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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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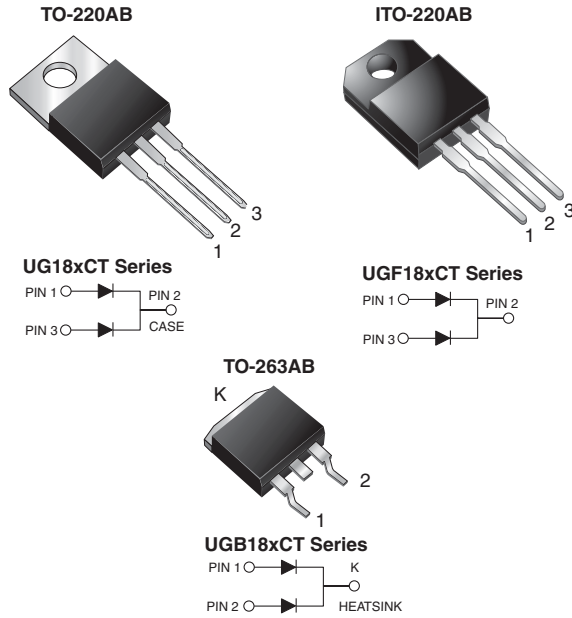
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Dual Common Cathode Ultrafast Plastic Rectifier



FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 275 °C max., 10 s per JESD 22-B106 (for TO-220AB and ITO-220AB package)
- AEC-Q101 qualified
- 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.

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	18 A
V_{RRM}	50 V to 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, ITO-220AB, TO-263AB
Diode variations	Common cathode

MECHANICAL DATA

Case: TO-220AB, ITO-220AB, TO-263AB

Molding compound meets UL 94V-0 flammability rating
 Base P/N-E3 - RoHS-compliant, commercial grade
 Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

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 maximum

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	UG18ACT	UG18BCT	UG18CCT	UG18DCT	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
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1$ min	V_{AC}	1500				V



ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	UG18ACT	UG18BCT	UG18CCT	UG18DCT	UNIT
Max. instantaneous forward voltage per diode ⁽¹⁾	9.0 A	T _J = 100 °C	V _F	1.1			V	
	20 A			1.2				
	5.0 A			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, dl/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, dl/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	UG18	UGF18	UGB18	UNIT
Typical thermal resistance from junction to case per diode	R _{θJC}	4.0	6.0	4.0	°C/W

ORDERING INFORMATION (EXAMPLE)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	UG18DCT-E3/45	1.85	45	50/tube	Tube
ITO-220AB	UGF18DCT-E3/45	2.00	45	50/tube	Tube
TO-263AB	UGB18DCT-E3/45	1.35	45	50/tube	Tube
TO-263AB	UGB18DCT-E3/81	1.35	81	800/reel	Tape and reel
TO-220AB	UG18DCTHE3/45 ⁽¹⁾	1.85	45	50/tube	Tube
ITO-220AB	UGF18DCTHE3/45 ⁽¹⁾	2.00	45	50/tube	Tube
TO-263AB	UGB18DCTHE3/45 ⁽¹⁾	1.35	45	50/tube	Tube
TO-263AB	UGB18DCTHE3/81 ⁽¹⁾	1.35	81	800/reel	Tape and reel

