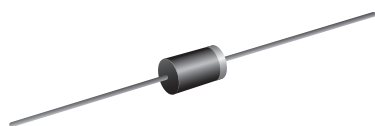


# Miniature Ultrafast Plastic Rectifier


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

## 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 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2.0 A
$V_{RRM}$	50 V, 100 V, 150 V, 200 V
$I_{FSM}$	80 A
$t_{rr}$	15 ns
$V_F$	0.95 V
$T_J$ max.	150 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

## 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-15 (DO-204AC)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** color band denotes cathode end

## MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	UG2A	UG2B	UG2C	UG2D	UNIT
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 at 0.375" (9.5 mm) lead length at $T_L = 75\text{ °C}$ (fig. 1)	$I_{F(AV)}$	2.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	80				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 noted)

PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	$I_F = 2.0\text{ A}$		$V_F^{(1)}$	0.95	V
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25\text{ }^{\circ}\text{C}$	$I_R$	5.0	$\mu\text{A}$
		$T_A = 100\text{ }^{\circ}\text{C}$		200	
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$		$t_{rr}$	15	ns
Typical reverse recovery time	$I_F = 2.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\text{ }\%$ $I_{RM}$	$T_J = 25\text{ }^{\circ}\text{C}$	$t_{rr}$	25	ns
		$T_J = 100\text{ }^{\circ}\text{C}$		35	
Typical stored charge	$I_F = 2.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_{rr} = 10\text{ }\%$ $I_{RM}$	$T_J = 25\text{ }^{\circ}\text{C}$	$Q_{rr}$	10	nC
		$T_J = 100\text{ }^{\circ}\text{C}$		22	
Typical junction capacitance	4 V, 1 MHz		$C_J$	15	pF

**Note**(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	UG2A	UG2B	UG2C	UG2D	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	45				$^{\circ}\text{C}/\text{W}$

**Note**

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

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
UG2D-E3/54	0.404	54	4000	13" diameter paper tape and reel
UG2D-E3/73	0.404	73	2000	Ammo pack packaging



## RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

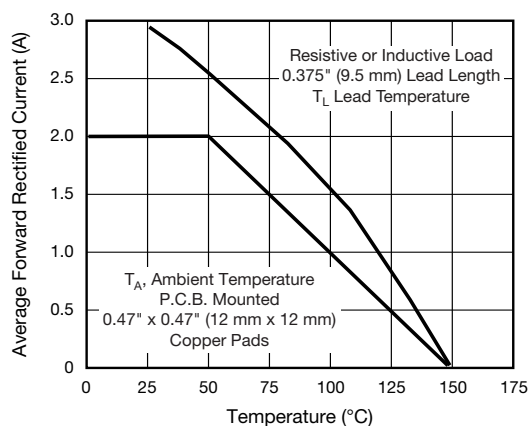


Fig. 1 - Maximum Forward Current Derating Curves

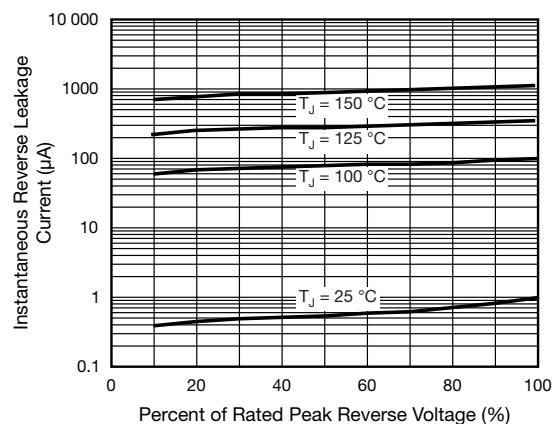


Fig. 4 - Typical Reverse Leakage Characteristics

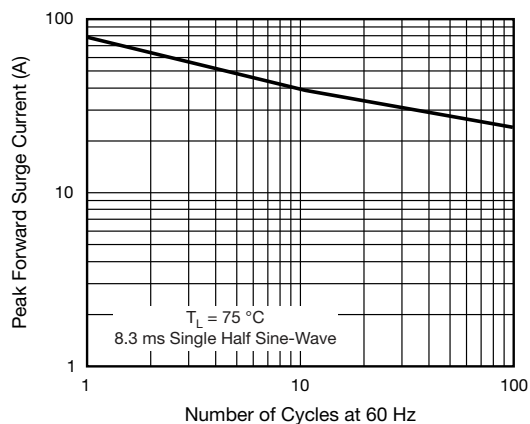


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

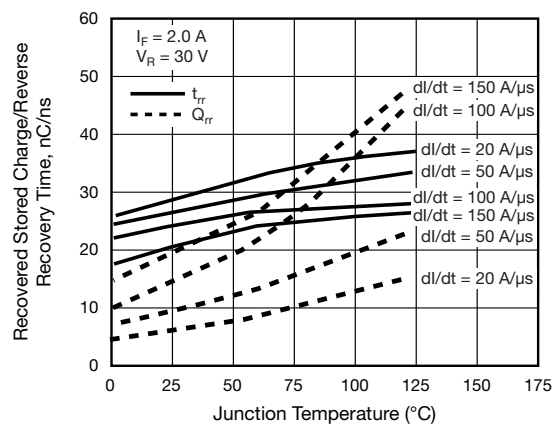


Fig. 5 - Reverse Switching Characteristics

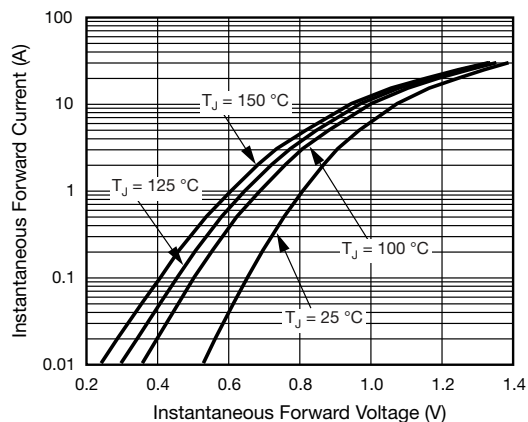


Fig. 3 - Typical Instantaneous Forward Characteristics

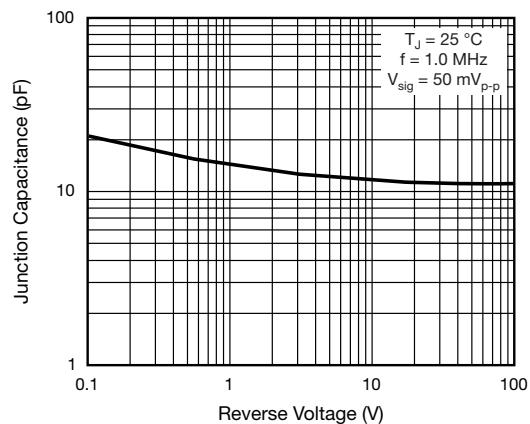
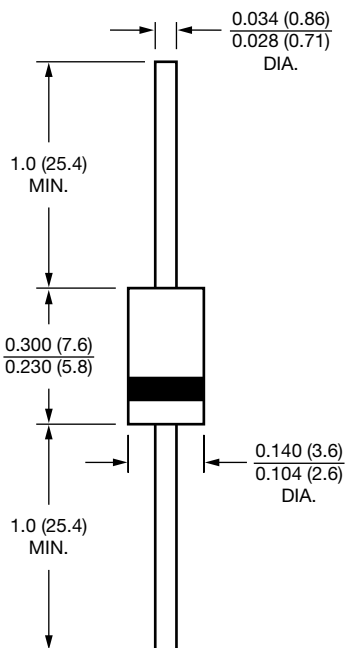


Fig. 6 - Typical Junction Capacitance



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

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





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