# MUR1040CT

## ULTRA FAST RECTIFIERS

*Reverse Voltage - 400 Volts    Forward Current - 10.0 Amperes*

### TO-220AB



*Dimensions in inches and (millimeters)*
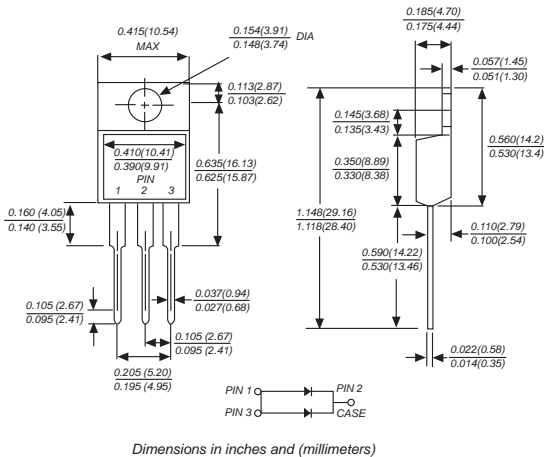
## FEATURES

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Construction utilizes void-free molded plastic technique
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 250℃,0.25"(6.35mm) from case for 10 seconds

## MECHANICAL DATA

**Case**: TO-220AB molded plastic body
**Terminals**: Leads solderable per MIL-STD-750, Method 2026
**Polarity**: As marked
**Mounting Position**: Any
**Weight**:0.08 ounce, 2.24 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase half-wave 60Hz,resistive or inductive load,for capacitive load current derate by 20%.

| Rating | Symbol | MUR1040CT | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage | $V_{RRM}$ | 400 | V |
| Average Rectified Forward Current  (Rated $V_R$) $T_C$ = 133°C | $I_{F(AV)}$ | 5 | A |
| Peak Repetitive Forward Current (Rated $V_R$, Square Wave, 20 kHz) $T_C$ = 133°C | $I_{FRM}$ | 10 | A |
| Maximum Instantaneous Forward Voltage ($i_F$ =5Amps, $T_C$ = 25°C) | $v_F$ | 1.3 | V |
| Nonrepetitive Peak Surge Current (Surge applied at rates load conditions halfwave, single phase, 60Hz) | $I_{FSM}$ | 150 | A |
| Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz) | $I_{RRM}$ | 5 | A |
| Operating Junction Temperature | $T_J$ | - 65 to +175 | °C |
| Voltage Rate of Change (Rated $V_R$) | dv/dt | 10,000 | V/μs |
| Maximum Instantaneous Reverse Current (Rated dc Voltage, $T_C$ = 125°C) (Rated dc Voltage, $T_C$ = 25°C) | $I_R$ | 6.0 0.01 | mA |
| Recovery TIME    $I_F$ = 1A, $dI_F/dt$ = 200A/μs | $t_{rr}$ | 30 | ns |



www.microdiode.com

# RATINGS AND CHARACTERISTIC CURVES MUR1040CT
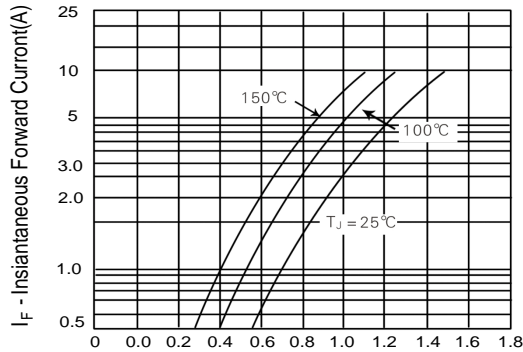


**Figure 1. Typical Forward Voltage Per Diode**

150℃
100℃
$T_J = 25℃$

$I_F$ - Insiantaneous Forward Current(A)
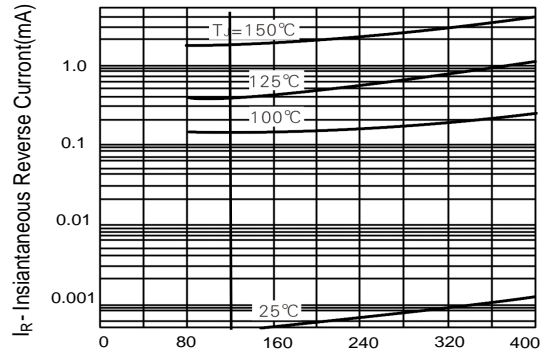


**Figure 2. Typical Reverse Current Per Diode**

$T_J = 150℃$
125℃
100℃
25℃

$I_R$ - Insiantaneous Reverse Current(mA)
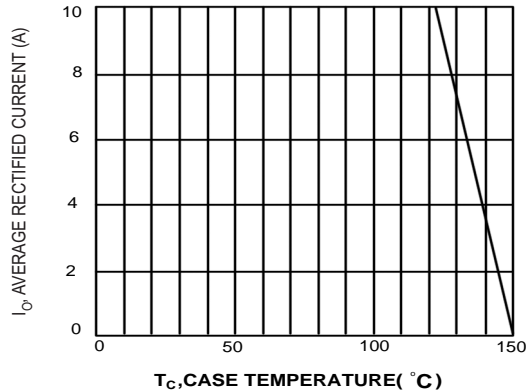


$T_C$,CASE TEMPERATURE( ℃ )
**FIGURE.3 Forward Current Derating Curve**

$I_O$, AVERAGE RECTIFIED CURRENT (A)
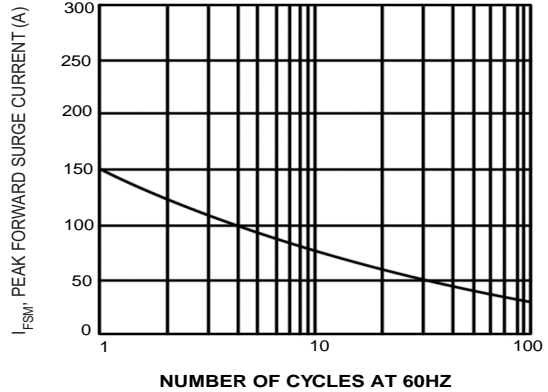


NUMBER OF CYCLES AT 60HZ
**FIGURE.4 Max Non-Repetitive Surge Current**

$I_{FSM}$, PEAK FORWARD SURGE CURRENT (A)



$T_C = 25^OC, dI_F/dt = 200A/\mu s$
$t_{rr}$
$t_a$
$t_b$

t,RECOVERY TIMES (ns)

$I_F$,FORWARD CURRENT (A)
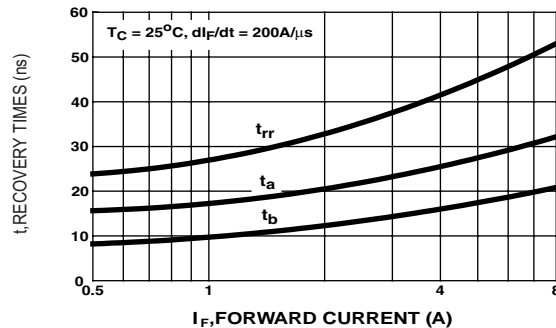**FIGURE.5 $t_{rr}$, $t_a$ AND $t_b$ CURVES vs FORWARD CURRENT**

The cruve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!