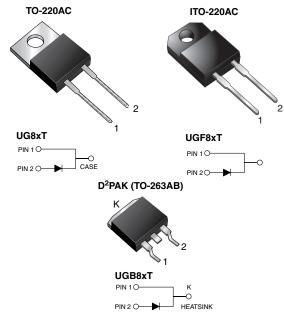
End of Life - February 2023

UG8xT, UGF8xT, UGB8xT

Vishay General Semiconductor

High Voltage Ultrafast Rectifier



www.vishay.com

LINKS TO ADDITIONAL RESOURCES



Revision: 30-Sep-2022

PRIMARY CHARACTERISTICS						
I _{F(AV})	8.0 A					
V _{RRM}	500 V to 600 V					
I _{FSM}	100 A					
t _{rr}	25 ns					
t _{fr}	500 ns					
V_F at $I_F = 8 A$	1.5 V					
T _J max.	150 °C					
Package	TO-220AC, ITO-220AC, D ² PAK (TO-263AB)					
Circuit configuration	Single					

FEATURES

- Power pack
- · Glass passivated chip junction
- Ultrafast recovery time
- · Soft recovery characteristics
- Low switching losses, high efficiency
- · High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB package))
- Solder dip 275 °C max., 10 s per JESD 22-B106 (for TO-220AC and ITO-220AC package)
- AEC-Q101 qualified available
 - -Automotive ordering code: base P/NHE3 (for ITO-220AC and D²PAK (TO-263AB package))
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

For use in high voltage and high frequency power factor correction application.

MECHANICAL DATA

Case: TO-220AC, ITO-220AC, D²PAK (TO-263AB) Molding compound meets UL 94V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified ("_X" denotes revision code e.g. A, B,....)

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs max.

MAXIMUM RATINGS (T _C = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	UG8HT	UG8JT	UNIT		
Max. repetitive peak reverse voltage	V _{RRM}	500	600	V		
Max. working reverse voltage	V _{RWM}	400	480	V		
Max. RMS voltage	V _{RMS}	350	420	V		
Max. DC blocking voltage	V _{DC}	500	600	V		
Max. average forward rectified current	I _{F(AV)}	8.0		А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100		A		
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150		°C		
Isolation voltage (ITO-220AB only) from terminals to heatsink t = 1 min	V _{AC}	1500		V		



Document Number: 88767



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ELECTRICAL CHARACTERISTICS ($T_c = 25 \degree C$ unless otherwise noted)							
PARAMETER	TEST C	SYMBOL	UG8HT	UG8JT	UNIT		
Max. instantaneous forward voltage ⁽¹⁾	I _F = 8 A	T _J = 25 °C	VF	1.75		v	
	I _F = 8 A	T _J = 125 °C	۷F	1.50			
		T _J = 25 °C		30		μA	
Max. DC reverse current at V _{RWM}		T _J = 100 °C	I _R	800		μA	
		T _J = 125 °C		4.0		mA	
	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	25		ns	
Max. reverse recovery time	I_F = 1.0 A, dI/dt = 50 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}		t _{rr}	50		ns	
Typical softness factor (t _b /t _a)	I _F = 8.0 A, dI/dt = 240	S	1.0		-		
	I_F = 8.0 A, dI/dt = 64 A/µs, V_R = 400 V, T_C = 125 $^\circ C$		I _{RM}	I _{RM} 5.5		А	
Max. reverse recovery current	$I_F = 8.0 \text{ A}, \text{ dI/dt} = 240 \text{ A/}\mu\text{s}, V_R = 400 \text{ V}, T_C = 125 ^\circ\text{C}$		I _{RM}	1	0	А	
Peak forward recovery time	I _F = 8.0 A, dl/dt = 64 A	t _{fr}	50	00	ns		

Note

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_C = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	UG8	UGF	UGB8	UNIT	
Typical thermal resistance from junction to case	R _{θJC}	2.2	5.0	2.2	°C/W	

