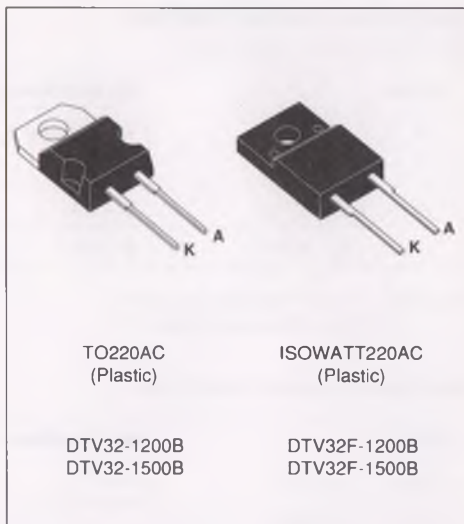


**(CRT HORIZONTAL DEFLECTION)**  
**HIGH VOLTAGE DAMPER DIODE**
**FEATURES**

- HIGH BREAKDOWN VOLTAGE CAPABILITY
- HIGH FREQUENCY OPERATION
- SPECIFIED TURN ON SWITCHING CHARACTERISTICS
- TYPICAL TOTAL LOSSES : 3.5W  
( $I_{Fpeak} = 6\text{ A}$ ,  $F = 64\text{ kHz}$ )
- SUITABLE WITH **BUH** TRANSISTORS SERIES
- INSULATED VERSION (ISOWATT220AC) :  
Insulating voltage = 2000 V DC  
Capacitance = 12 pF

**DESCRIPTION**

High voltage diode especially designed for horizontal deflection stage in standard and high resolution displays for TV's and monitors. This device is packaged in TO220AC or ISOWATT220AC.


**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter		Value	Unit	
$I_F(\text{RMS})$	RMS forward current		15	A	
$I_F(\text{AV})$	Average forward current $\delta = 0.5$	TO220AC	$T_C = 130^\circ\text{C}$	6	A
		ISOWATT220AC	$T_C = 110^\circ\text{C}$	6	
$I_{FSM}$	Surge non repetitive forward current		$t_p = 10\text{ms}$ sinusoidal	100	A
$T_{stg}$ $T_j$	Storage and junction temperature range		- 40 to + 150 - 40 to + 150	$^\circ\text{C}$ $^\circ\text{C}$	

Symbol	Parameter	DTV32(F)-		Unit
		1200B	1500B	
VRRM	Repetitive peak reverse voltage	1200	1500	V
VRWM	Reverse working voltage	1000	1350	V

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
Rth (j-c)	Junction to case	TO220AC	2	°C/W
		ISOWATT220AC	4	

**ELECTRICAL CHARACTERISTICS**

**STATIC CHARACTERISTICS**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub> *	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RWM</sub>			200	μA
	T <sub>j</sub> = 100°C				1	mA
V <sub>F</sub> **	T <sub>j</sub> = 25°C	I <sub>F</sub> = 6 A			1.5	V
	T <sub>j</sub> = 100°C	I <sub>F</sub> = 6 A			1.4	

Pulse test : \* tp = 5 ms, duty cycle < 2 %

\*\* tp = 380 μs, duty cycle < 2 %

**RECOVERY CHARACTERISTICS**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
trr (1)	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1 A V <sub>R</sub> = 30 V			175	ns
trr (1)	T <sub>j</sub> = 25°C		dI <sub>F</sub> /dt = -50 A/μs			
				250		ns
trr	T <sub>j</sub> = 25°C	I <sub>F</sub> = 100mA	I <sub>R</sub> = 100mA		140	ns

**TURN ON SWITCHING CHARACTERISTICS**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t <sub>FR</sub> (2)	T <sub>j</sub> = 100°C	I <sub>F</sub> = 6 A	dI <sub>F</sub> /dt = 80 A/μs		0.6	μs
V <sub>FP</sub> (2)				V <sub>FR</sub> = 2 V		

(1) Test following Jedec Standard

(2) Test representative of the application

To evaluate the conduction losses use the following equations :

$$V_F = 1.2 + 0.034 I_F$$

$$P = 1.2 \times I_{F(AV)} + 0.034 \times I_F^2_{(RMS)}$$

Fig.1 : Average forward power dissipation versus average forward current.

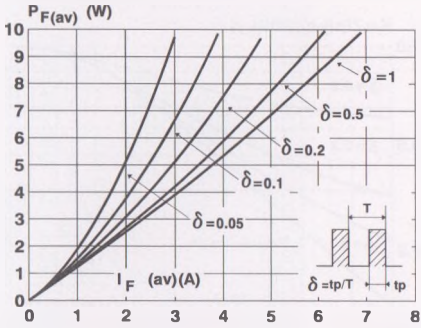


Fig.2 : Peak current versus form factor.

