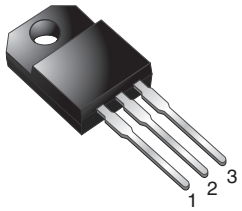
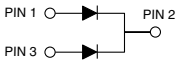
Dual Common-Cathode Ultrafast Recovery Rectifier

ITO-220AB



UHF20FCT



FEATURES

- Power pack
- Oxide planar chip junction
- Ultrafast recovery times
- Soft recovery characteristics
- 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

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency power factor correctors, switching mode power supplies, freewheeling diodes and secondary DC/DC rectification application.

MECHANICAL DATA

Case: ITO-220AB

Molding compound meets UL 94V-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 max.

PRIMARY CHARACTERISTICS	
$I_{F(peak)}$	2 x 10 A
V_{RRM}	300 V
I_{FSM}	180 A
t_{rr}	25 ns
V_F at I_F = 10 A	0.85 V
T_J max.	175 °C
Package	ITO-220AB
Diode variation	Common cathode

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)				
PARAMETER		**SYMBOL**	**UHF20FCT**	**UNIT**
Max. repetitive peak reverse voltage		V_{RRM}	300	V
Max. DC working forward current at T_C = 125 °C	per device	$I_{F(peak)}$	20	A
	per diode		10	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	per diode	I_{FSM}	180	A
Isolation voltage (ITO-220AB only) from terminal to heatsink t = 1 min		V_{AC}	1500	V
Operating junction and storage temperature range		T_J, T_{STG}	- 55 to + 175	°C

ELECTRICAL CHARACTERISITICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Max. instantaneous forward voltage per diode (1)	I_F = 5.0 A	T_A = 25 °C	V_F	0.96	-	V
	I_F = 10.0 A			1.02	1.20	
	I_F = 5.0 A	T_A = 125 °C		0.77	-	
	I_F = 10.0 A			0.85	-	
Max. reverse current per diode (2)	V_R = 300 V	T_A = 25 °C	I_R	0.06	5	µA
		T_A = 125 °C		25	150	
Max. reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	20	25	ns
Max. reverse recovery time per diode	I_F = 1.0 A, dI/dt = 50 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}		t_{rr}	28	35	ns
Typical softness factor (t_b/t_a)	I_F = 10 A, dI/dt = 200 A/µs, V_R = 200 V, T_J = 125 °C per diode		S	0.36	-	-
Typical reverse recovery current			I_{RM}	7.0	-	A
Typical stored charge			Q_{rr}	160	-	nC
Typical forward recovery time per diode	I_F = 10 A, dI/dt = 80 A/µs, V_{FR} = 1.1 x $V_{F\ max.}$		t_{fr}	150	-	ns

Notes
(1) Pulse test: 300 µs pulse width, 1 % duty cycle
(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**UHF20FCT**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JA}$ (1)	50	°C/W
	$R_{\theta JC}$ (2)	4.6	

Notes
(1) Without heatsink, free air
(2) With infinite heatsink

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
ITO-220AB	UHF20FCT-E3/4W	1.74	4W	50/tube	Tube