Note

⁽¹⁾ AEC-Q101 qualified



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

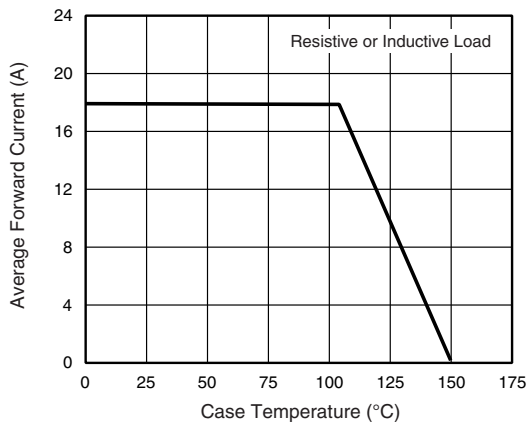


Fig. 1 - Forward Current Derating Curve

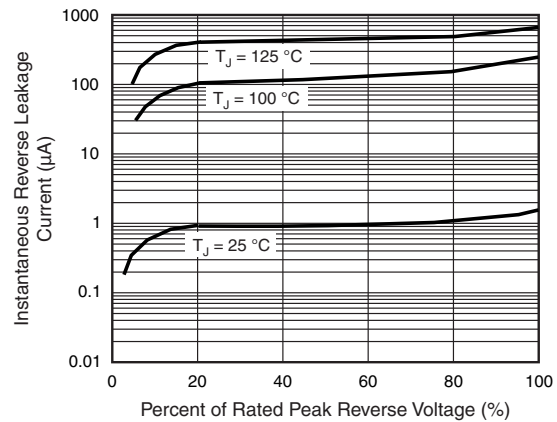


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

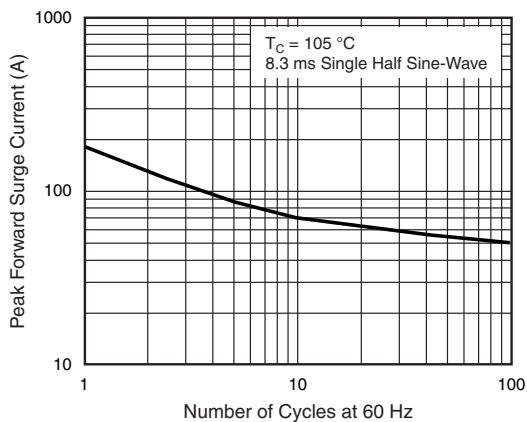


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current Per Diode

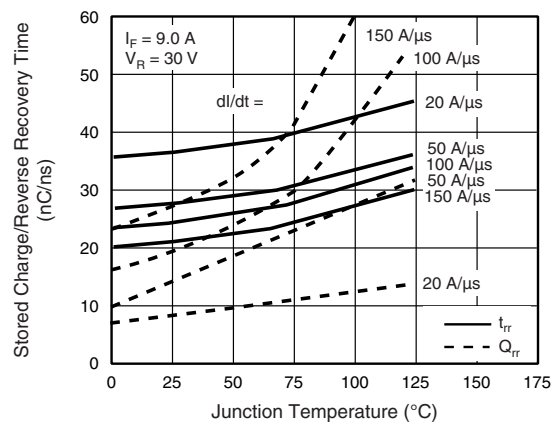


Fig. 5 - Reverse Switching Characteristics Per Diode

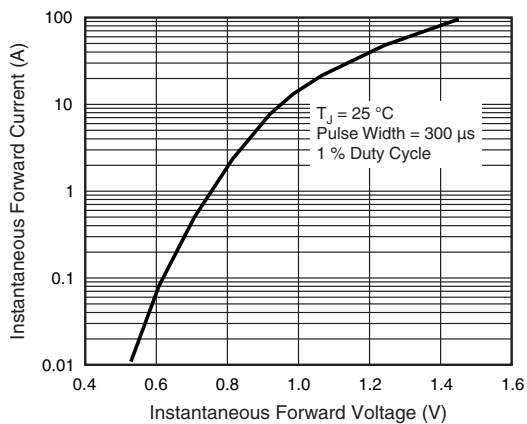


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

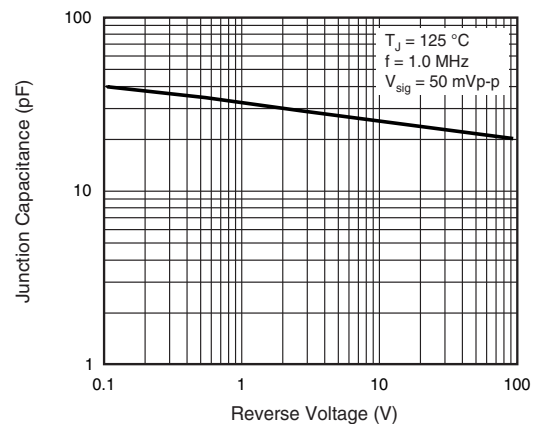
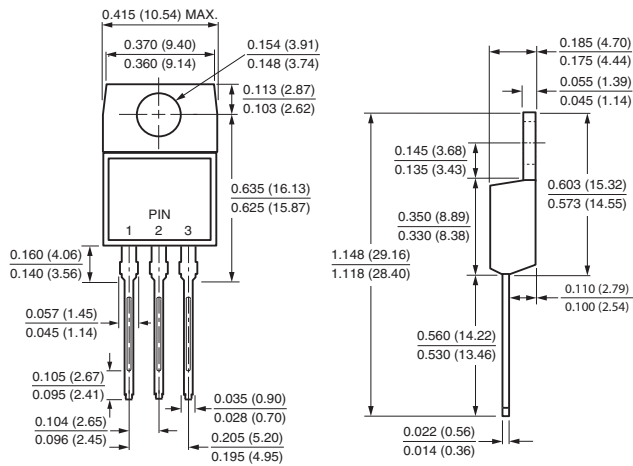


Fig. 6 - Typical Junction Capacitance Per Diode

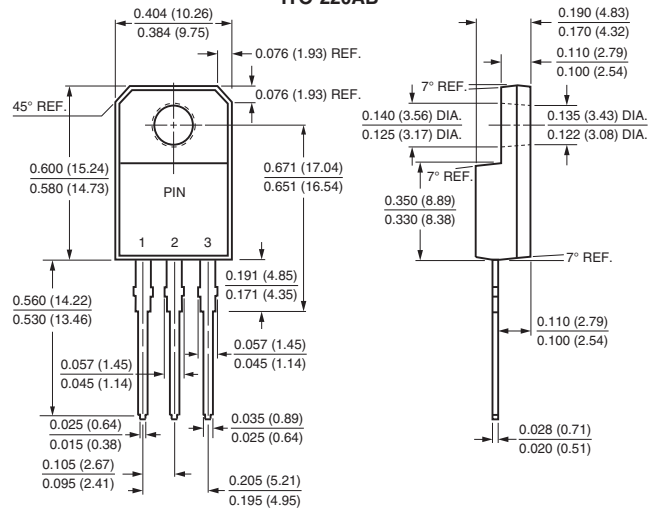


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

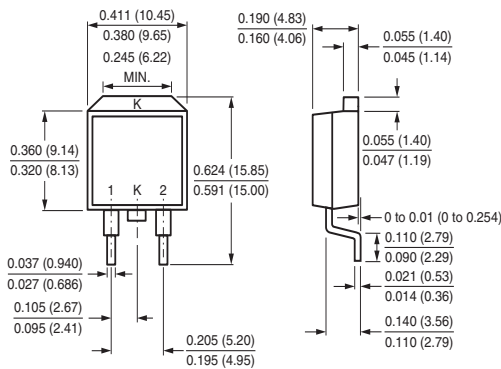
TO-220AB



ITO-220AB



TO-263AB



Mounting Pad Layout

