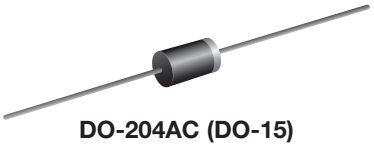
Miniature Ultrafast Plastic Rectifier



DO-204AC (DO-15)

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
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	50 V to 200 V
I_{FSM}	80 A
t_{rr}	15 ns
V_F	0.95 V
T_J max.	150 °C

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

Note

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**UG2A**	**UG2B**	**UG2C**	**UG2D**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	45				°C/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 °C unless otherwise noted)

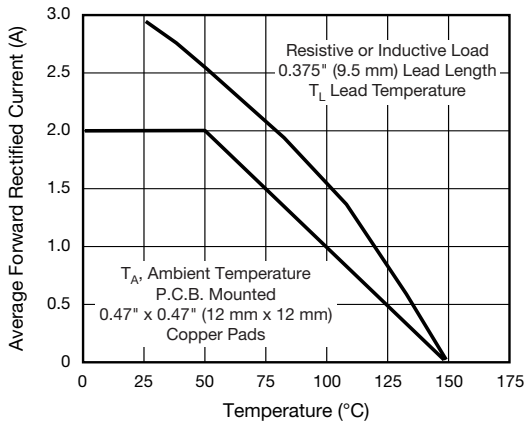


Fig. 1 - Maximum Forward Current Derating Curves

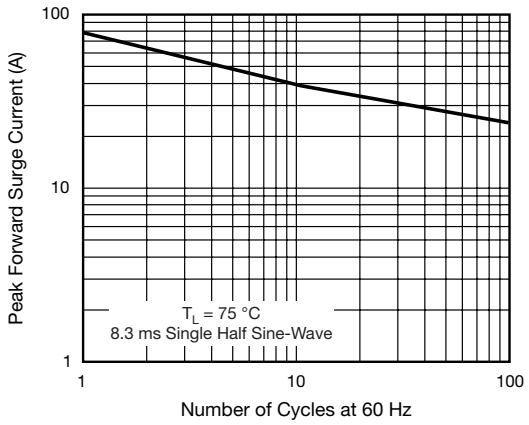


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

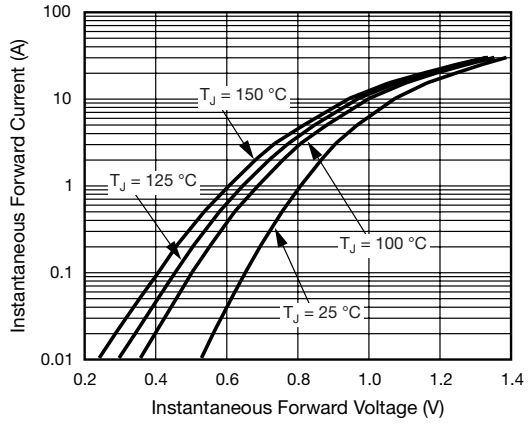


Fig. 3 - Typical Instantaneous Forward Characteristics

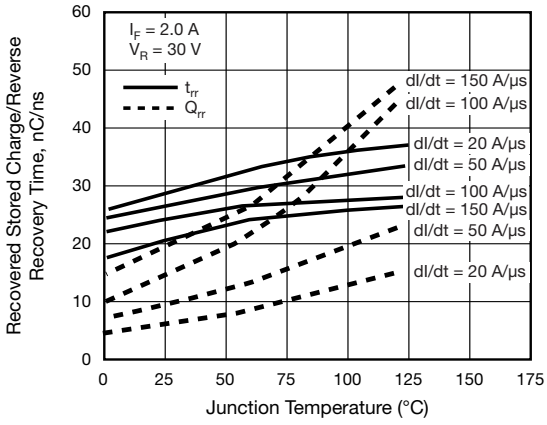


Fig. 5 - Reverse Switching Charateristics

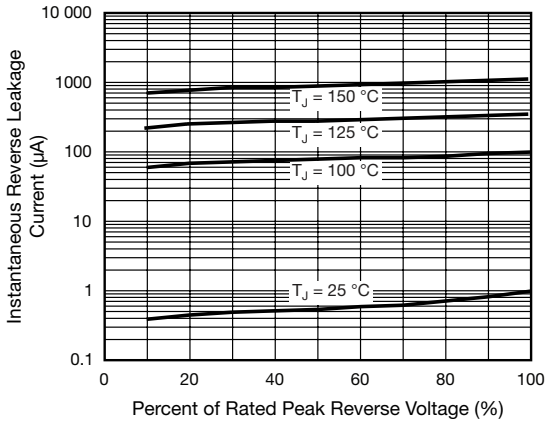


Fig. 4 - Typical Reverse Leakage Characteristics

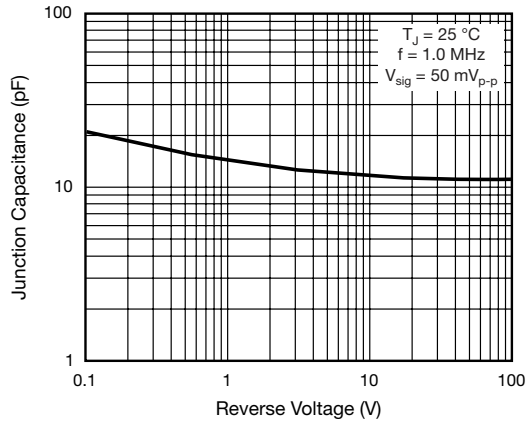
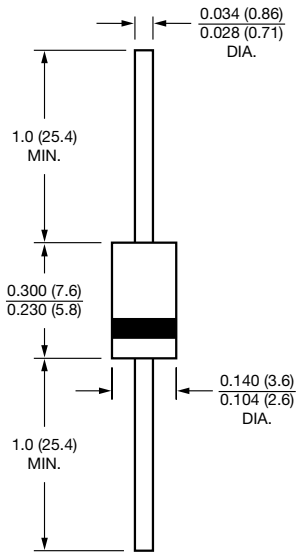


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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