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

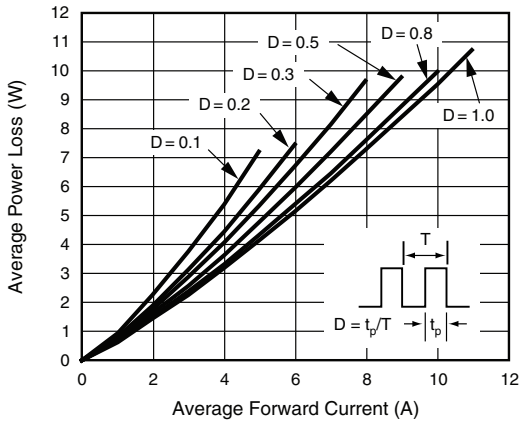


Fig. 1 - Forward Power Loss Characteristics Per Diode

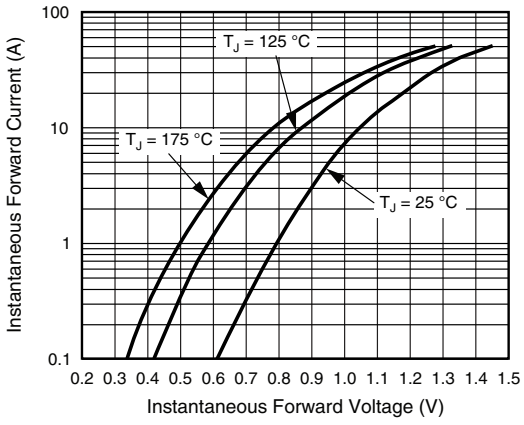


Fig. 2 - Typical Instantaneous Forward Characteristics Per Diode

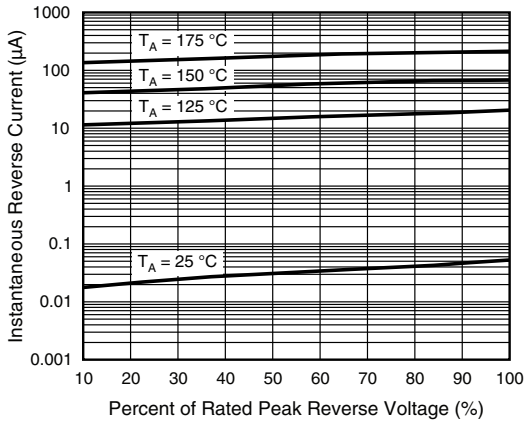


Fig. 3 - Typical Reverse Leakage Characteristics Per Diode

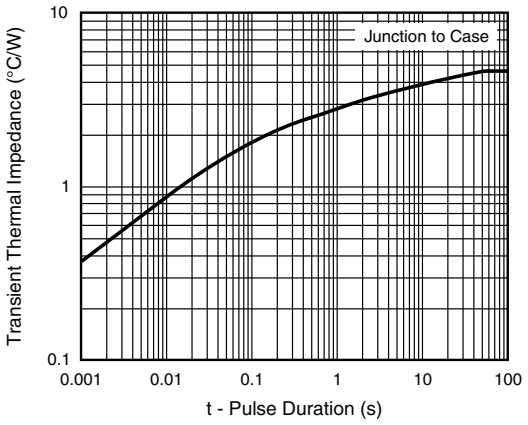


Fig. 5 - Typical Transient Thermal Impedance Per Diode

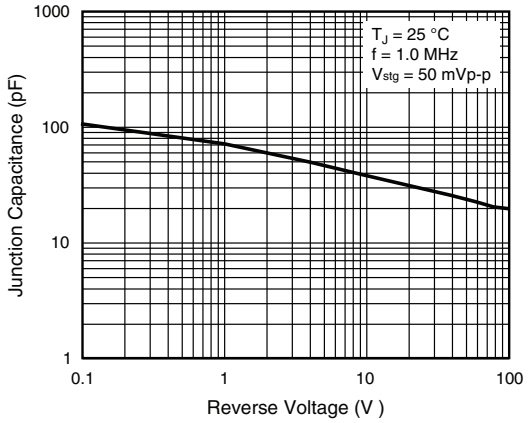
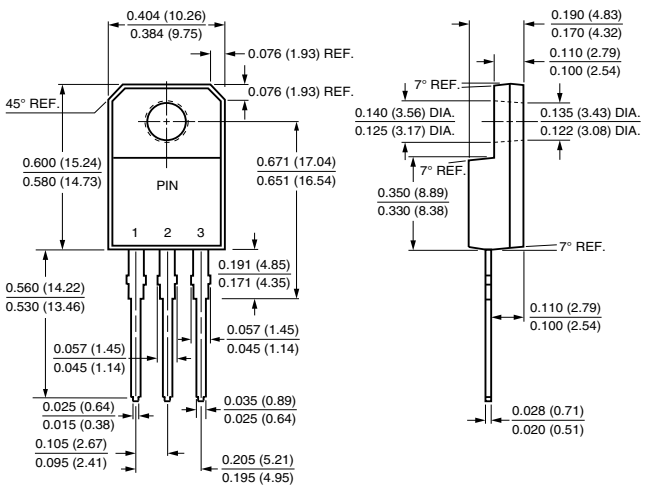


Fig. 4 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

ITO-220AB



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