

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	$^\circ\text{C}$

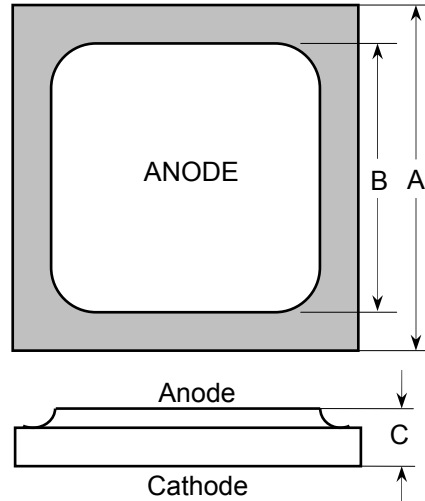
Electrical Characteristics:

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	μA
	I_{R2}	@ $V_R = V_R$ $T_J = 150^\circ\text{C}$	150	μA
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 μs , Duty Cycle <2%

Data Sheet 4854, Rev.-

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 ²)	Dimension A ⁽¹⁾ Inch (millimeter)	Dimension B ⁽¹⁾ Inch (millimeter)	Dimension C ⁽²⁾ Inch (millimeter)
Si p-n die	40 x 40	0.040 (1.016)	0.024 (0.610)	0.009 (0.229)

⁽¹⁾ Tolerance is ± 0.003 " (0.076 mm)

⁽²⁾ Tolerance is ± 0.001 " (0.025 mm)

