

# Ultra-Fast Diode



## Features:

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

## Specifications:

### Mechanical Data:

Case	: JEDEC DO-204AC moulded plastic body over passivated chip
Terminals	: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity	: Colour band denotes cathode end
Mounting position	: Any
Weight	: 0.015oz, 0.4g

## Maximum Ratings and Electrical Characteristics:

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	UG2D	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	200	V
Maximum RMS Voltage	$V_{RMS}$	140	
Maximum DC Blocking Voltage	$V_{DC}$	200	
Maximum Average Forward Rectified Current at 0.375" (9.5mm) Lead Length at $T_L = 75^\circ\text{C}$	$I_{F(AV)}$	2.0	A
Peak Forward Surge Current 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method) at $T_L = 75^\circ\text{C}$	$I_{FSM}$	80	
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	45	°C/W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150°C	°C

**Note 1:** Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length.

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## Electrical Characteristics:

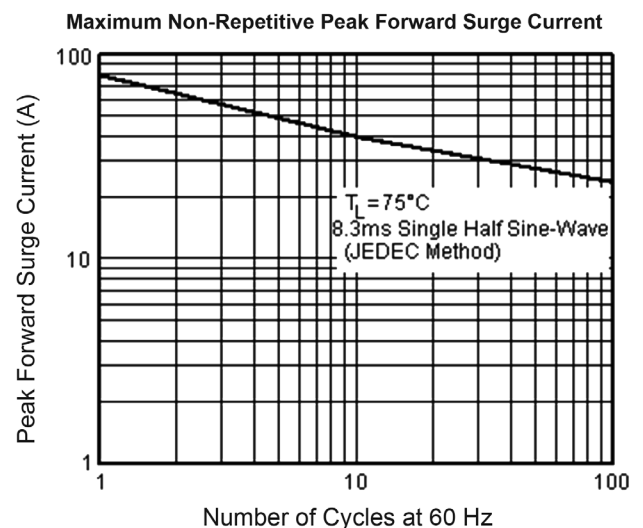
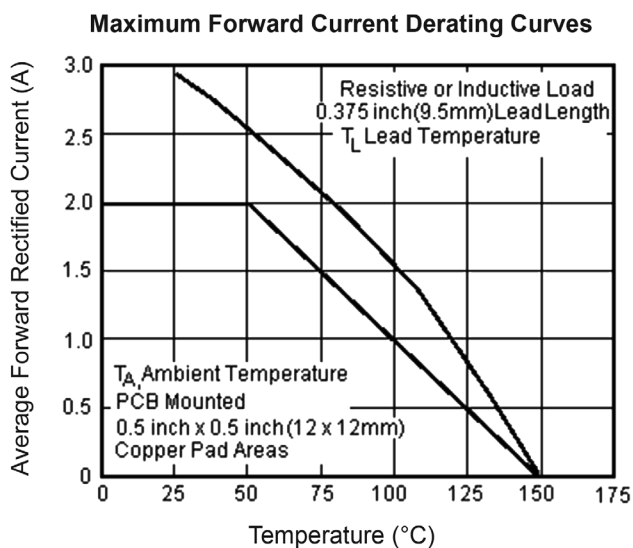
Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage at 2.0A (Note 2)	$V_F$	0.95	V
Maximum DC Reverse Current $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A = 100^\circ\text{C}$	$I_R$	5 200	$\mu\text{A}$
Maximum Reverse Recovery Time at $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{rr} = 0.25\text{A}$	$t_{rr}$	15	nS
Maximum Reverse Recovery Time at $I_F = 2.0\text{A}$ , $V_R = 30\text{V}$ , $di/dt = 50\text{A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$ $T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$		25 35	
Maximum Recovered Stored Charge $I_F = 2.0\text{A}$ , $V_R = 30\text{V}$ , $di/dt = 50\text{A}/\mu\text{s}$ , $I_{rr} = 10\% I_{RM}$ $T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	$Q_{RR}$	10 22	nC
Typical Junction Capacitance at 4V, 1MHz	$C_J$	15	pF

**Note 1:** Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length.

**Note 2:** Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle.

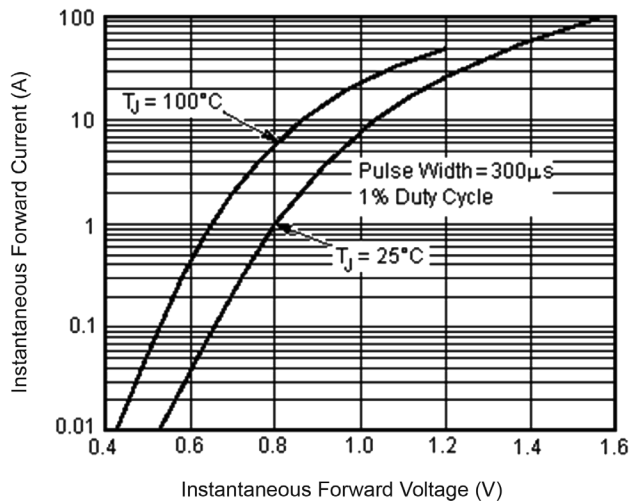
## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)



