

DAMPER + MODULATION DIODE FOR VIDEO

PRELIMINARY DATASHEET

MAJOR PRODUCTS CHARACTERISTICS

	MODUL	DAMPER
$I_{F(AV)}$	5 A	6 A
V_{RRM}	600 V	1500 V
t_{rr}	80 ns	175 ns
V_F	1.2 V	1.3 V

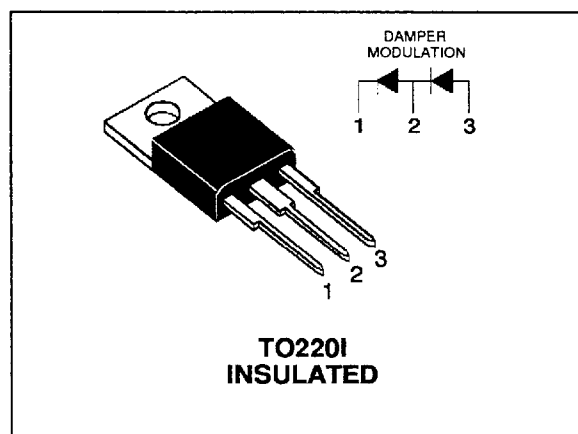
FEATURES AND BENEFITS

- FULL KIT IN ONE PACKAGE
- DMV32A AND DMV32B ARE SUITED FOR RESPECTIVELY 38kHz AND 56kHz DEFLECTION
- OUTSTANDING PERFORMANCE OF WELL PROVEN DTV32 AS DAMPER AND TURBOSWITCH™ "B" AS MODULATION
- LEAD BENDING OPTION AVAILABLE
- INSULATED PACKAGE (2500 V)

DESCRIPTION

High voltage semiconductor especially designed for horizontal deflection stage in standard and high resolution video display with E/W correction.

The T0220I isolated package includes both the DAMPER diode and the MODULATION diode. Assembled on automated line and UL recognized. Best insulating and dissipating characteristics, thanks to the internal ceramic insulation layer.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		VALUE		Unit
			MODUL	DAMPER	
V _{RRM}	Repetitive Peak Reverse Voltage		600	1500	V
V _{RWM}	Reverse Working Voltage		600	1350	
I _{F(AV)}	Forward Average Current	T _c = 120°C, δ= 0.5	5	6	A
I _{FSM}	Surge Non Repetitive Forward Current	10 ms half sine	75	100	
T _{stg}	Storage Temperature Range		- 40 to + 150		°C
T _j	Max Operating Junction Temperature		150		

**ELECTRICAL CHARACTERISTICS OF THE DAMPER DIODES IN "A" VERSION
DMV32A**

Symbol	Parameter	Test Conditions		Typ.	Max.	Unit
I_R *	Reverse Leakage Current	$V_R = V_{RWM}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	60	60 500	μA
V_F **	Forward Voltage Drop	$I_F = 6\text{ A}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	1	1.3 1.2	V
t_{rr}	Reverse Recovery Time	$I_F = 1\text{ A}$ $dI_F/dt = -50\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$		170	300	ns
		$I_F = 100\text{ mA}$ $I_R = 100\text{ mA}$			4	μs
t_{fr}	Forward Recovery Time	$I_F = 6\text{ A}$ $dI_F/dt = 80\text{ A}/\mu\text{s}$ Measured at $V_{FR} = 2\text{ V}$ $T_J = 100^\circ\text{C}$		0.5		
V_{FP}	Peak Forward Voltage			30		V

To evaluate the maximum conduction losses use the following equations :

$$P = 1.0 \times I_{F(AV)} + 0.025 \times I_F^2(RMS)$$

FOR ELECTRICAL CHARACTERISTICS CURVES, PLEASE REFER TO :
The DTV32(F)-1500A datasheet
(page 631 of the "SCHOTTKY and RECTIFIERS DIODES" databook 2nd issue)

**ELECTRICAL CHARACTERISTICS OF THE DAMPER DIODES IN "B" VERSION
DMV32B**

Symbol	Parameter	Test Conditions		Typ.	Max.	Unit
I_R *	Reverse Leakage Current	$V_R = V_{RWM}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	80	75 750	μA
V_F **	Forward Voltage Drop	$I_F = 6\text{ A}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	1.1	1.4 1.3	V
t_{rr}	Reverse Recovery Time	$I_F = 1\text{ A}$ $dI_F/dt = -50\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$		135	175	ns
		$I_F = 100\text{ mA}$ $I_R = 100\text{ mA}$			1.5	μs
t_{fr}	Forward Recovery Time	$I_F = 6\text{ A}$ $dI_F/dt = 80\text{ A}/\mu\text{s}$ Measured at $V_{FR} = 2\text{ V}$ $T_J = 100^\circ\text{C}$		0.6		
V_{FP}	Peak Forward Voltage			39		V

To evaluate the maximum conduction losses use the following equations :

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

Pulse test : * $t_p = 5\text{ ms}$, duty cycle < 2%
** $t_p = 380\text{ }\mu\text{s}$, duty cycle < 2%

FOR ELECTRICAL CHARACTERISTICS CURVES, PLEASE REFER TO :
The DTV32(F)-1500B datasheet
(page 637 of the "SCHOTTKY and RECTIFIERS DIODES" databook 2nd issue)

