, 20 kHz), T_C = 150°C	I_{FM}	16					Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	100					Amps
Operating Junction Temperature and Storage Temperature	T_J, T_{stg}	– 65 to +175					°C

THERMAL CHARACTERISTICS (Per Diode Leg)

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0			2.0		°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 1.) (i_F = 8.0 Amps, T_C = 150°C) (i_F = 8.0 Amps, T_C = 25°C)	v_F	0.895 0.975			1.00 1.30	1.20 1.50	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, T_C = 150°C) (Rated dc Voltage, T_C = 25°C)	i_R	250 5.0			500 10		µA
Maximum Reverse Recovery Time (I_F = 1.0 Amp, di/dt = 50 Amps/µs) (I_F = 0.5 Amp, I_R = 1.0 Amp, I_{REC} = 0.25 Amp)	t_{rr}	35 25			60 50		ns

1. Pulse Test: Pulse Width = 300 µs, Duty Cycle ≤ 2.0%

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MUR1610CT, MUR1615CT, MUR1620CT

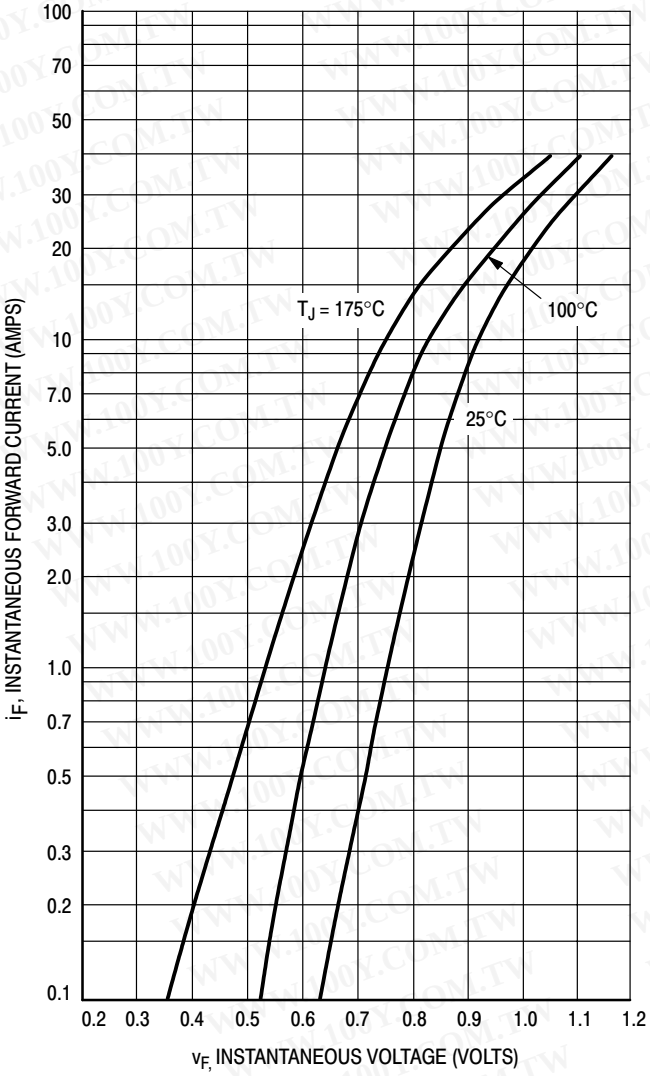

Figure 1. Typical Forward Voltage, Per Leg

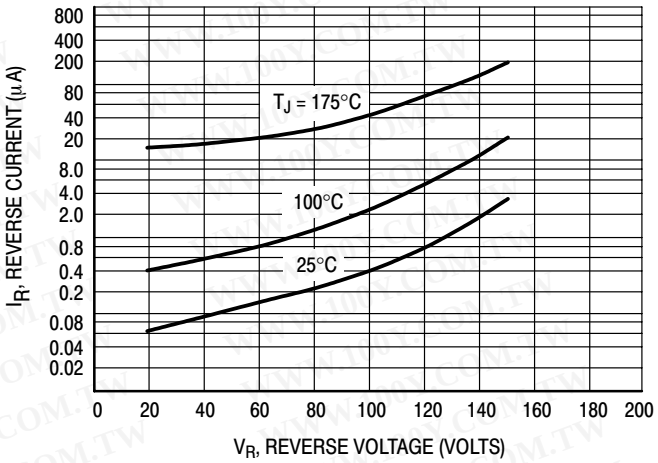

Figure 2. Typical Reverse Current, Per Leg*

* 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 same curves if V_R is sufficiently below rated V_R.

