

(CRT HORIZONTAL DEFLECTION)
 HIGH VOLTAGE DAMPER & MODULATION DIODES

MAIN PRODUCTS CHARACTERISTICS

	MTV32	DTV32
I_F peak	3A	3A
V_{RRM}	600V	1000V
trr	50ns	70ns
V_F	1.6V	1.6V

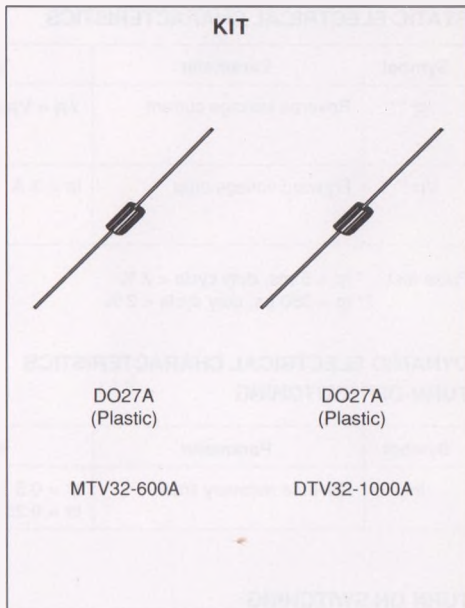
FEATURES

- PRODUCTS SPECIFIC TO HORIZONTAL DEFLECTION
- HIGH REVERSE VOLTAGE
- LOW SWITCHING LOSSES DUE TO SMALL RECOVERY CHARGES
- FULL KIT IN AXIAL PACKAGE

DESCRIPTION

High voltage diodes especially designed for horizontal deflection stage in standard and high resolution displays for TV's and monitors.

The kit includes both the DAMPER diode and the MODULATION diode. These devices are packaged in DO27A and are intended for use as a low cost kit solution in deflection circuitry with east-west correction.


ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value		Unit
			MTV32	DTV32	
V _{RRM}	Repetitive peak reverse voltage		600	1000	V
V _{RWM}	Reverse working voltage		600	1000	V
I _F peak	Peak forward current (1)	T _{amb} =120°C (2)	3	3	A
I _{FRM}	Repetitive peak forward current	tp ≤ 10μs	100	50	A
I _{FSM}	Surge non repetitive forward current	tp=10ms sinusoidal	150	150	A
T _{stg} T _j	Storage and junction temperature range		- 40 to + 150		°C °C

(1) δ = 0.5 and triangular waveform

(2) on infinite heatsink with 10mm lead length

THERMAL AND ELECTRICAL CHARACTERISTICS OF THE DTV32-1000A (DAMPER diode)

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction to ambient (*)	25	°C/W

(*) on infinite heatsink with 10mm lead length

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	V _R = V _{RWM}	T _j = 25°C		20	μA
			T _j = 125°C		2	mA
V _F **	Forward voltage drop	I _F = 3 A	T _j = 25°C		2.0	V
			T _j = 125°C		1.6	

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

** tp = 380 μs, duty cycle < 2 %

DYNAMIC ELECTRICAL CHARACTERISTICS

TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{rr}	Reverse recovery time	I _F = 0.5 A I _{rr} = 0.25 A I _R = 1 A T _j = 25°C			72	ns

TURN ON SWITCHING

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{FR}	Forward recovery time	I _F = 3 A dI _F /dt = 100 A/μs Measured at 1.1 x V _F T _j = 25°C			0.5	μs
V _{FP}	Peak forward voltage				35	V

To evaluate the conduction losses, in case of triangular current, use the following equation :

$$P = \frac{1.33 \times I_P \times \delta}{2} + \frac{0.09 \times I_P^2 \times \delta}{3}$$

δ : duty cycle

I_P : Peak current

for I_P = 3A and δ = 0.5, P = 1.13 W

THERMAL AND ELECTRICAL CHARACTERISTICS OF THE MTV32-600A (MODULATION diode)

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
Rth (j-a)	Junction to ambient (*)	25	°C/W

(*) on infinite heatsink with 10mm lead length

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _R *	Reverse leakage current	V _R = V _{RWM}				
			T _j = 25°C		10	μA
			T _j = 125°C		1	mA
V _F **	Forward voltage drop	I _F = 3 A				
			T _j = 25°C		2.0	V
			T _j = 125°C		1.6	

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

DYNAMIC ELECTRICAL CHARACTERISTICS

TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{rr}	Reverse recovery time	I _F = 0.5 A I _{rr} = 0.25 A	I _R = 1 A T _j = 25°C		55	ns

TURN ON SWITCHING

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
t _{FR}	Forward recovery time	I _F = 3 A di _F /dt = 100 A/μs Measured at 1.1 x V _F			0.5	μs
V _{FP}	Peak forward voltage	T _j = 25°C			20	V

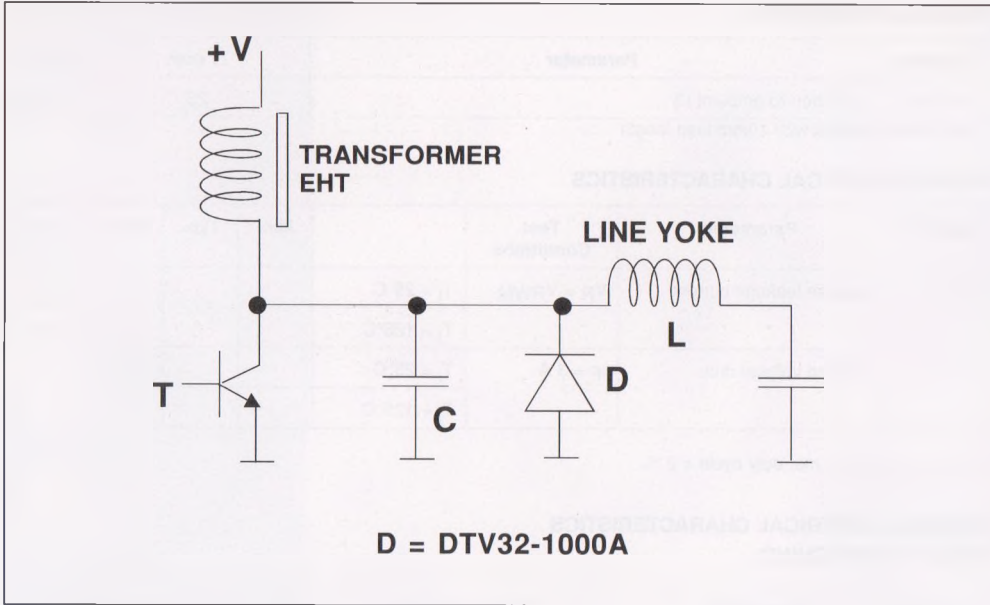
To evaluate the conduction losses, in case of triangular current, use the following equation :

$$P = \frac{1.33 \times I_P \times \delta}{2} + \frac{0.09 \times I_P^2 \times \delta}{3}$$

δ : duty cycle

I_P : Peak currentfor I_P = 3A and δ = 0.5, P = 1.13 W

BASIC HORIZONTAL DEFLECTION CIRCUIT



BASIC E-W DIODE MODULATOR CIRCUIT