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Data Sheet 4854, Rev.-

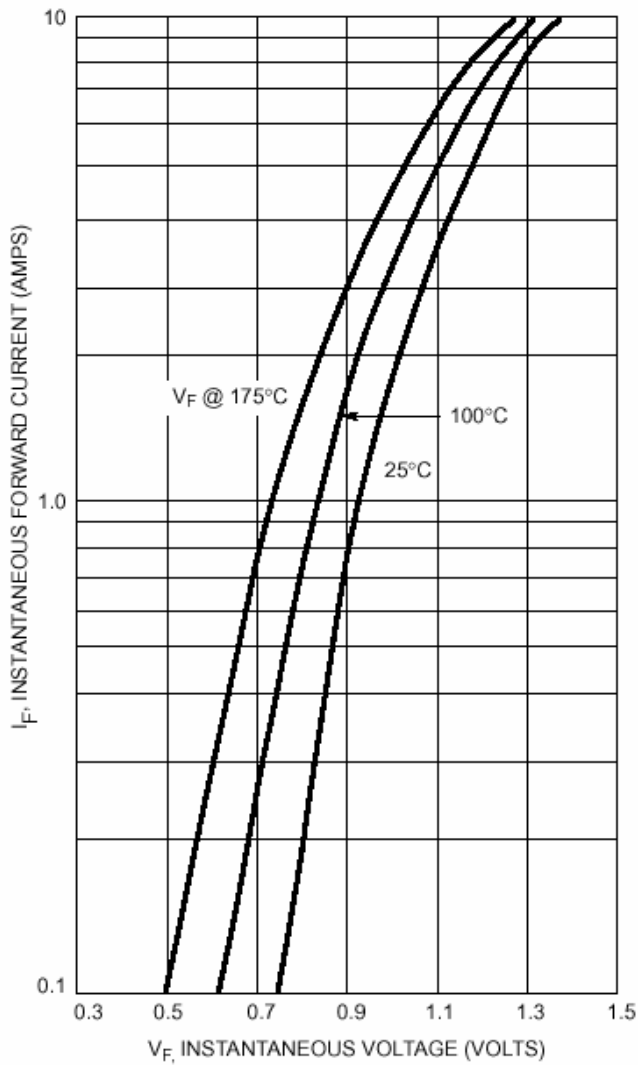


Figure 1. Typical Forward Voltage

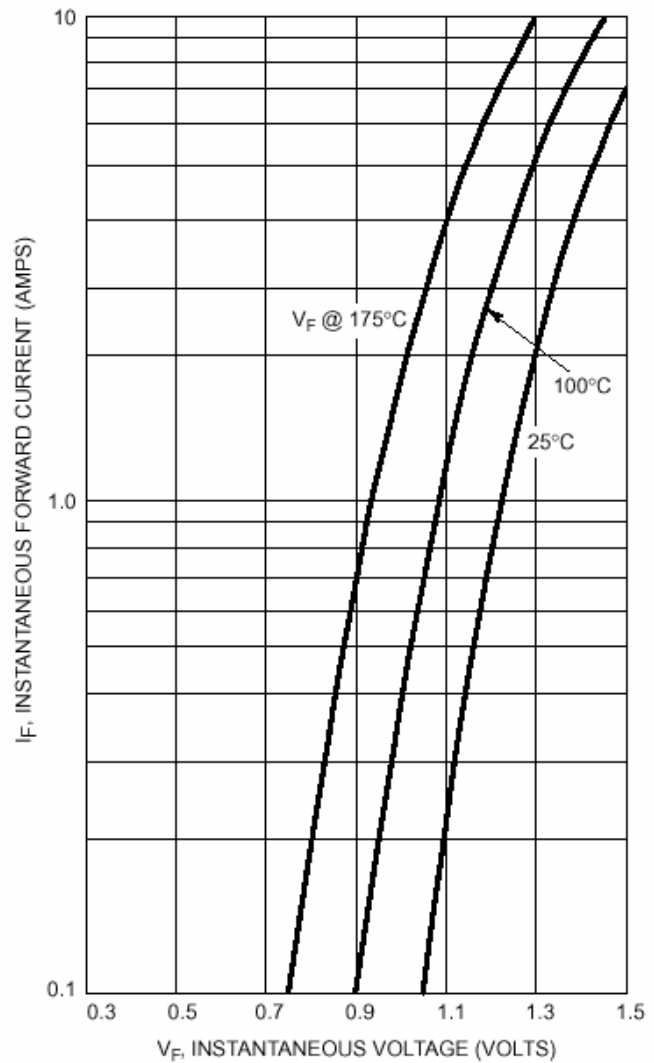


Figure 2. Maximum Forward Voltage

Data Sheet 4854, Rev.-

MURC240

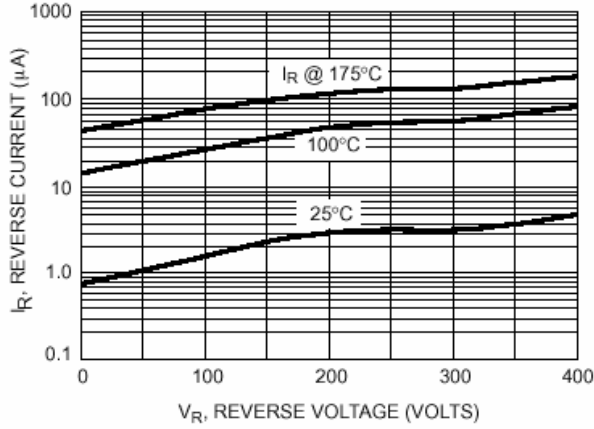


Figure 3. Maximum Reverse Current