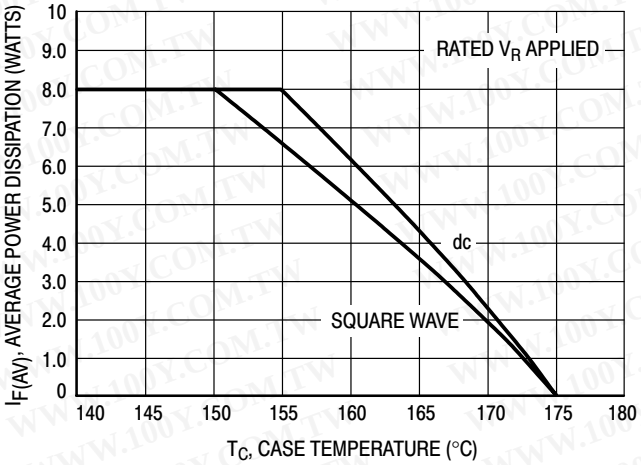

Figure 3. Current Derating, Case, Per Leg

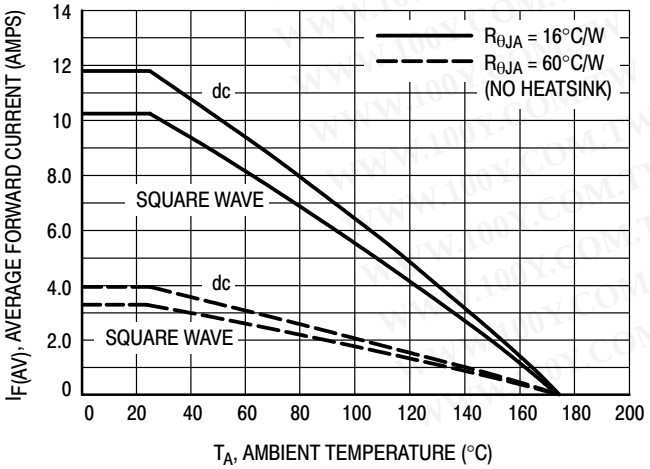

Figure 4. Current Derating, Ambient, Per Leg

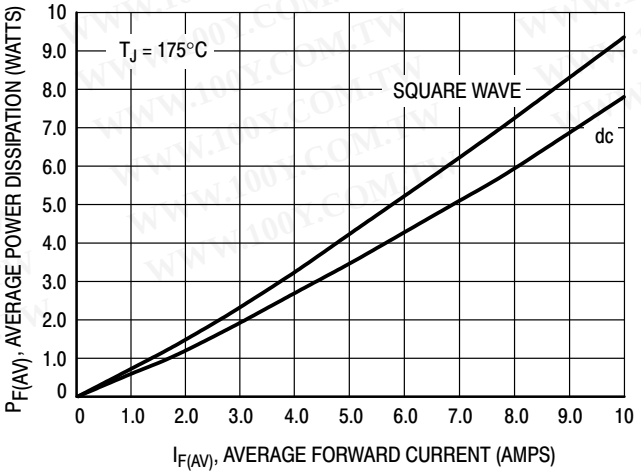

Figure 5. Power Dissipation, Per Leg

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MUR1640CT

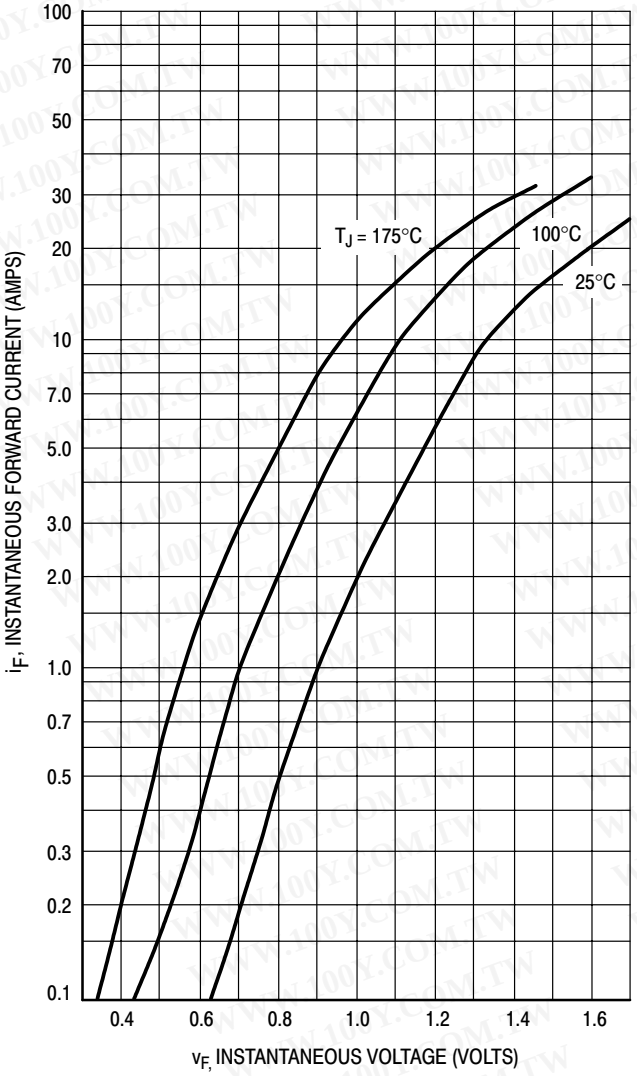

Figure 6. Typical Forward Voltage, Per Leg

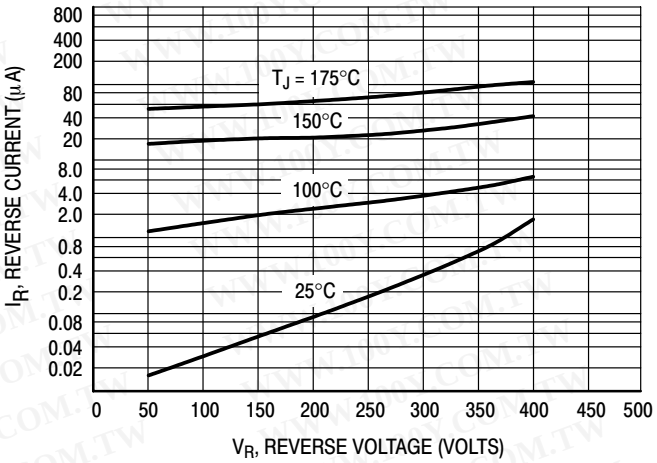

Figure 7. Typical Reverse Current, Per Leg*

* 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.

