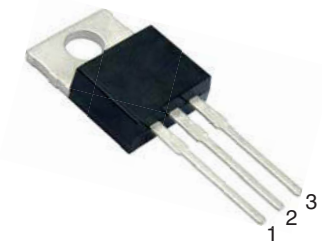
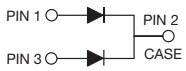
UGE18ACT, UGE18BCT, UGE18CCT, UGE18DCT

Dual Common Cathode Ultrafast Plastic Rectifier

TO-220AB



UGE18xCT



FEATURES

- Power pack
- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low forward voltage drop
- 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

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

MECHANICAL DATA

Case: TO-220AB

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 JESD22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	18 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	175 A
t_{rr}	20 ns
V_F at I_F	0.95 V
T_J max.	150 °C
Package	TO-220AB
Diode variations	Common cathode

MAXIMUM RATINGS (T_C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	UGE18ACT	UGE18BCT	UGE18CCT	UGE18DCT	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Max. RMS voltage	V_{RMS}	35	70	105	140	V
Max. DC blocking voltage	V_{DC}	50	100	150	200	V
Max. average forward rectified current at T_C = 105 °C	$I_{F(AV)}$	18				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	175				A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 150				°C

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ELECTRICAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**UGE18ACT**	**UGE18BCT**	**UGE18CCT**	**UGE18DCT**	**UNIT**
Max. instantaneous forward voltage per diode (1)	9.0 A		V_F	1.1				V
	20 A			1.2				
	5.0 A	T_J = 100 °C		0.95				
Max. DC reverse current at rated DC blocking voltage per diode		T_A = 25 °C	I_R	10				µA
		T_A = 100 °C		300				
Max. reverse recovery time per diode	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	20				ns
Max. reverse recovery time per diode	I_F = 9.0 A, V_R = 30 V, dI/dt = 50 A/µs, I_{rr} = 10 % I_{RM}	T_J = 25 °C	t_{rr}	30				ns
		T_J = 100 °C		50				
Max. stored charge per diode	I_F = 9.0 A, V_R = 30 V, dI/dt = 50 A/µs, I_{rr} = 10 % I_{RM}	T_J = 25 °C	Q_{rr}	20				nC
		T_J = 100 °C		45				
Typical junction capacitance per diode	at 4.0 V, 1 MHz		C_J	30				pF

Notes

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

THERMAL CHARACTERISTICS (T_C = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**UGE18ACT**	**UGE18BCT**	**UGE18CCT**	**UGE18DCT**	**UNIT**
Typical thermal resistance from junction to case per diode	$R_{\theta JC}$	4.0				°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-220AB	UGE18DCT-E3/45	1.85	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

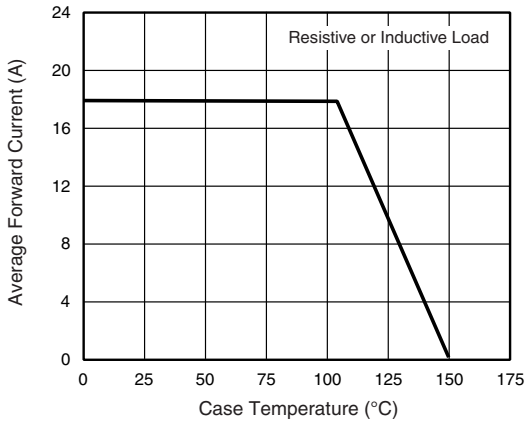

Fig. 1 - Forward Current Derating Curve

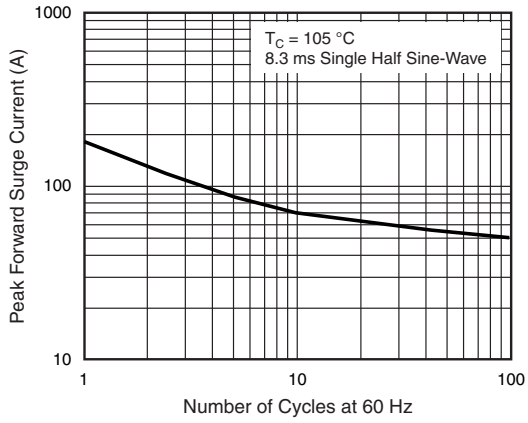

Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current Per Diode

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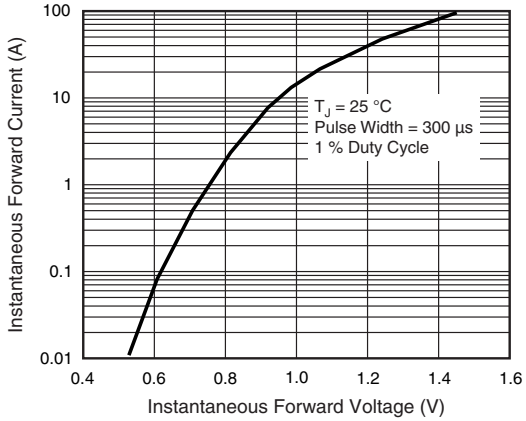


