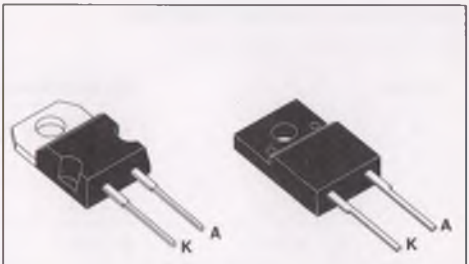
SGS-THOMSON MICROELECTRONICS

DTV32(F)-1200B
DTV32(F)-1500B

(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 A, F = 64 kHz)
- SUITABLE WITH **BUH** TRANSISTORS SERIES
- INSULATED VERSION (ISOWATT220AC) : Insulating voltage = 2000 V DC Capacitance = 12 pF



TO220AC (Plastic)

DTV32-1200B
DTV32-1500B

ISOWATT220AC (Plastic)

DTV32F-1200B
DTV32F-1500B

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
$I_{F(RMS)}$	RMS forward current			15	A
$I_{F(AV)}$	Average forward current $\delta = 0.5$	TO220AC	Tc=130°C	6	A
		ISOWATT220AC	Tc=110°C	6	
I_{FSM}	Surge non repetitive forward current		tp=10ms sinusoidal	100	A
Tstg T_j	Storage and junction temperature range			- 40 to + 150 - 40 to + 150	°C °C

Symbol	Parameter	DTV32(F)-		Unit
		1200B	1500B	
V_{RRM}	Repetitive peak reverse voltage	1200	1500	V
V_{RWM}	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_R *	T_j = 25°C	$V_R = V_{RWM}$			200	µA
	T_j = 100°C				1	mA
V_F **	T_j = 25°C	I_F = 6 A			1.5	V
	T_j = 100°C	I_F = 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_j = 25°C	I_F = 1 A V_R = 30 V	dI_F/dt = -50 A/µs			175	ns
trr (1)	T_j = 25°C		dI_F/dt = -15 A/µs		250		ns
trr	T_j = 25°C	I_F = 100mA	I_R = 100mA		140		ns

TURN ON SWITCHING CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{FR} (2)	T_j = 100°C	I_F = 6 A	dI_F/dt = 80 A/µs		0.6		µs
V_{FP} (2)		V_{FR} = 2 V			39		V

(1)Test following Jedec Standard
(2) Test representative of the application

To evaluate the conduction losses use the following equations :
$V_F = 1.2 + 0.034\ I_F$ $\qquad P = 1.2 \times I_{F(AV)} + 0.034 \times I_{F^2(RMS)}$

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

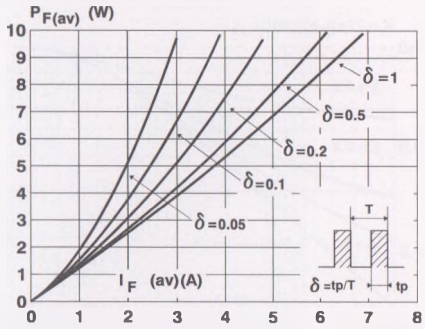


Fig.2 : Peak current versus form factor.

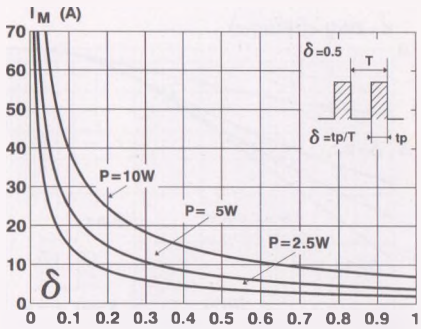


Fig.3 : Average current versus ambient temperature. (duty cycle : 0.5) (TO220AC)

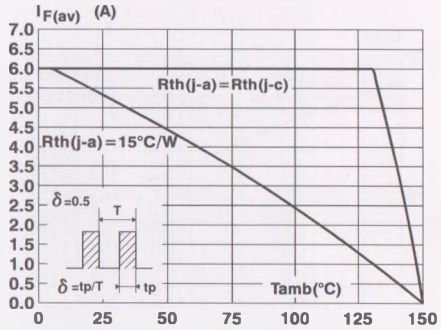


Fig.4 : Average current versus ambient temperature. (duty cycle : 0.5) (ISOWATT220AC)

