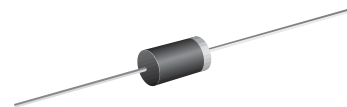


Miniature Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 200 V
I_{FSM}	40 A
t_{rr}	15 ns
V_F	0.95 V
T_j max.	150 °C



DO-204AL (DO-41)

Features

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Soft recovery characteristics
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and Telecommunication

Mechanical Data

Case: DO-204AL (DO-41)

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Maximum Ratings

$T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Symbols	UG1A	UG1B	UG1C	UG1D	Units
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	1.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40				A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150				°C

Electrical Characteristics

$T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Test condition	Symbols	Value	Units
Maximum instantaneous forward voltage	at $I_F = 1.0\text{ A}$ ⁽¹⁾	V_F	0.95	V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 100\text{ }^{\circ}\text{C}$	I_R	5.0 200	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}	15	ns
Maximum reverse recovery time	at $I_F = 1.0\text{ A}$, $V_R = 30\text{ V}$, $di/dt = 50\text{ A}/\mu\text{s}$, $I_{rr} = 10\% I_{RM}$	t_{rr}	25 35	ns
Maximum stored charge	$I_F = 1.0\text{ A}$, $V_R = 30\text{ V}$, $di/dt = 50\text{ A}/\mu\text{s}$, $I_{rr} = 10\% I_{RM}$	Q_{rr}	8.0 12	nC
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	7	pF

Notes: (1) Pulse test: 300 μs pulse width, 1 % duty cycle

Thermal Characteristics

$T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbols	UG1A	UG1B	UG1C	UG1D	Units
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$		60 20			$^{\circ}\text{C}/\text{W}$

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

Ratings and Characteristics Curves

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

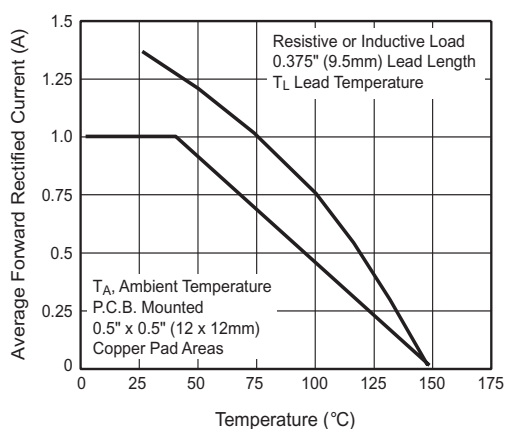


Figure 1. Forward Current Derating Curves

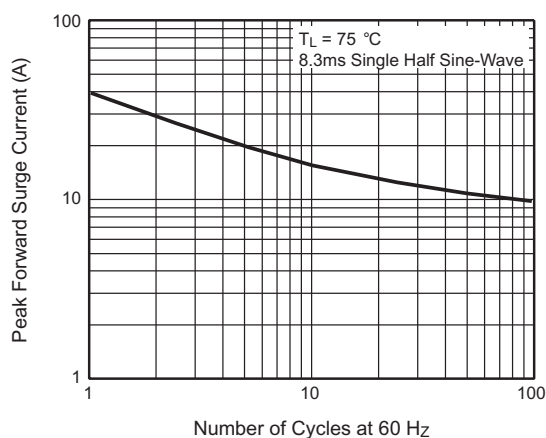


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

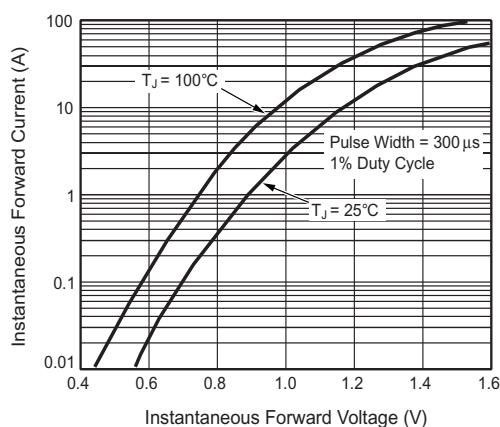


Figure 3. Typical Instantaneous Forward Characteristics

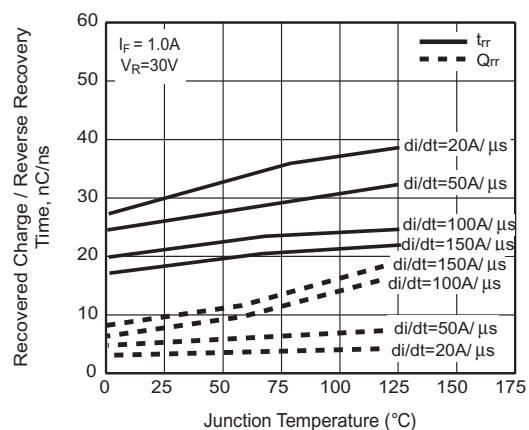


Figure 5. Reverse Switching Characteristics

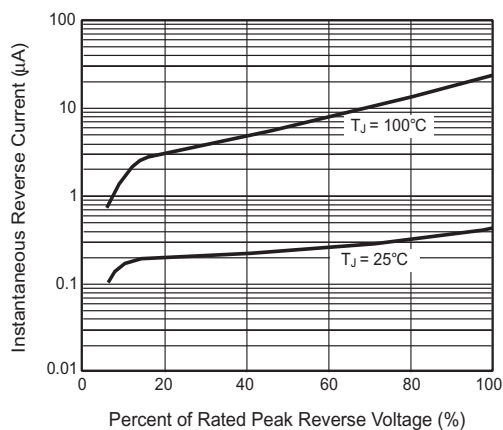


Figure 4. Typical Reverse Characteristics

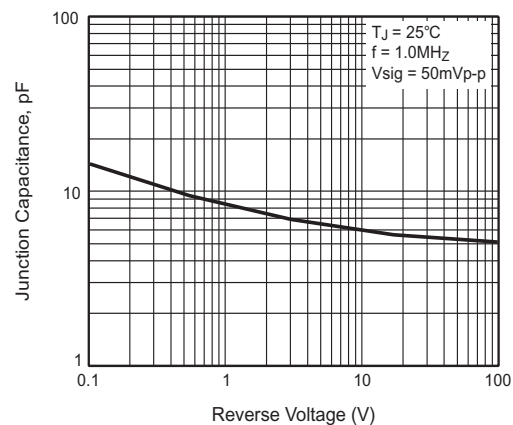
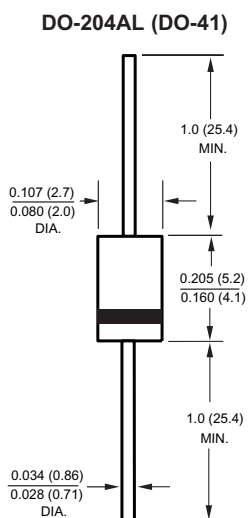


Figure 6. Typical Junction Capacitance

Package outline dimensions in inches (millimeters)





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