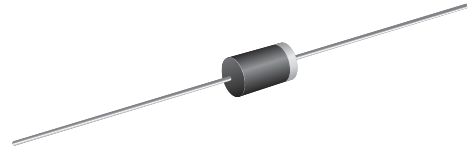


## Ultrafast Plastic Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
$V_{RRM}$	400 V, 600 V
$I_{FSM}$	35 A
$t_{rr}$	50 ns
$V_F$	1.05 V
$T_j \text{ max.}$	175 °C

DO-204AC (DO-15)



### Features

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



### Mechanical Data

**Case:** DO-204AC (DO-15)

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

### Typical Applications

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

### Maximum Ratings

$T_A = 25$  °C unless otherwise specified

Parameter	Symbol	MUR140	MUR160	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	400	600	V
Working peak reverse voltage	$V_{RWM}$	400	600	V
Maximum DC blocking voltage	$V_{DC}$	400	600	V
Maximum average forward rectified current at $T_A = 120$ °C	$I_{F(AV)}$	1.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	35		A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175 °C		°C

### Electrical Characteristics

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

Parameter	Test condition	Symbol	MUR140	MUR160	Unit
Maximum instantaneous forward voltage <sup>(1)</sup>	at $I_F = 1.0\text{ A}$ $T_J = 25\text{ }^\circ\text{C}$	$V_F$	1.25		V
	at $I_F = 1.0\text{ A}$ $T_J = 150\text{ }^\circ\text{C}$		1.05		
Maximum instantaneous reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	$I_R$	5.0		$\mu\text{A}$
			150		
Maximum reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	50		ns
Maximum reverse recovery time	at $I_F = 1.0\text{ A}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $V_R = 30\text{ V}$ , $I_{rr} = 10\% I_{RM}$	$t_{rr}$	75		ns
Maximum forward recovery time	at $I_F = 1.0\text{ A}$ , $di/dt = 100\text{ A}/\mu\text{s}$ , recovery to $1.0\text{ V}$	$t_{fr}$	50		ns

Notes:

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

### Thermal Characteristics

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

Parameter	Symbol	MUR140	MUR160	Unit
Typical thermal resistance junction to ambient <sup>(1)</sup>	$R_{\theta JA}$	50		$^\circ\text{C}/\text{W}$

Notes:

(1) Lead length =  $3/8\text{''}$  on P.C. Board with  $1.5\text{''} \times 1.5\text{''}$  copper surface

### Ratings and Characteristics Curves

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

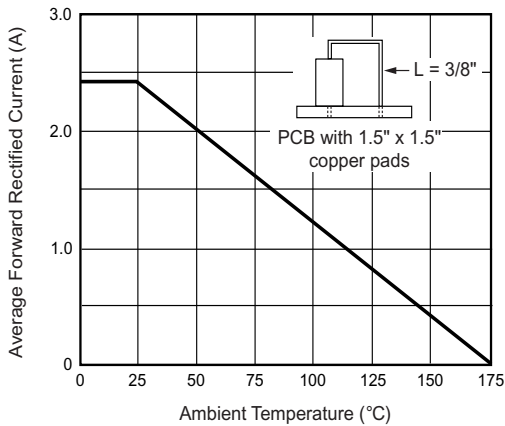


Figure 1. Forward Current Derating Curve

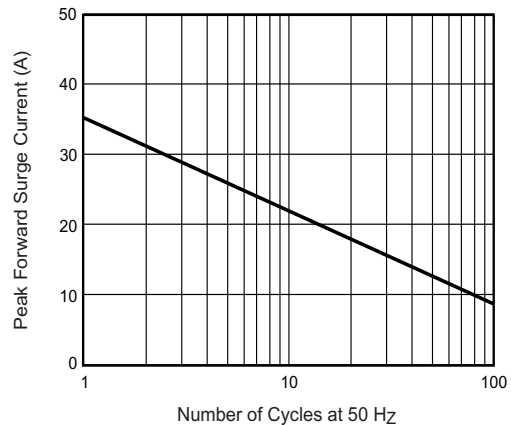


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

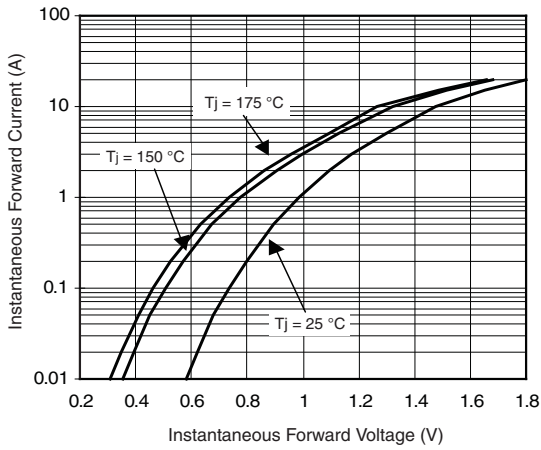


Figure 3. Typical Instantaneous Forward Characteristics

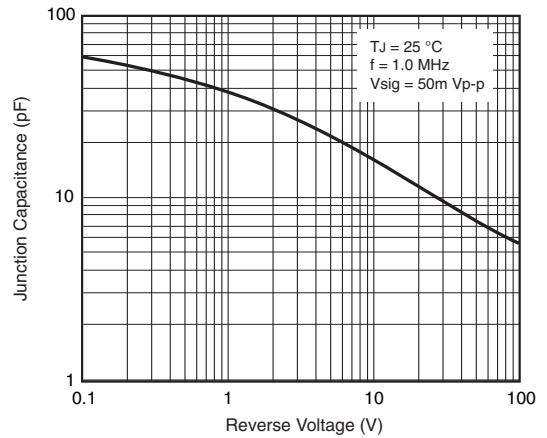


Figure 5. Typical Junction Capacitance

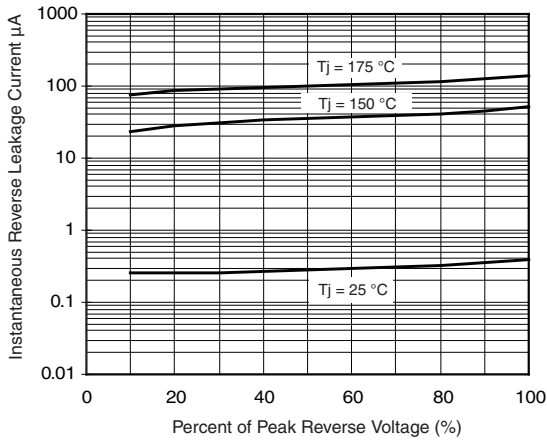
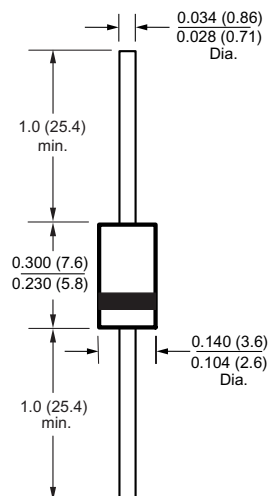


Figure 4. Typical Reverse Leakage Characteristics

## Package outline dimensions in inches (millimeters)

### DO-204AC (DO-15)





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