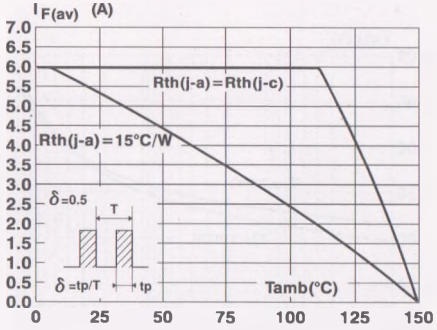


Fig.5 : Non repetitive surge peak forward current versus overload duration.
(Maximum values) (TO220AC)

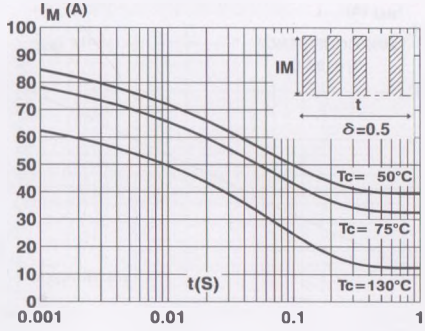


Fig.6 : Non repetitive surge peak forward current versus overload duration.
(Maximum values) (ISOWATT220AC)

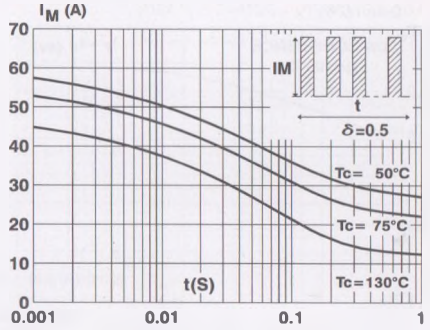


Fig.7 : Relative variation of thermal transient impedance junction to case versus pulse duration.
(TO220AC)

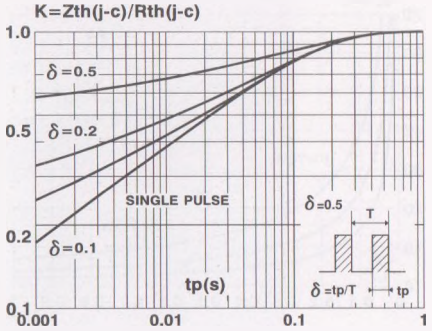


Fig.8 : Relative variation of thermal transient impedance junction to case versus pulse duration.
(ISOWATT220AC)

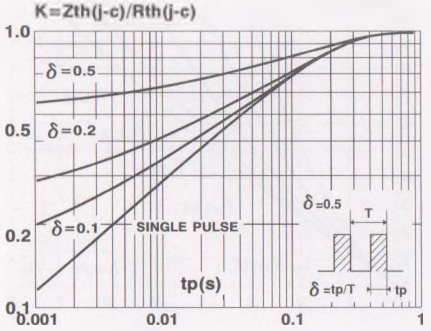


Fig.9 : Forward voltage drop versus forward current.
(Maximum values)

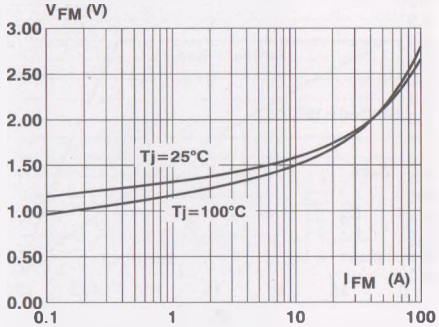


Fig.10 : Junction capacitance versus reverse voltage applied.
(Typical values)

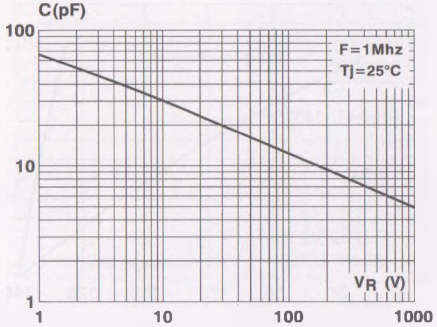


Fig.11 : Recovery charge versus dI_F/dt.

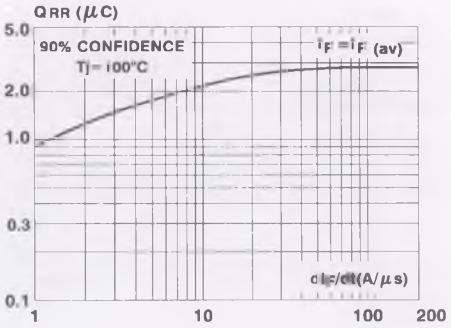


Fig.12 : Peak reverse current versus dI_F/dt.