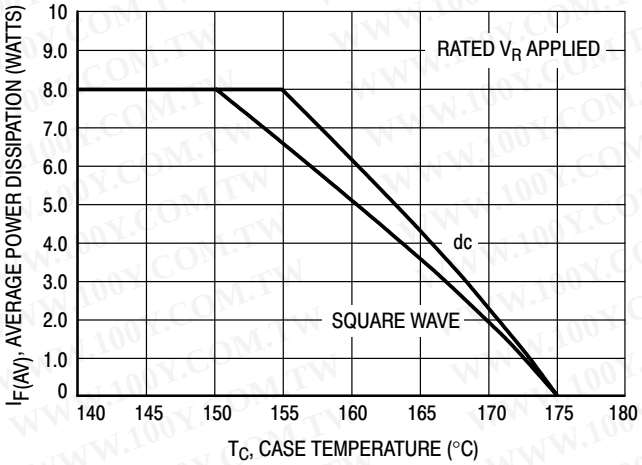

Figure 8. Current Derating, Case, Per Leg

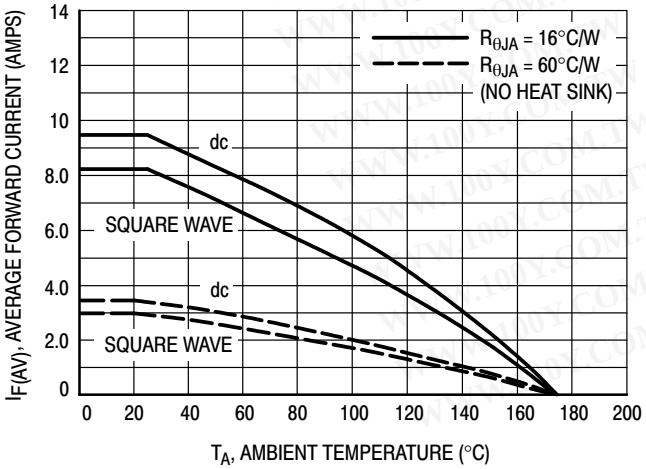

Figure 9. Current Derating, Ambient, Per Leg

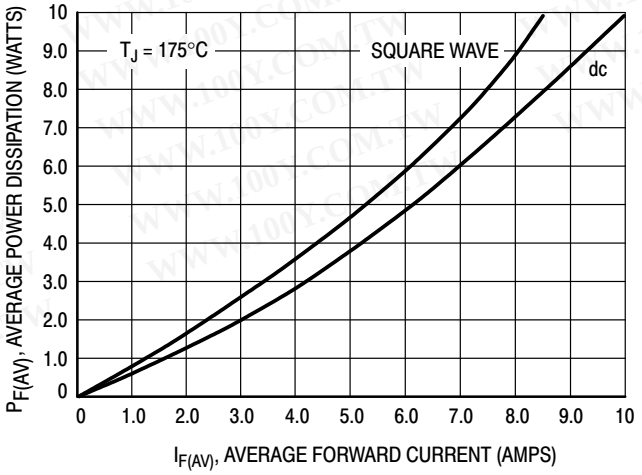

Figure 10. Power Dissipation, Per Leg

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MUR1660CT