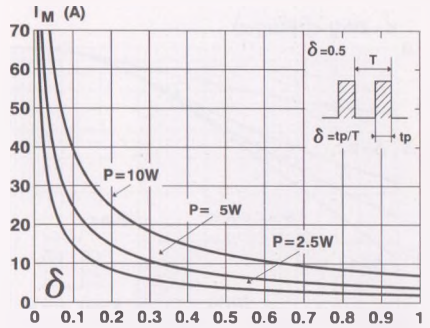


Fig.3 : Average current versus ambient temperature. (duty cycle : 0.5) (TO220AC)

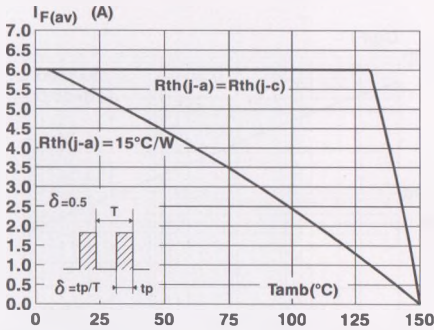


Fig.4 : Average current versus ambient temperature. (duty cycle : 0.5) (ISOWATT220AC)

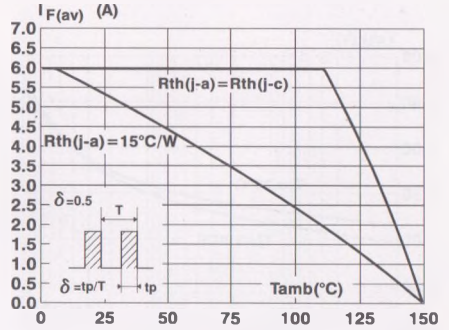


Fig.5 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (TO220AC)

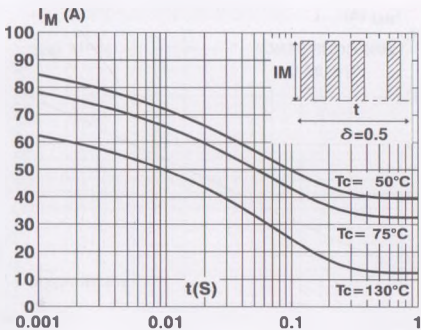


Fig.6 : Non repetitive surge peak forward current versus overload duration. (Maximum values) (ISOWATT220AC)

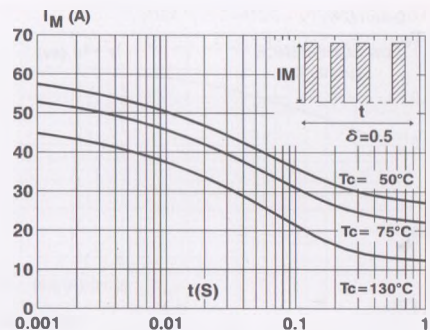


Fig.7 : Relative variation of thermal transient impedance junction to case versus pulse duration. (TO220AC)

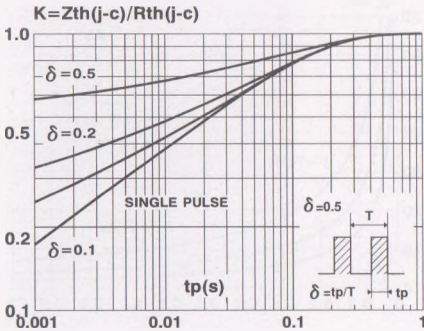


Fig.8 : Relative variation of thermal transient impedance junction to case versus pulse duration. (ISOWATT220AC)

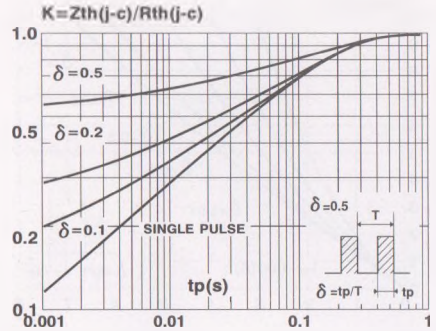


Fig.9 : Forward voltage drop versus forward current. (Maximum values)

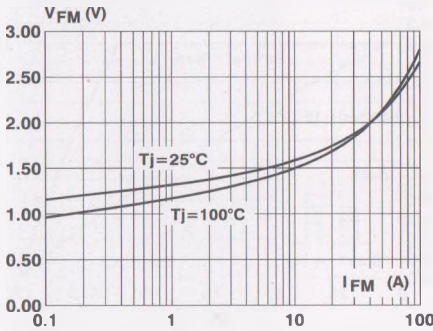


Fig.10 : Junction capacitance versus reverse voltage applied. (Typical values)

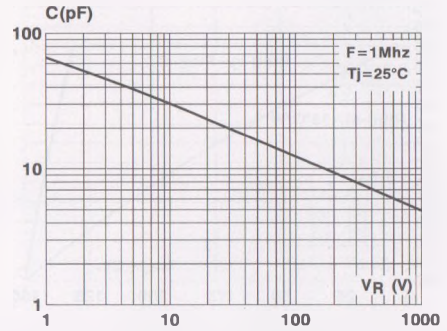


Fig.11 : Recovery charge versus dIF/dt.

