

(CRT HORIZONTAL DEFLECTION)
 HIGH VOLTAGE DAMPER & MODULATION DIODES

MAIN PRODUCTS CHARACTERISTICS

| | MTV32 | DTV32 |
|---------------------------|-------|-------|
| I_F peak | 3A | 3A |
| V_{RRM} | 600V | 1000V |
| t_{rr} | 50ns | 70ns |
| V_F | 1.6V | 1.6V |

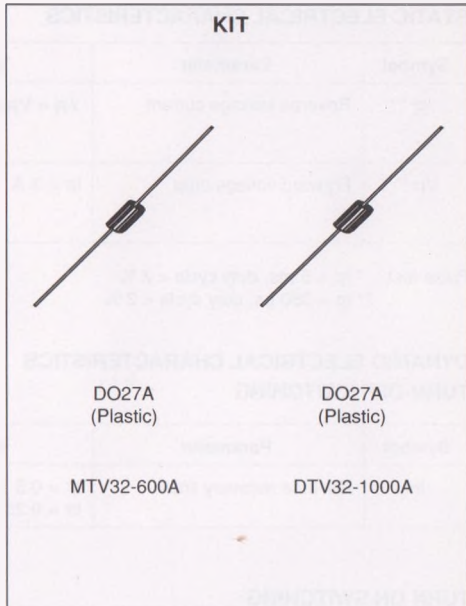
FEATURES

- 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 | t _p ≤ 10μs | 100 | 50 | A |
| I _{FSM} | Surge non repetitive forward current | t _p =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 | | | 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 | | | 0.5 | μs |
| V _{FP} | Peak forward voltage | T _j = 25°C | | | 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 T _j = 25°C | | | 0.5 | μs |
| V _{FP} | Peak forward voltage | | | | 20 | V |

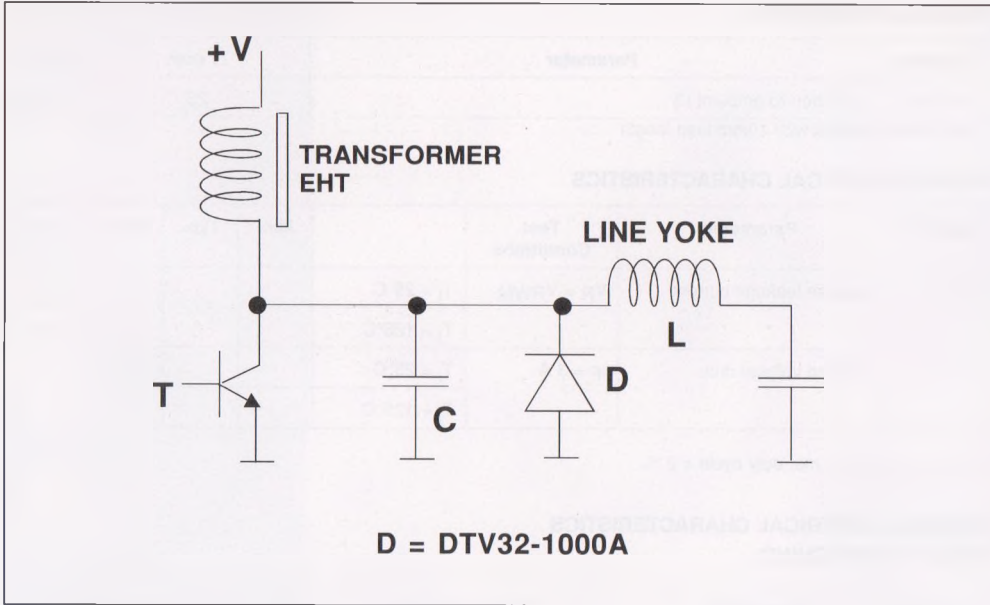
To evaluate the conduction losses, in case of triangular current, use the following equation :

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

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