ORDERING INFORMATION (Example)							
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
TO-220AC	UG8JT-E3/45	1.80	45	50/tube	Tube		
ITO-220AC	UGF8JT-E3/45	1.95	45	50/tube	Tube		
D ² PAK (TO-263AB)	UGB8JT-E3/45	1.33	45	50/tube	Tube		
D ² PAK (TO-263AB)	UGB8JT-E3/81	1.33	81	800/reel	Tape and reel		
ITO-220AC	UGF8JTHE3_A/P ⁽¹⁾	1.95	Р	50/tube	Tube		
D ² PAK (TO-263AB)	UGB8JTHE3_A/P ⁽¹⁾	1.33	Р	50/tube	Tube		
D ² PAK (TO-263AB)	UGB8JTHE3_A/I ⁽¹⁾	1.33	l	800/reel	Tape and reel		

Note

⁽¹⁾ AEC-Q101 qualified available in ITO-220 and D²PAK (TO-263AB) package



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

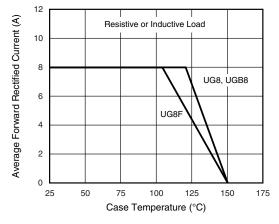


Fig. 1 - Max. Forward Current Derating Curve

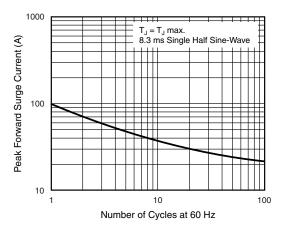


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

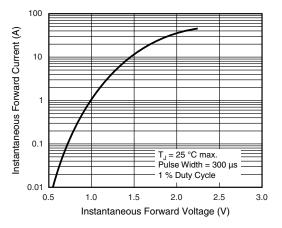


Fig. 3 - Typical Instantaneous Forward Characteristics

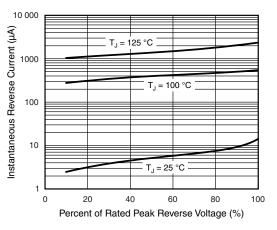


Fig. 4 - Typical Reverse Leakage Characteristics

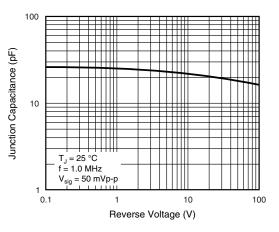


Fig. 5 - Typical Junction Capacitance

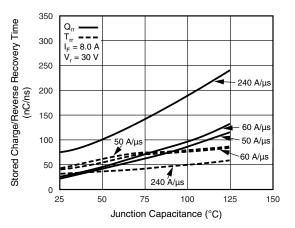


Fig. 6 - Reverse Switching Characteristics

Revision: 30-Sep-2022

3

Document Number: 88767

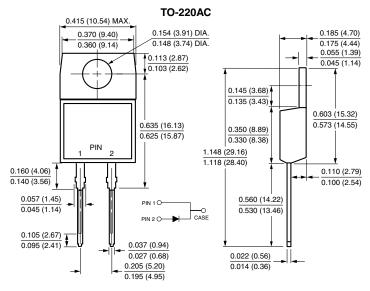
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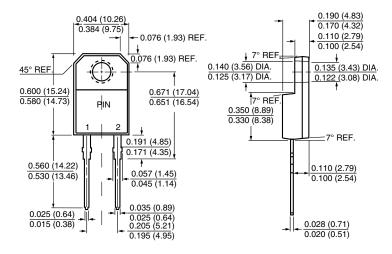
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

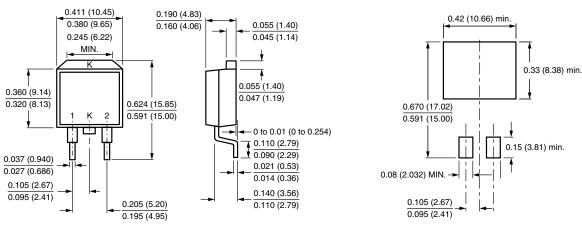


ITO-220AC



D²PAK (TO-263AB)





Revision: 30-Sep-2022

Document Number: 88767

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4



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