

Ultrafast Rectifier

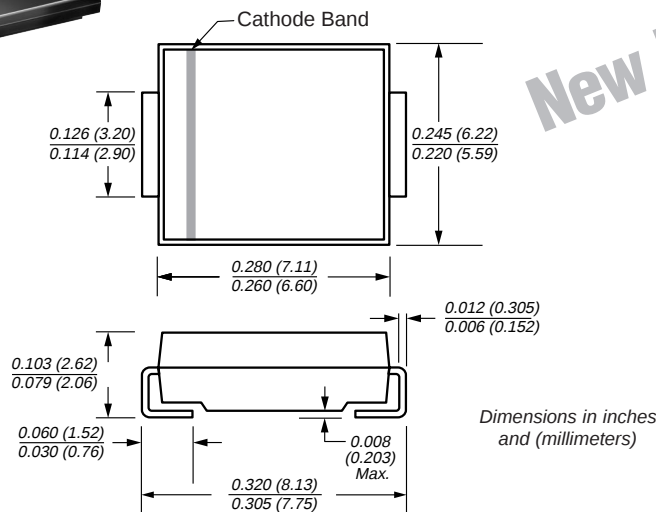
Reverse Voltage 200V

Forward Current 3.0A

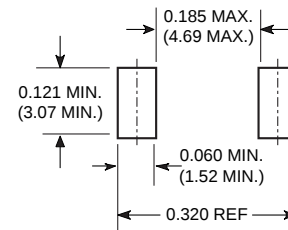
Reverse Recovery Time 25ns



DO-214AB (SMC)



Mounting Pad Layout



Mechanical Data

Case: JEDEC DO-214AB molded plastic body over passivated chip

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Weight: 0.007 ounce, 0.21 gram

Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- Ultrafast recovery time for high efficiency
- Glass passivated junction
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

Maximum Ratings & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MURS320	Unit
Device Marking Codes		MD	
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Working peak reverse voltage	V_{RWM}	200	V
Maximum DC blocking voltage	V_{DC}	200	V
Maximum average forward rectified current at: $T_L = 140^\circ\text{C}$ (See figure 1) $T_L = 130^\circ\text{C}$	$I_{F(AV)}$	3.0 4.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	125	A
Typical thermal resistance junction to ambient	$R_{\theta JL}$	11	°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175°C	°C

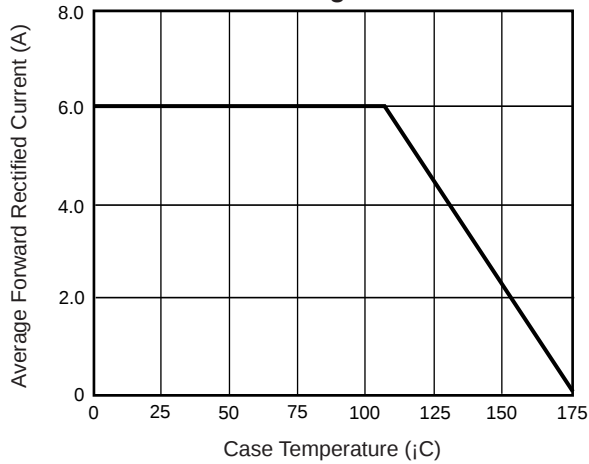
Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Maximum instantaneous forward voltage ⁽¹⁾	at $I_F = 3.0\text{A}, T_J = 25^\circ\text{C}$ at $I_F = 4.0\text{A}, T_J = 25^\circ\text{C}$ at $I_F = 3.0\text{A}, T_J = 150^\circ\text{C}$	V_F	0.875 0.890 0.710	V
Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾	$T_J = 25^\circ\text{C}$ $T_J = 150^\circ\text{C}$	I_R	5.0 150	μA
Maximum reverse recovery time at $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$		t_{rr}	25	ns
Maximum reverse recovery time at: $I_F = 1.0\text{A}, di/dt = 50\text{A}/\mu\text{s}, V_R = 30\text{V}, I_{rr} = 10\% I_{RM}$		t_{rr}	35	ns
Maximum forward recovery time $I_F = 1.0\text{A}, di/dt = 100\text{A}/\mu\text{s}, \text{Rec. to } 1.0\text{V}$		t_{fr}	25	ns

Notes: (1) Pulse test: $t_p = 300\mu\text{s}$, duty cycle $\leq 2\%$

Ratings and Characteristic Curves

**Fig. 1 – Forward Current
Derating Curve**



**Fig. 2 – Maximum Non-Repetitive Peak
Forward Surge Current**

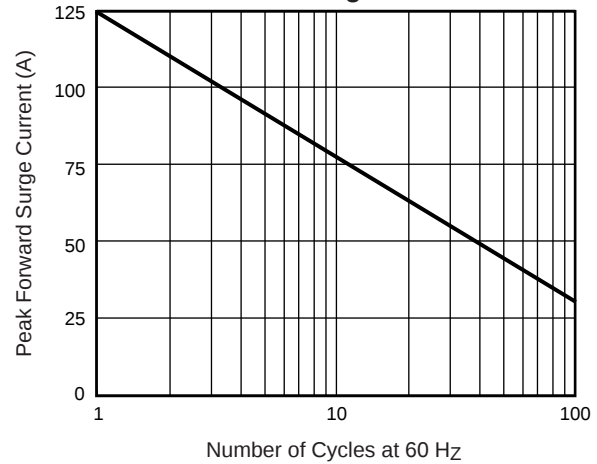
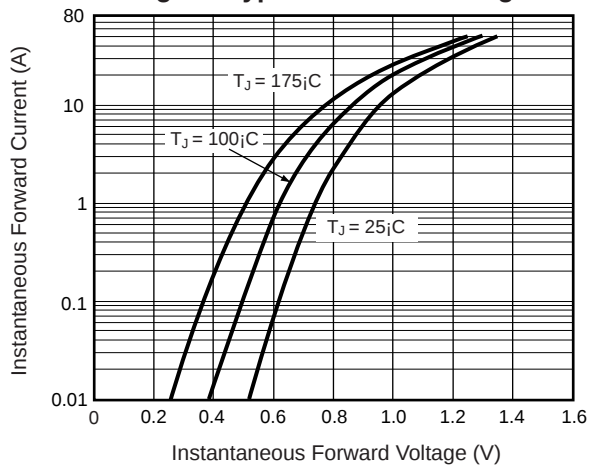


Fig. 3 – Typical Forward Voltage



**Fig. 4 – Typical Reverse Leakage
Characteristics (MUR160)**

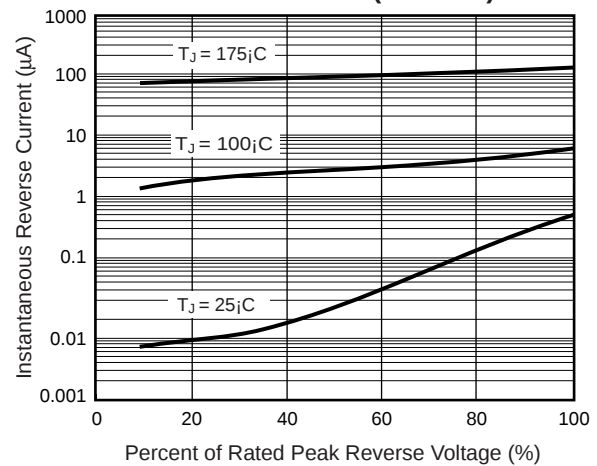


Fig. 5 – Typical Junction Capacitance

