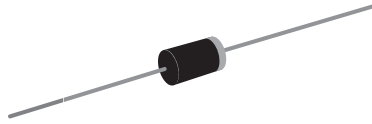


Ultrafast Plastic Rectifier


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 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

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-204AC (DO-15)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	200 V
I_{FSM}	35 A
t_{rr}	25 ns
V_F	0.710 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	MUR120	UNIT
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 $T_A = 130$ °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 and storage temperature range	T_J, T_{STG}	- 65 to + 175	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	MUR120	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	1.0 A	$T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	V_F	0.875 0.710	V
Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾		$T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	I_R	2.0 50	μA
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$		t_{rr}	25	ns
Maximum reverse recovery time	$I_F = 1.0\text{ A}$, $di/dt = 50\text{ A}/\mu\text{s}$, $V_R = 30\text{ V}$, $I_{rr} = 10\% I_{RM}$		t_{rr}	35	ns
Maximum forward recovery time	$I_F = 1.0\text{ A}$, $di/dt = 100\text{ A}/\mu\text{s}$, I_{rec} to 1.0 V		t_{fr}	25	ns

Note:

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MUR120	UNIT
Typical thermal resistance junction to ambient ⁽¹⁾	$R_{\theta JA}$	27	$^\circ\text{C}/\text{W}$

Note:

(1) Lead length = 3/8" on P.C. Board with 1.5" x 1.5" copper surface

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MUR120-E3/54	0.41	54	4000	13" diameter paper tape and reel
MUR120-E3/73	0.41	73	2000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

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

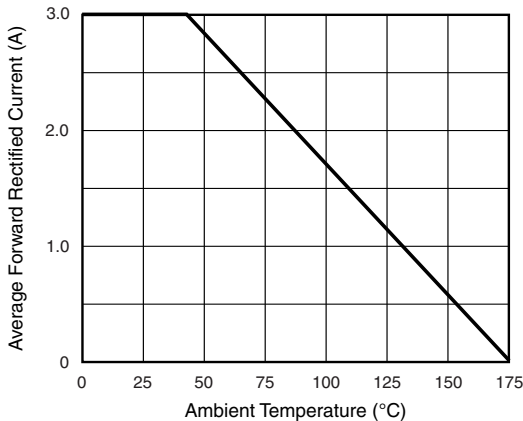


Figure 1. Forward Current Derating Curve

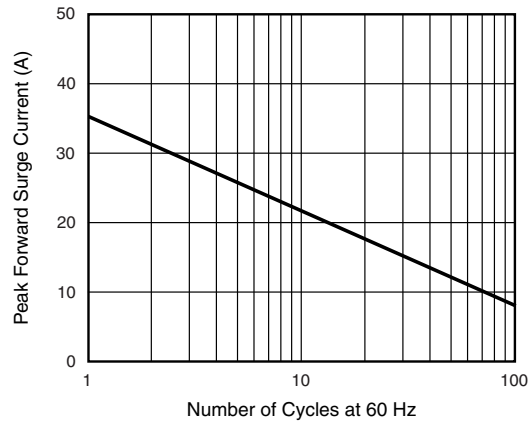


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

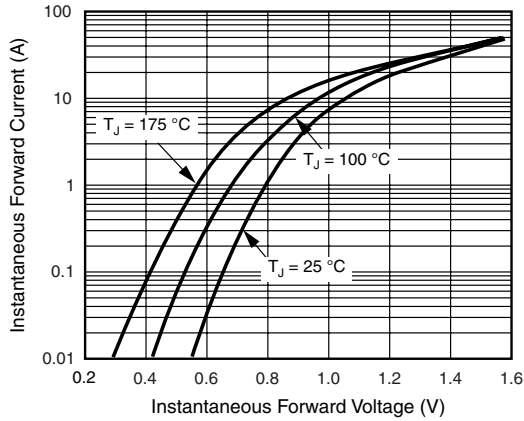


Figure 3. Typical Instantaneous Forward Characteristics

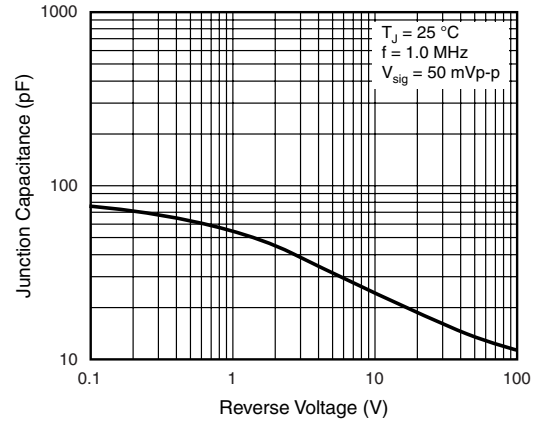


Figure 5. Typical Junction Capacitance

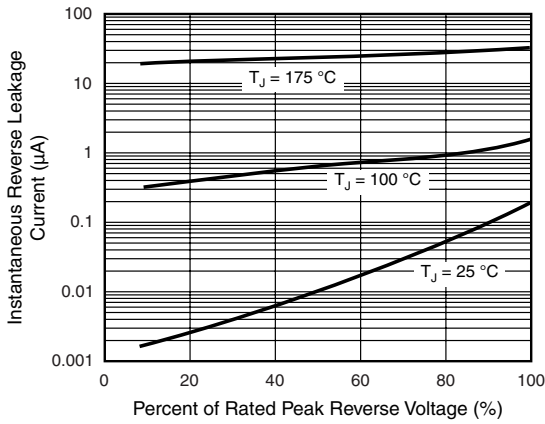
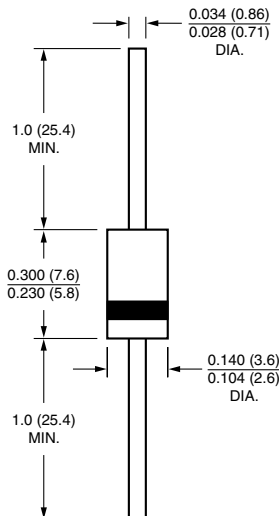


Figure 4. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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