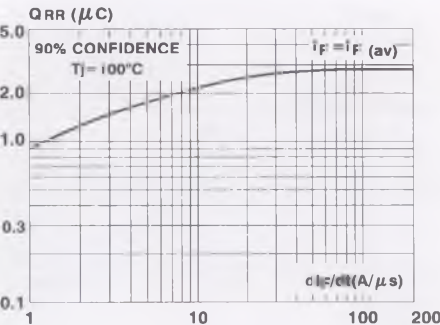


Fig.12 : Peak reverse current versus dIF/dt.

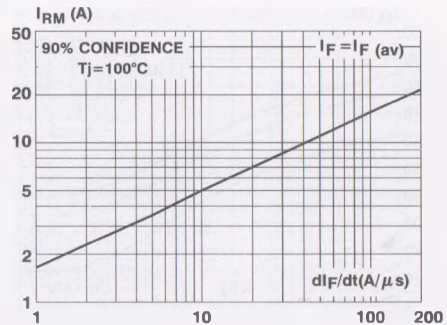


Fig.13 : Dynamic parameters versus junction temperature.

Fig.14 : Peak forward voltage versus  $dI_F/dt$ .

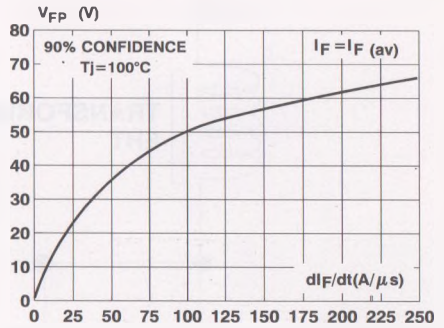
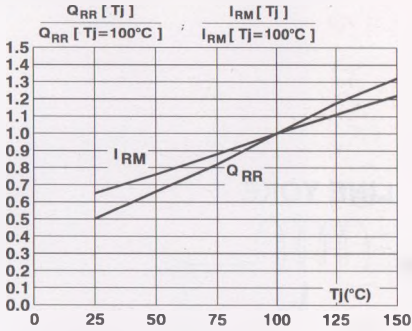
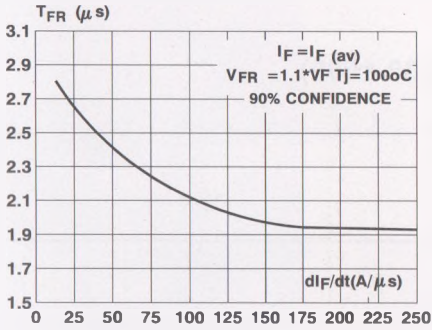
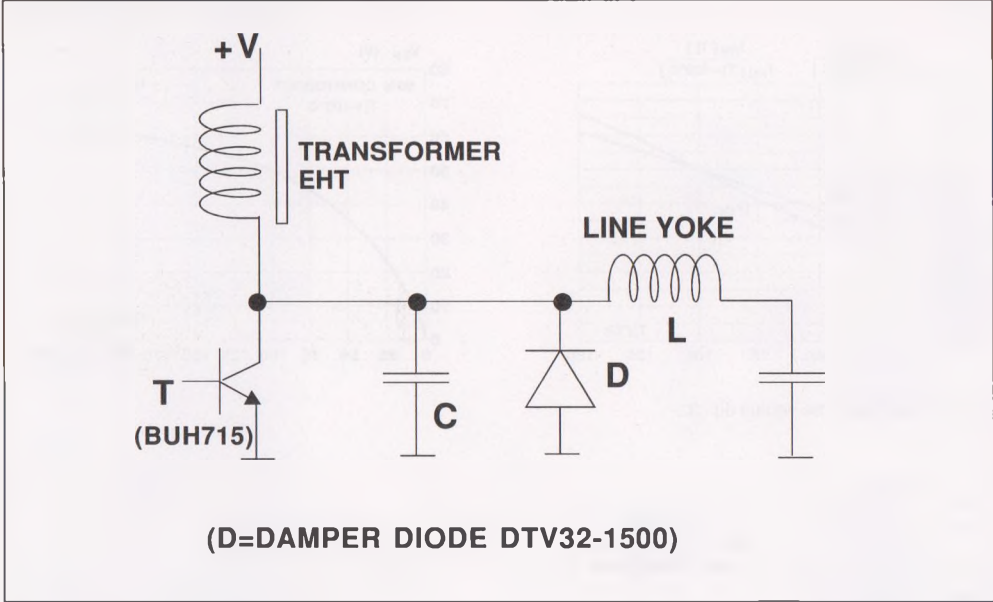


Fig.15 : Recovery time versus  $dI_F/dt$ .



BASIC HORIZONTAL DEFLECTION CIRCUIT



BASIC E-W DIODE MODULATOR CIRCUIT

