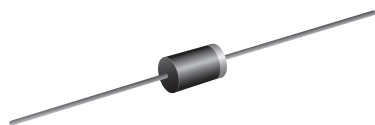




## Ultrafast Plastic Rectifier



DO-15 (DO-204AC)

### FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- 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

### 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	300 V, 400 V
$I_{FSM}$	50 A
$t_{rr}$	35 ns
$V_F$ at $I_F = 2.0$ A	0.910 V
$T_J$ max.	150 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	UG2F	UG2G	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	300	400	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	50		A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150		°C

ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 1.0$ A	$T_J = 25$ °C	$V_F^{(1)}$	0.921	-	V
	$I_F = 2.0$ A			1.016	1.10	
	$I_F = 1.0$ A	$T_J = 125$ °C		0.772	-	
	$I_F = 2.0$ A			0.910	1.02	
Maximum reverse current	Rated $V_R$	$T_J = 25$ °C	$I_R^{(2)}$	1.8	10	$\mu$ A
		$T_J = 100$ °C		108	200	
Maximum reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A		$t_{rr}$	23	35	ns
Typical reverse recovery time	$I_F = 1.0$ A, $dI/dt = 100$ A/ $\mu$ s, $V_R = 30$ V, $I_{rr} = 0.1 I_{RM}$		$t_{rr}$	31	-	ns
Typical reverse recovery current			$I_{RM}$	1.7	-	A
Typical stored charge			$Q_{rr}$	29	-	nC
Typical junction capacitance			$C_J$	10	-	pF

### Notes

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width  $\leq$  40 ms



THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	UG2F	UG2G	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	45		$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	14		

**Note**

(1) Thermal resistance junction to lead PCB mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
UG2G-E3/54	0.404	54	4000	13" diameter paper tape and reel
UG2G-E3/73	0.404	73	2000	Ammo pack packaging

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

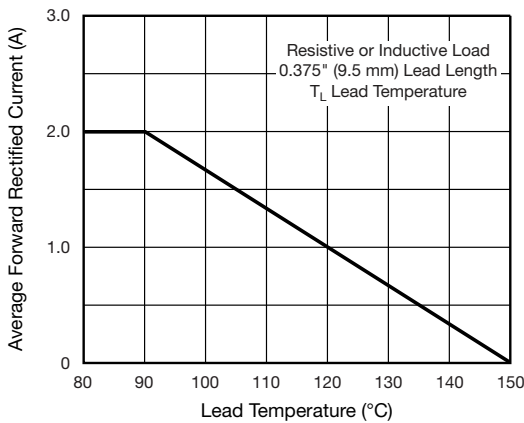


Fig. 1 - Maximum Forward Current Derating Curves

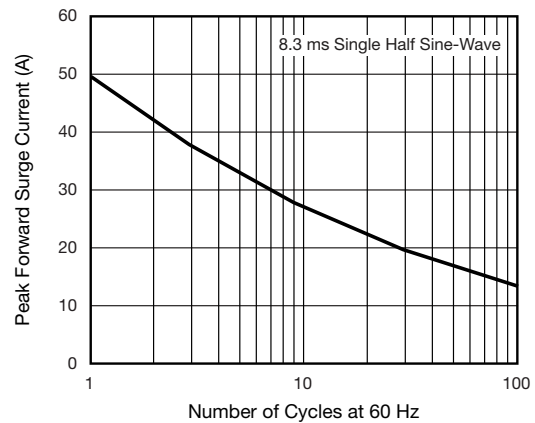


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

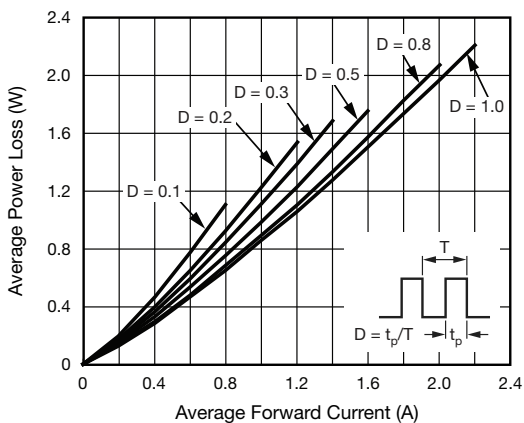


Fig. 2 - Forward Power Loss Characteristics

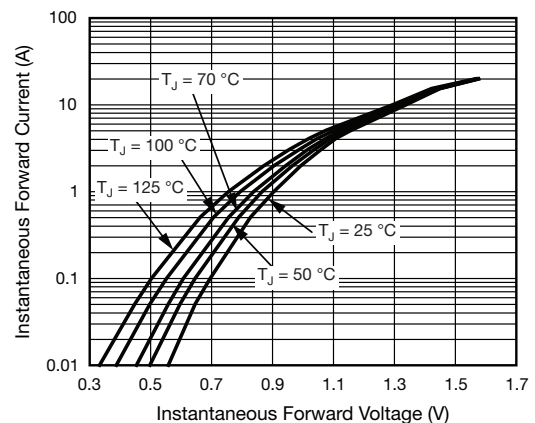


Fig. 4 - Typical Instantaneous Forward Characteristics

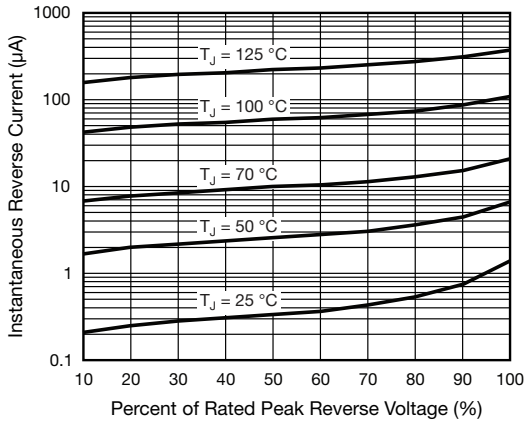


Fig. 5 - Typical Reverse Leakage Characteristics

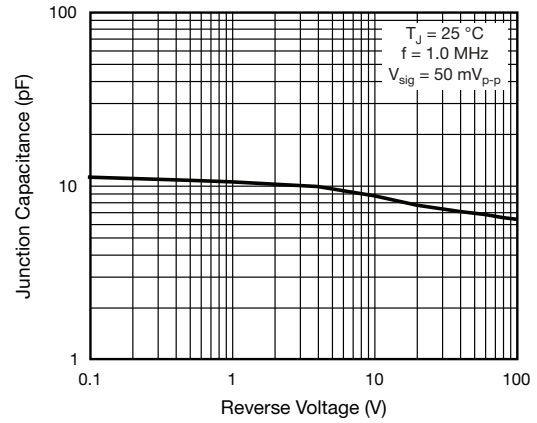
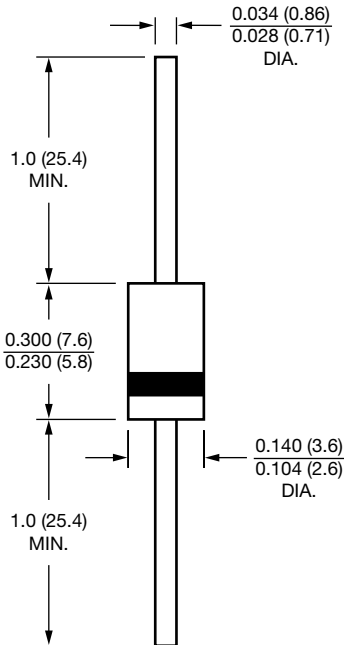


Fig. 6 - Typical Junction Capacitance

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

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





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