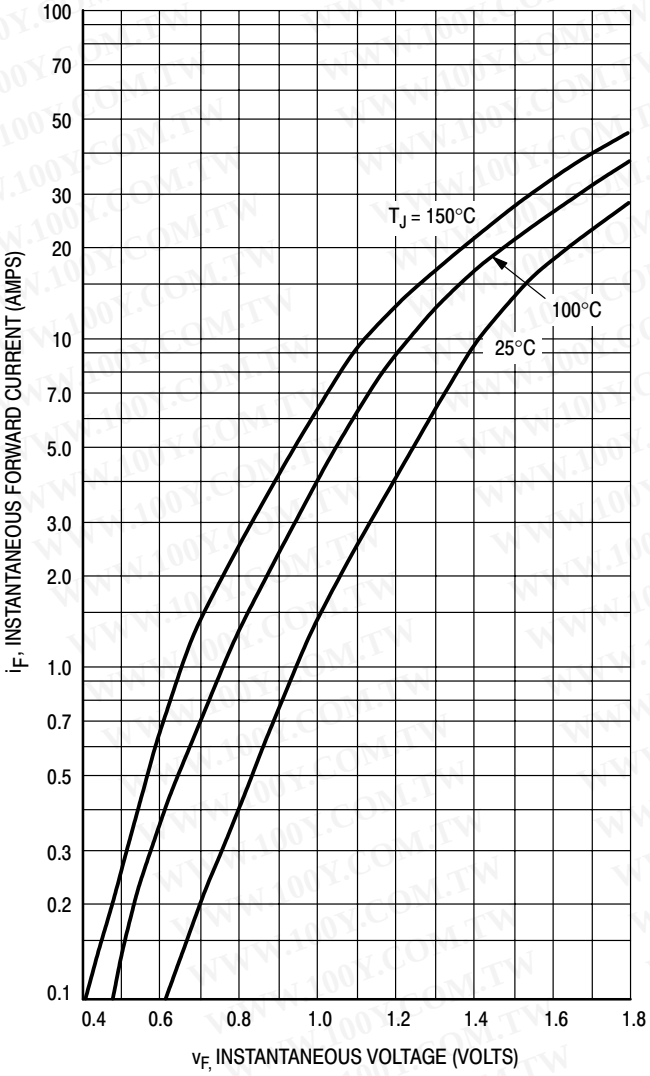

Figure 11. Typical Forward Voltage, Per Leg

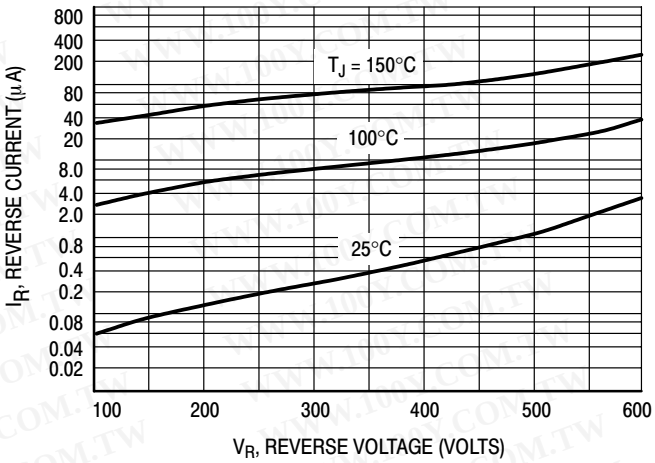

Figure 12. Typical Reverse Current, Per Leg*

* 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 same curves if V_R is sufficiently below rated V_R.

