

Technical Data  
Data Sheet 4854, Rev.-

**MURC240**  
**Ultrafast Silicon Die**

**Applications:**

- Switching Power Supply • General Purpose • Free-Wheeling Diodes • Polarity Protection Diode

**Features:**

- Glass-Passivated
- Epitaxial Construction.
- Low Reverse Leakage Current
- High Surge Current Capability
- Low Forward Voltage Drop
- Fast Reverse-Recovery Behavior

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	400	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C=85^\circ\text{C}$ , rectangular wave form	2.0	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine pulse	35	A
Max. Junction Temperature	$T_J$	-	-65 to +175	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-65 to +175	$^\circ\text{C}$

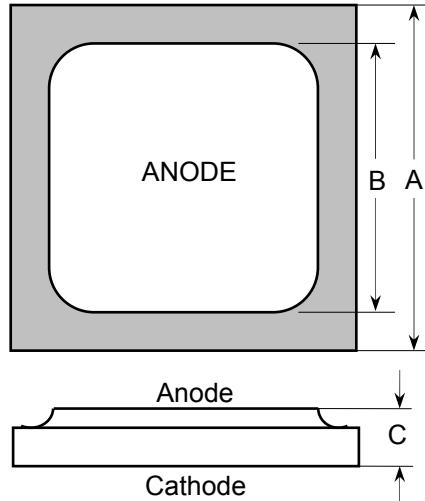
**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	$V_F$	@ 2.0A, Pulse, $T_J = 150^\circ\text{C}$ @ 2.0A, Pulse, $T_J = 25^\circ\text{C}$	1.05 1.30	V
Max. Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	5.0	$\mu\text{A}$
	$I_{R2}$	@ $V_R = V_R$ $T_J = 150^\circ\text{C}$	150	$\mu\text{A}$
Max. Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ , $V_{SIG} = 50\text{mV}$ (p-p)	15	pF
Max Reverse Recovery Time	$t_{rr}$	$I_F = 1.0\text{Amp}$ , $di/dt = 50\text{Amp}/\mu\text{s}$ $I_F = 0.5\text{ Amp}$ , $I_R = 1.0\text{ Amp}$ , $I_{REC} = 0.25\text{ Amp}$	65 50	nS
Max Forward Recovery Time	$T_{fr}$	$I_F = 1.0\text{Amp}$ , $di/dt = 50\text{Amp}/\mu\text{s}$	50	nS

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

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**Dimensions in inches (mm)**



Top side metalization:  
Al - 25 kÅ minimum or  
Ti/Ni/Ag - 30 kÅ minimum

Bottom side metalization:  
Ti/Ni/Ag - 30 kÅ minimum.  
Bottom side is cathode, top side is anode.

Die type	Area (mil <sup>2</sup> )	Dimension A <sup>(1)</sup> Inch (millimeter)	Dimension B <sup>(1)</sup> Inch (millimeter)	Dimension C <sup>(2)</sup> Inch (millimeter)
Si p-n die	40 x 40	0.040 (1.016)	0.024 (0.610)	0.009 (0.229)

<sup>(1)</sup> Tolerance is ± 0.003" (0.076 mm)

<sup>(2)</sup> Tolerance is ± 0.001" (0.025 mm)

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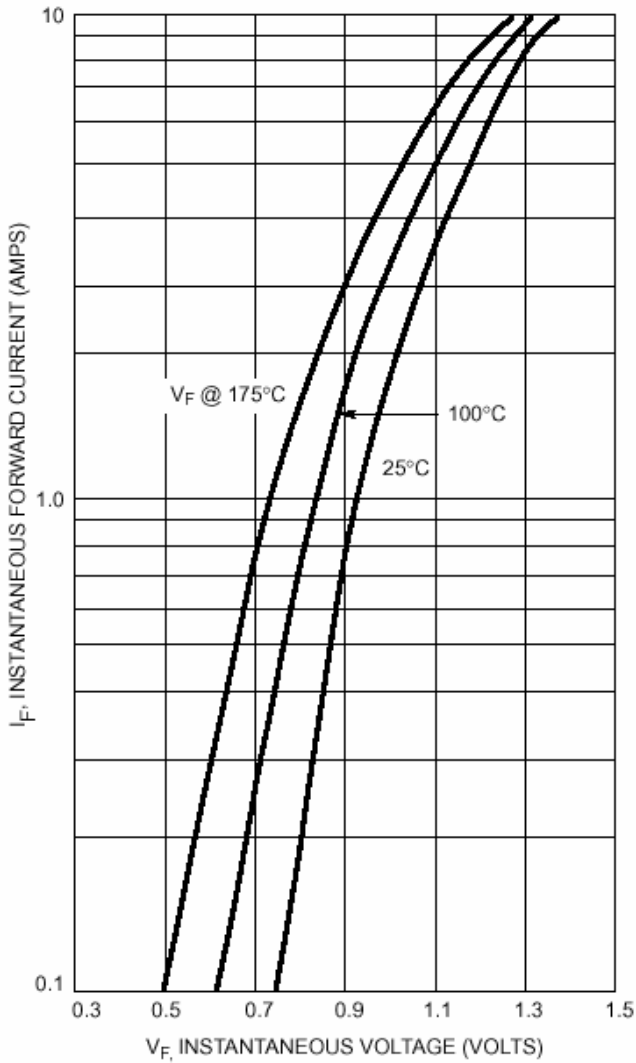


