

Technical Data  
Data Sheet 4857, Rev.-

## MURC620

### 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:

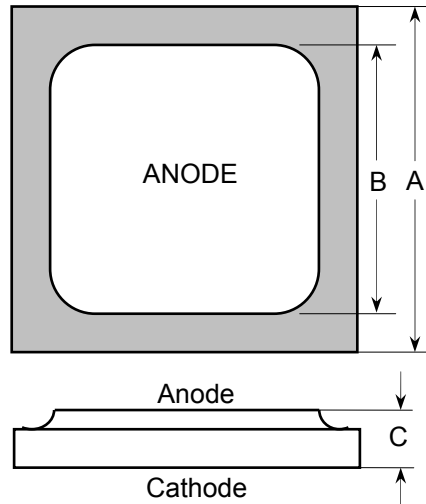
Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	$V_{RWM}$	-	200	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C = 100^\circ\text{C}$ , rectangular wave form	6.0	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine pulse	60	A
Max. Junction Capacitance	$C_J$	@ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ , $V_{SIG} = 50\text{mV (p-p)}$	75	pF
Max. Junction Temperature	$T_J$	-	-65 to +150	$^\circ\text{C}$
Max. Storage Temperature	$T_{stg}$	-	-65 to +150	$^\circ\text{C}$

#### Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop *	$V_{F1}$	@ 6.0A, Pulse, $T_J = 25^\circ\text{C}$	1.2	V
	$V_{F2}$	@ 6.0A, Pulse, $T_J = 100^\circ\text{C}$	1.0	V
Max. Reverse Current *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	6	$\mu\text{A}$
	$I_{R2}$	@ $V_R = 0.8V_R$ $T_J = 100^\circ\text{C}$	60	$\mu\text{A}$
Max Reverse Recovery Time	$t_{rr}$	$I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{REC} = 0.25\text{A}$	25	nS
Max Reverse Recovery Time	$t_{rr}$	$I_F = 6\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$	35	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	85 x 85	0.085 (2.159)	0.069 (1.753)	0.009 (0.229)

<sup>(1)</sup> Tolerance is  $\pm 0.003$ " (0.076 mm)<sup>(2)</sup> Tolerance is  $\pm 0.001$ " (0.025 mm)**DISCLAIMER:**