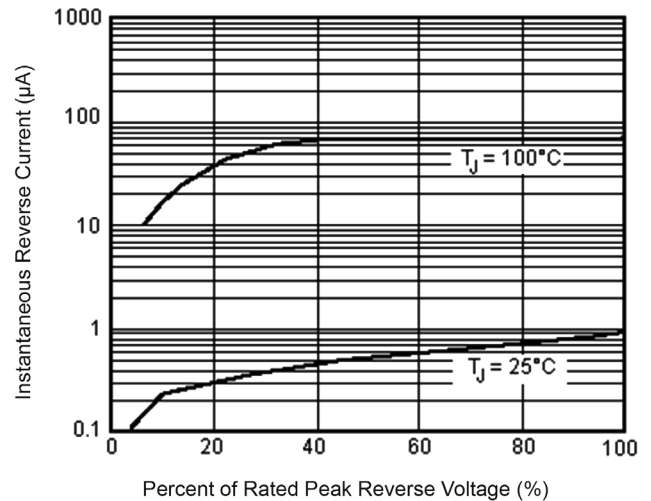
# Ultra-Fast Diode



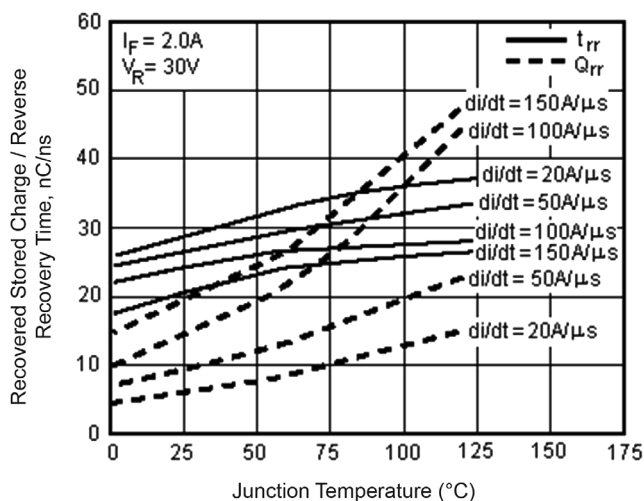
Typical Instantaneous Forward Characteristics



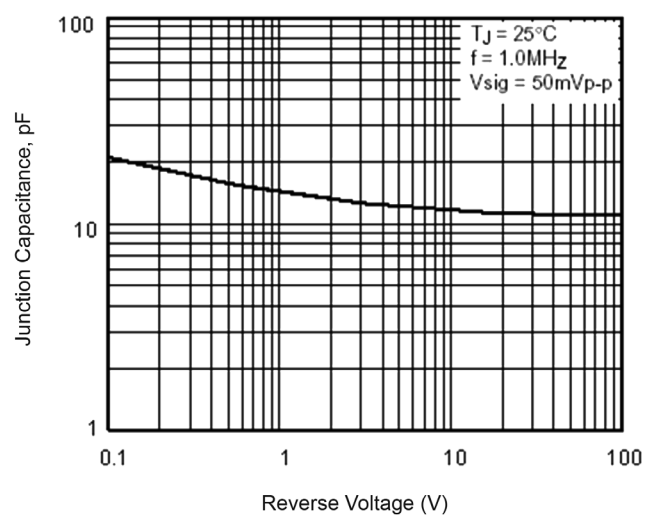
Typical Reverse Leakage Characteristics



Reverse Switching Characteristics



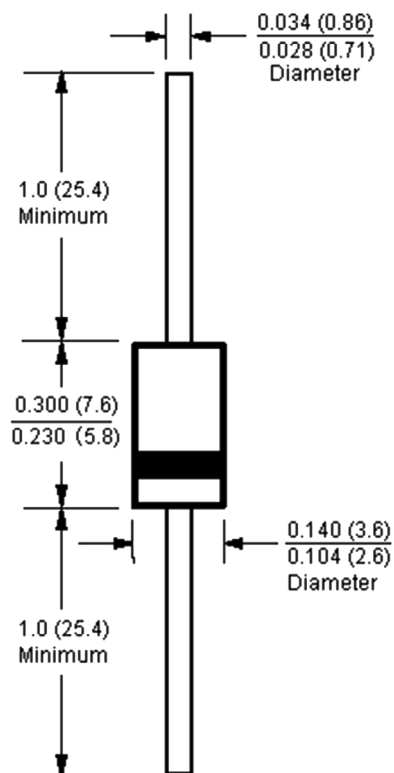
Typical Junction Capacitance



# Ultra-Fast Diode



## DO-204AC (DO-15)



Dimensions : Inches (Millimetres)

## Part Number Table

Description	Part Number
Diode, Ultra-Fast, 2A, 200V	UG2D

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