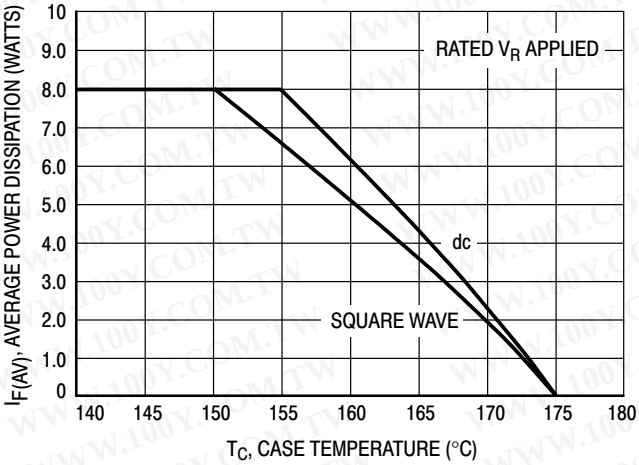

Figure 13. Current Derating, Case, Per Leg

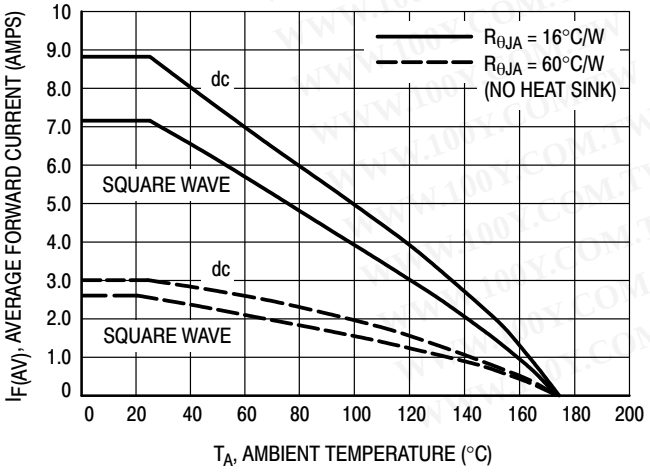

Figure 14. Current Derating, Ambient, Per Leg

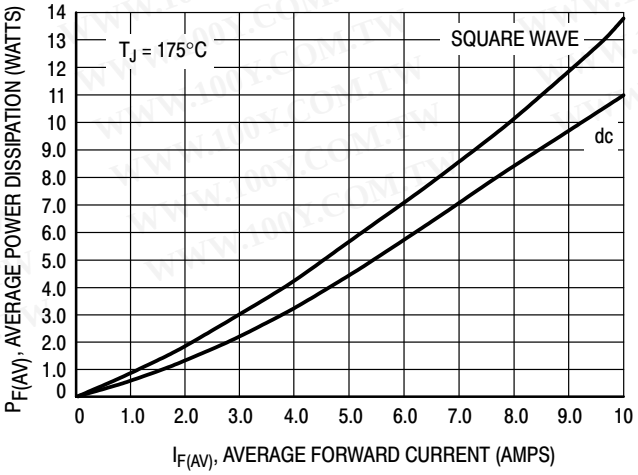

Figure 15. Power Dissipation, Per Leg

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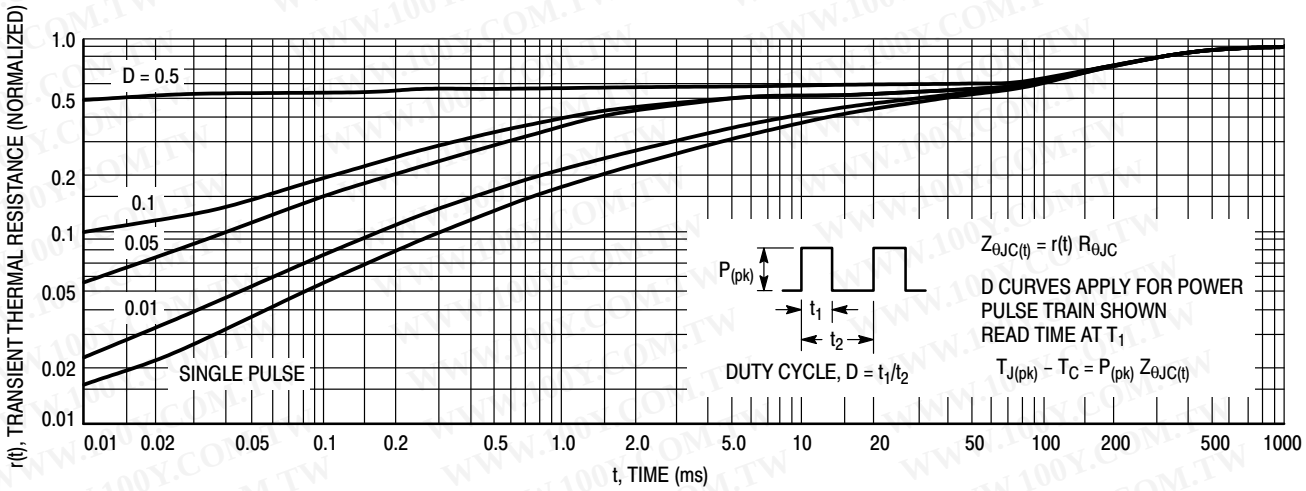

Figure 16. Thermal Response