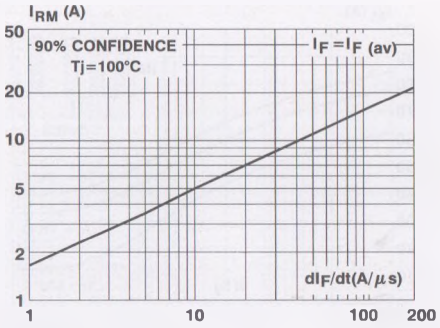


Fig.13 : Dynamic parameters versus junction temperature.

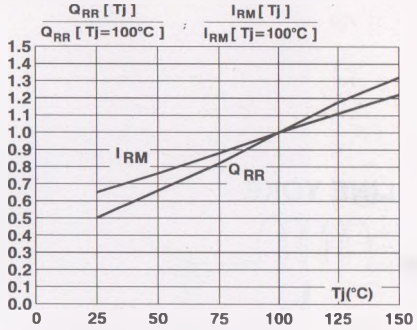


Fig.14 : Peak forward voltage versus dI_F/dt.

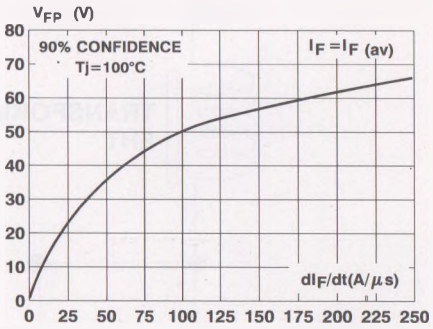
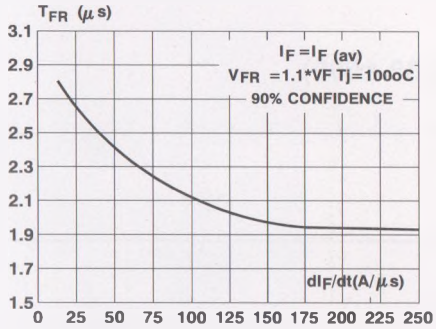
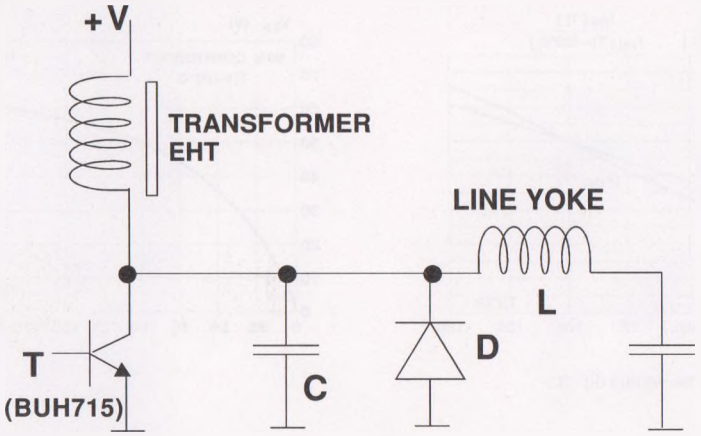


Fig.15 : Recovery time versus dI_F/dt.

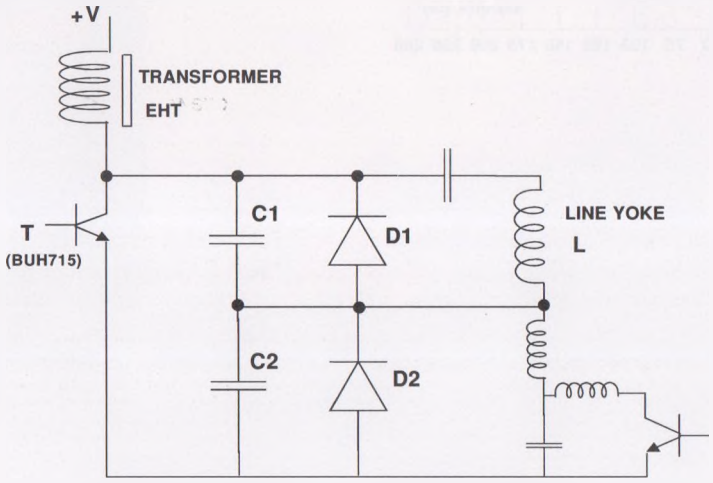


BASIC HORIZONTAL DEFLECTION CIRCUIT



(D=DAMPER DIODE DTV32-1500)

BASIC E-W DIODE MODULATOR CIRCUIT



D1=DTV32-1500 D2=BYT08-400

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