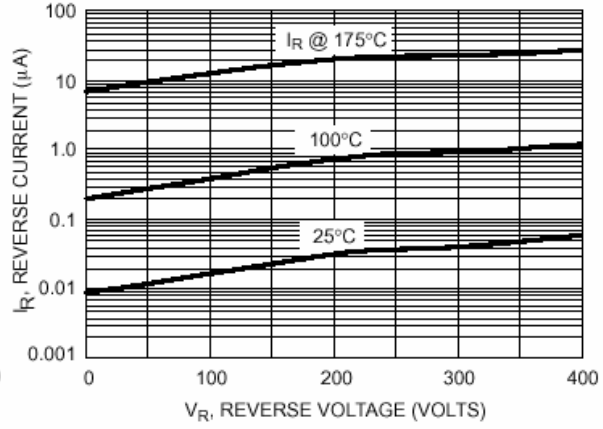


Figure 4. Typical Reverse Current

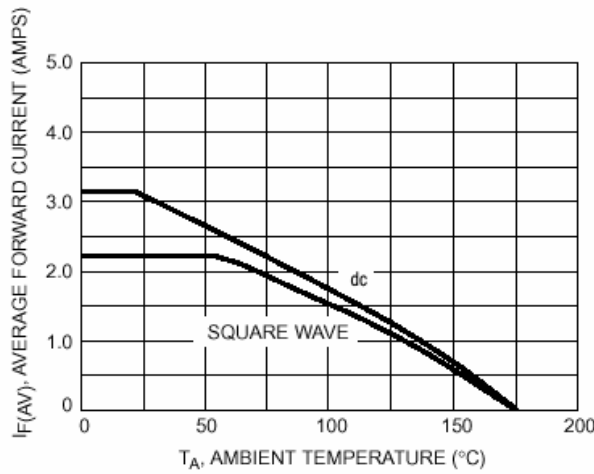


Figure 5. Current Derating

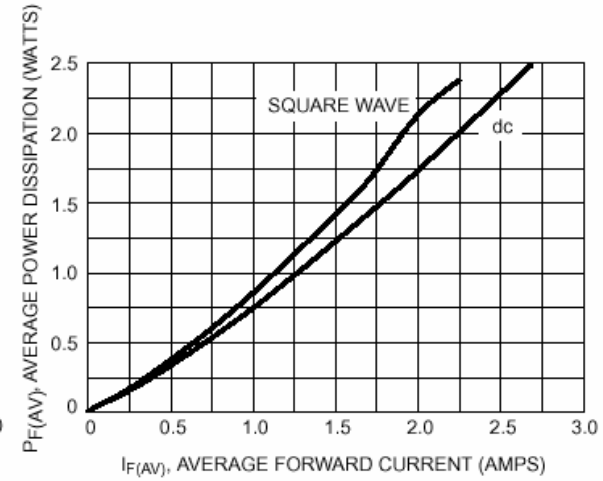


Figure 6. Power Dissipation

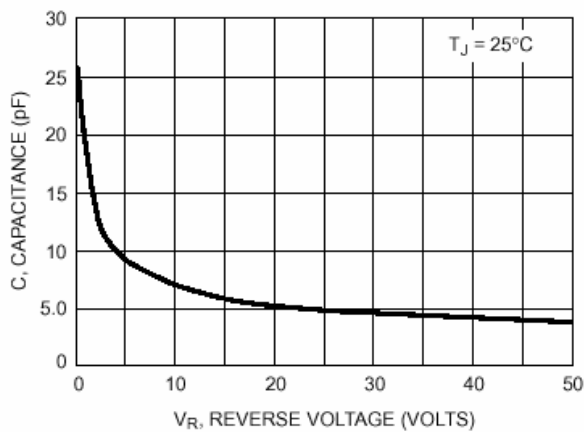


Figure 7. Typical Capacitance

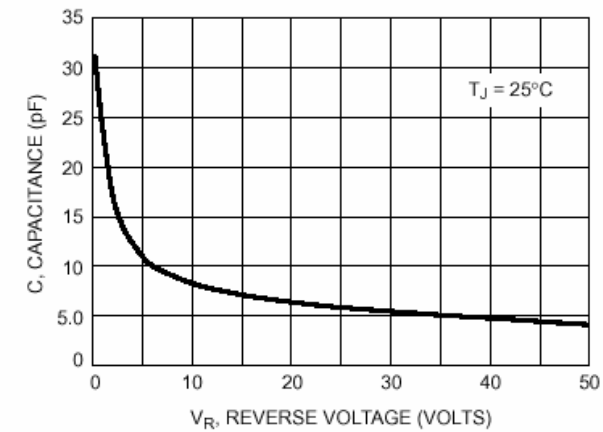


Figure 8. Maximum Capacitance