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

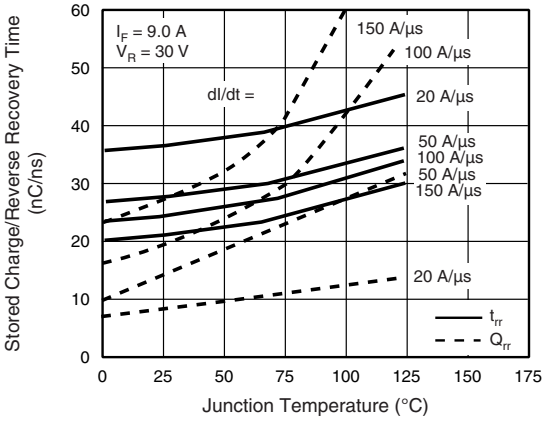


Fig. 5 - Reverse Switching Characteristics Per Diode

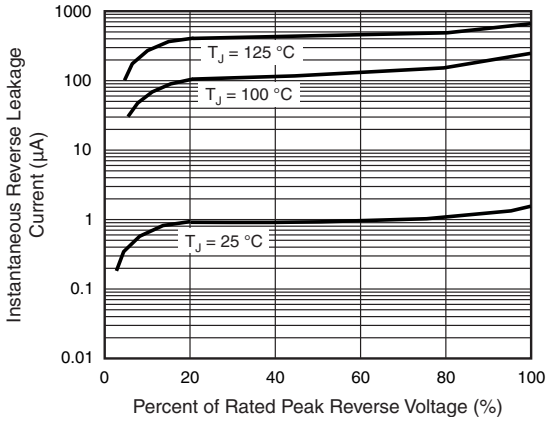


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

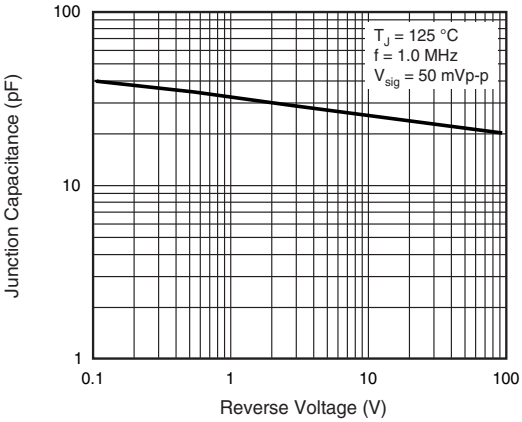
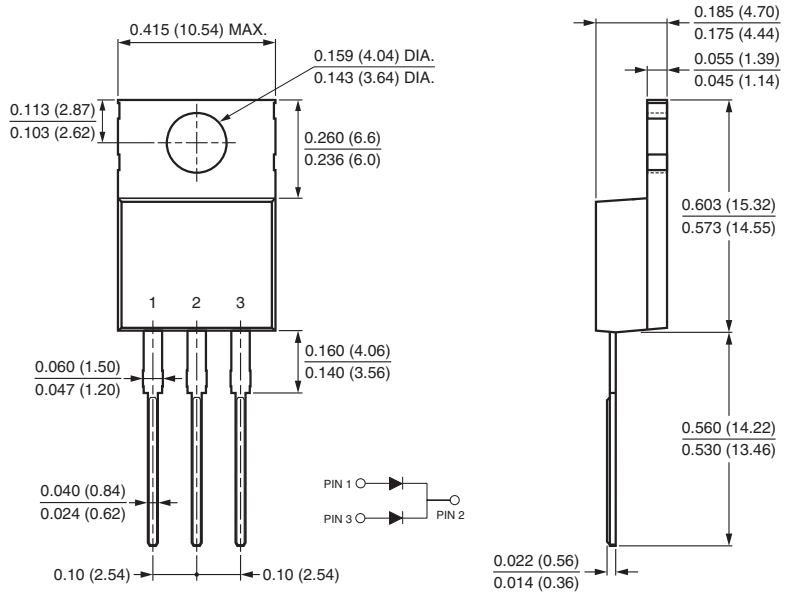


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB



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