Figure 1. Typical Forward Voltage

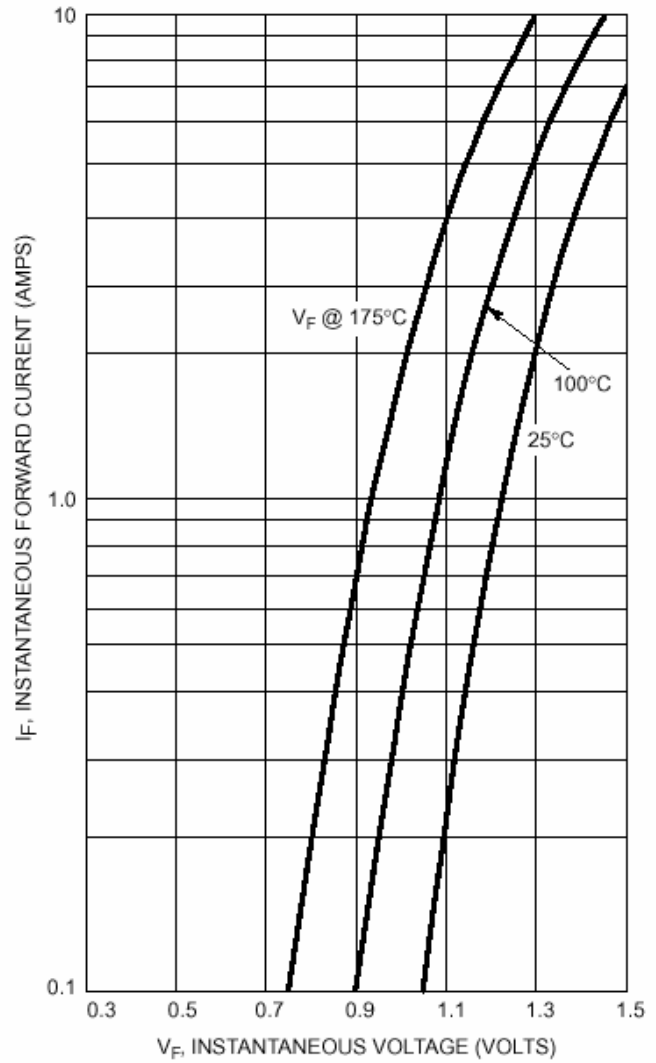
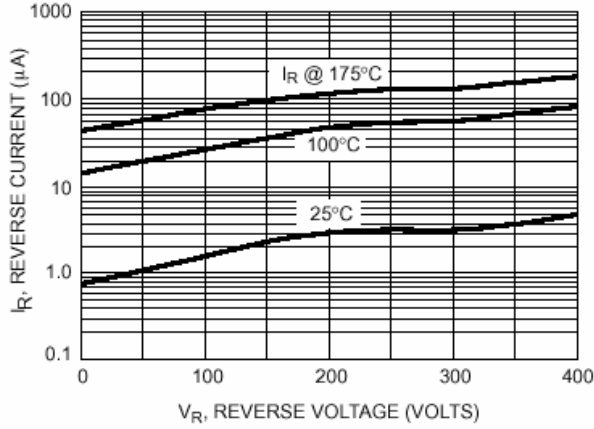