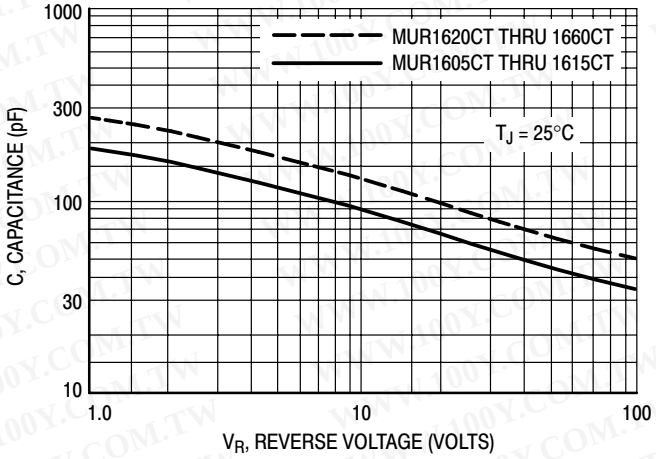

Figure 17. Typical Capacitance, Per Leg

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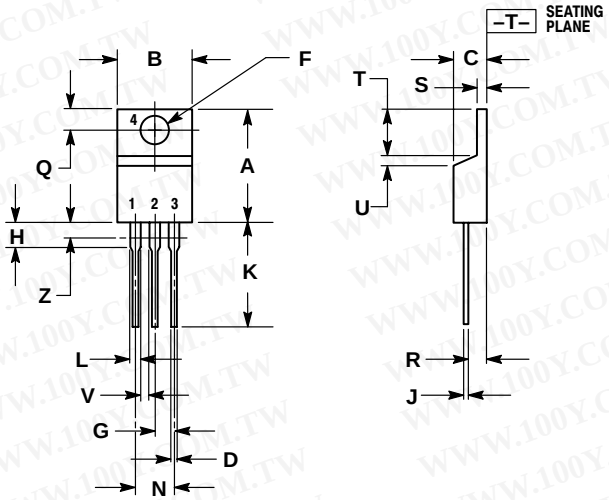
PACKAGE DIMENSIONS

TO–220 THREE–LEAD
TO–220AB
CASE 221A–09
ISSUE AA



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

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