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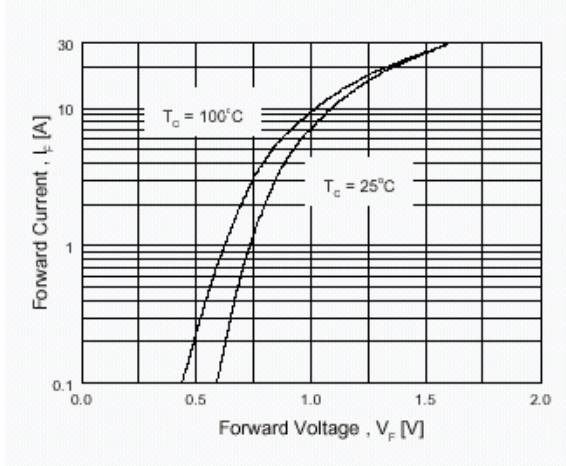
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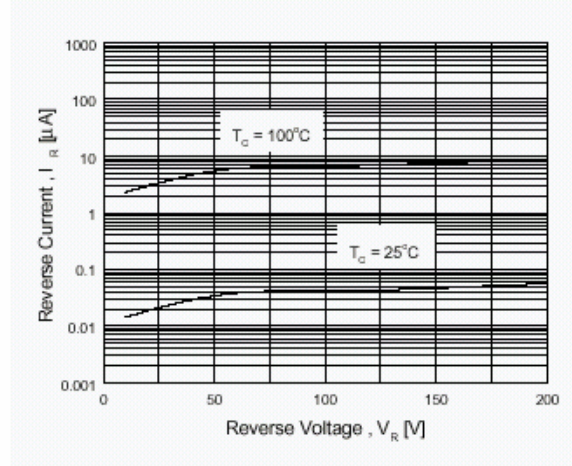
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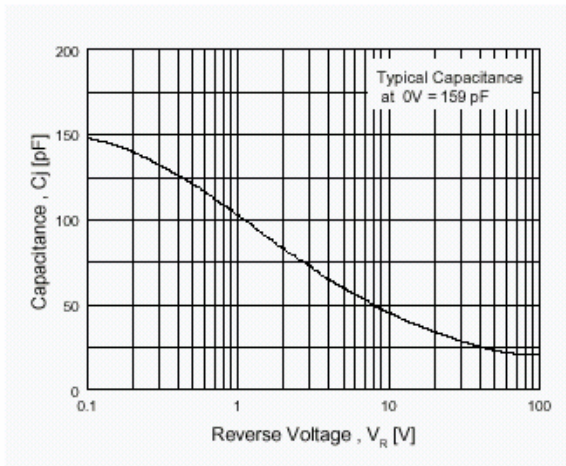
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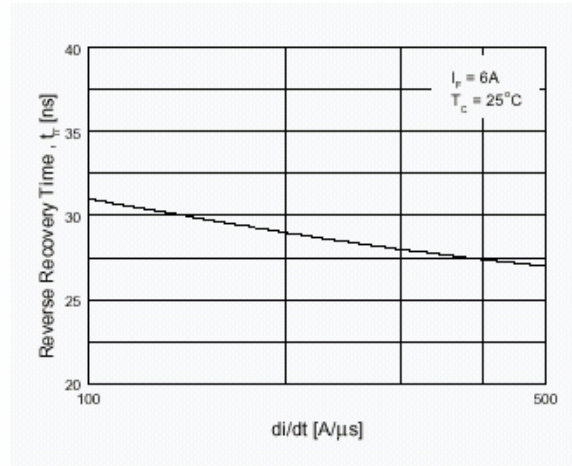
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



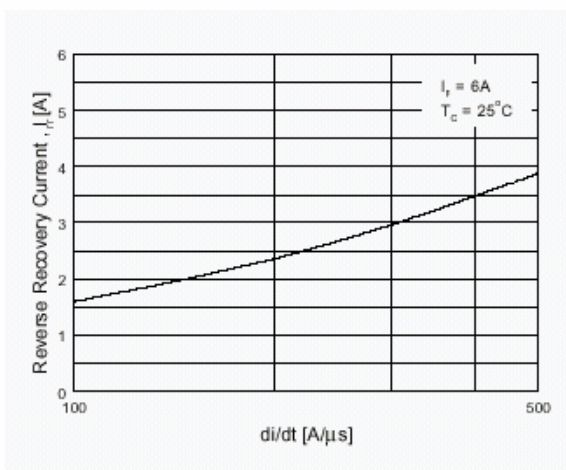
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



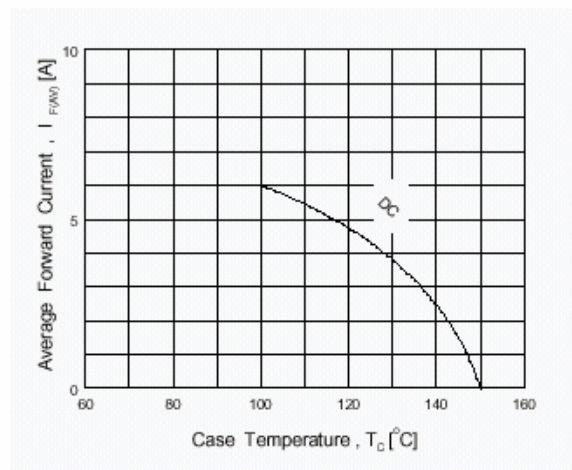
**Figure 3. Typical Junction Capacitance**



**Figure 4. Typical Reverse Recovery Time vs. di/dt**



**Figure 5. Typical Reverse Recovery Current vs. di/dt**



**Figure 6. Forward Current Derating Curve**