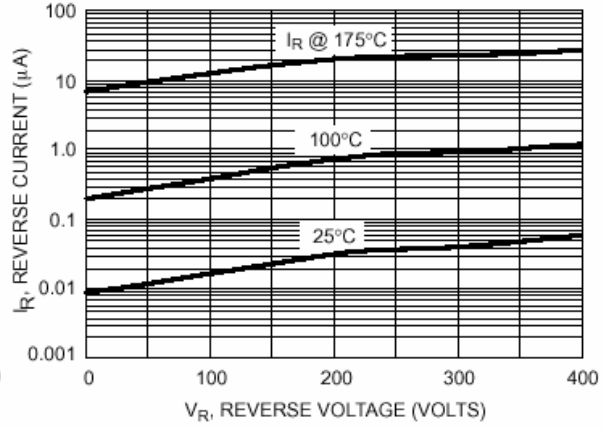
Figure 2. Maximum Forward Voltage

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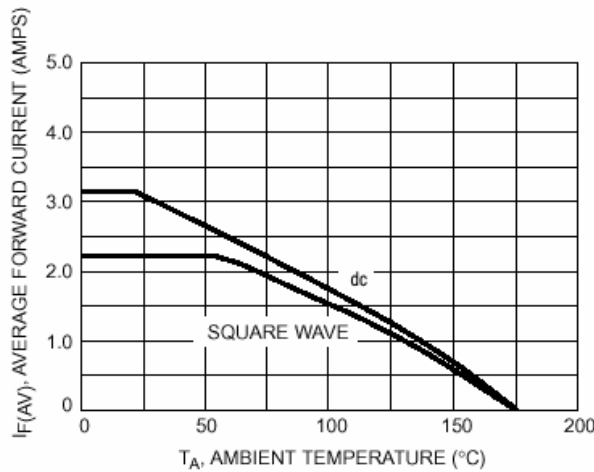
**MURC240**



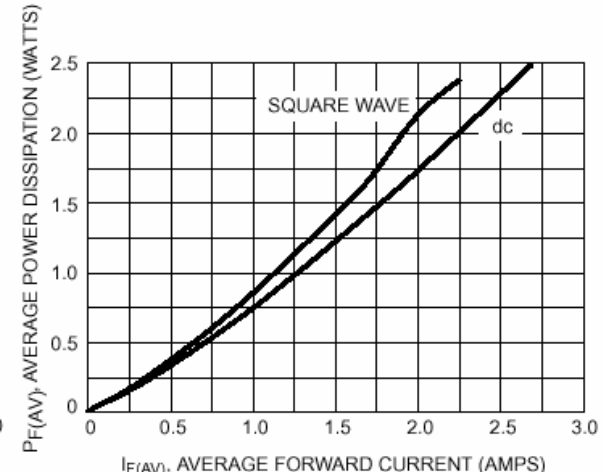
**Figure 3. Maximum Reverse Current**



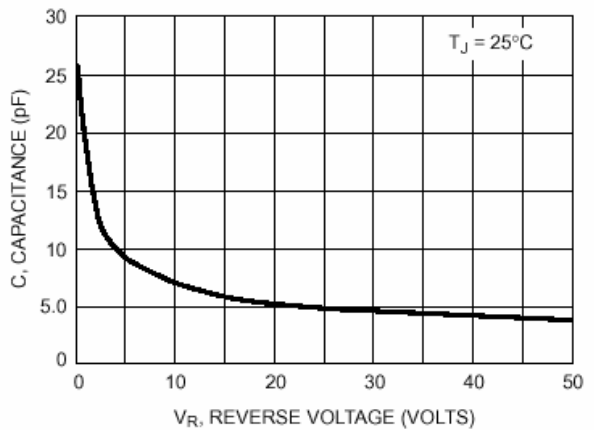
**Figure 4. Typical Reverse Current**



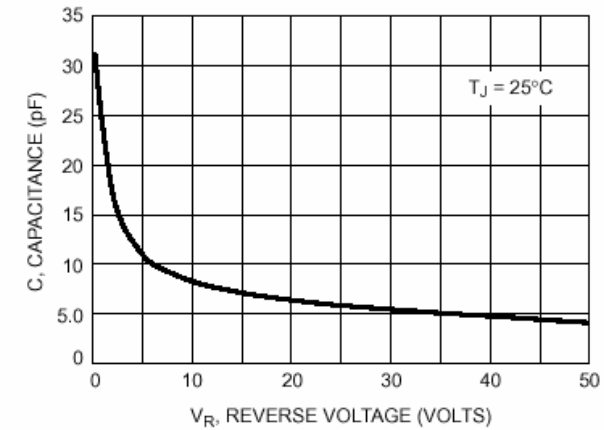
**Figure 5. Current Derating**



**Figure 6. Power Dissipation**



**Figure 7. Typical Capacitance**



**Figure 8. Maximum Capacitance**