ELECTRICAL CHARACTERISTICS OF THE MODULATION DIODE
STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Typ.	Max.	Unit
I_R *	Reverse Leakage Current	$V_R = 480\text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	60	50 500	μA
V_F **	Forward Voltage Drop	$I_F = 5\text{ A}$	$T_J = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	1.2	1.3 1.2	V

Pulse test : * $t_p = 5\text{ ms}$, duty cycle $< 2\%$
 ** $t_p = 380\text{ }\mu\text{s}$, duty cycle $< 2\%$

DYNAMIC ELECTRICAL CHARACTERISTICS
TURN-OFF SWITCHING $T_J = 25^\circ\text{C}$

Symbol	Parameter	Test Conditions	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F = 1\text{ A}$ $dI_F/dt = -50\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$	95	ns
		$I_F = 100\text{ mA}$ $I_R = 100\text{ mA}$	350	

DYNAMIC ELECTRICAL CHARACTERISTICS
TURN-ON SWITCHING

Symbol	Parameter	Test Conditions	Max.	Unit
t_{fr}	Forward Recovery Time	$I_F = 5\text{ A}$ $dI_F/dt = 50\text{ A}/\mu\text{s}$ Measured at $1.1 \times V_F$ max.	0.5	μs
V_{FP}	Peak Forward Voltage	$T_J = 25^\circ\text{C}$	8	V

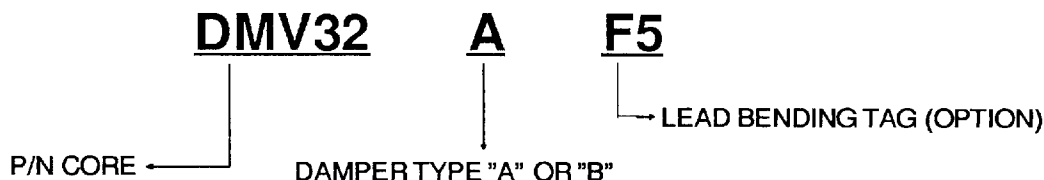
To evaluate the maximum conduction losses use the following equations :

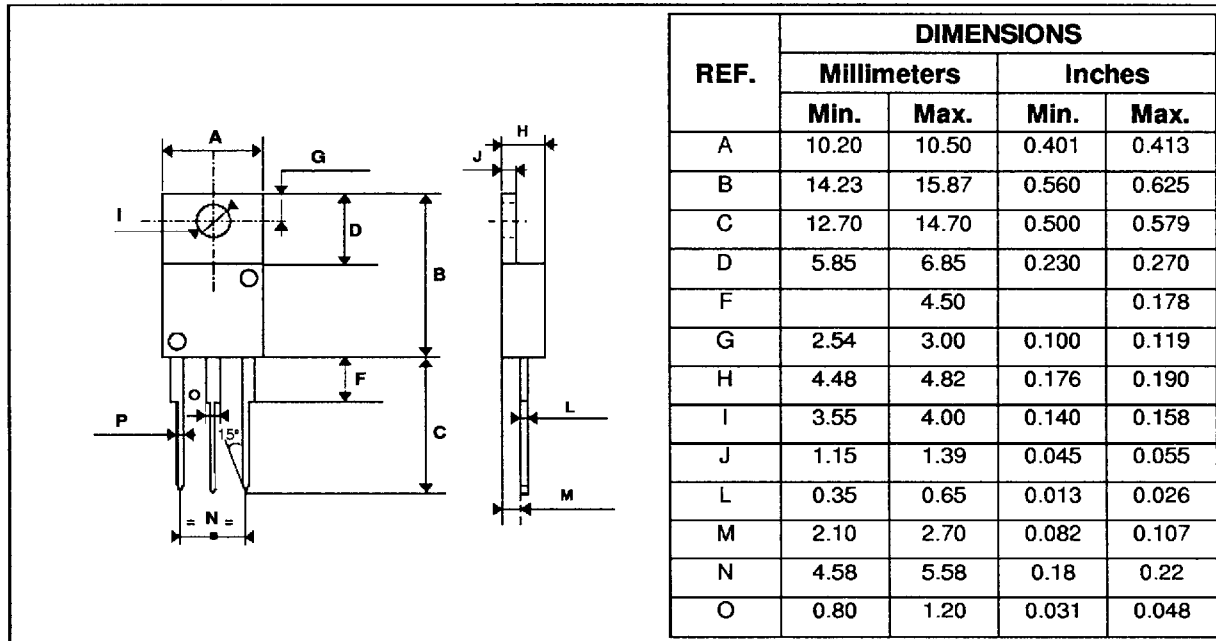
$$P = 1.05 \times I_{F(AV)} + 0.06 \times I_F^2(RMS)$$

FOR ELECTRICAL CHARACTERISTICS CURVES, PLEASE REFER TO :
 The STTB506D datasheet
 (page 257 of the "SCHOTTKY and RECTIFIERS DIODES" databook 2nd issue)

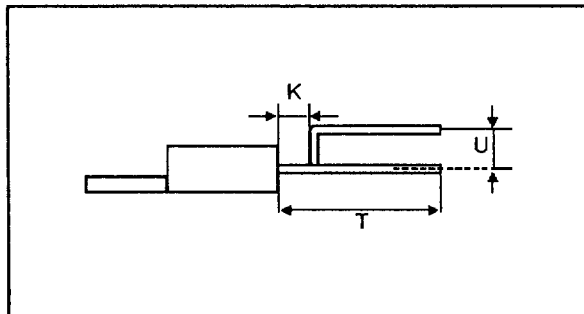
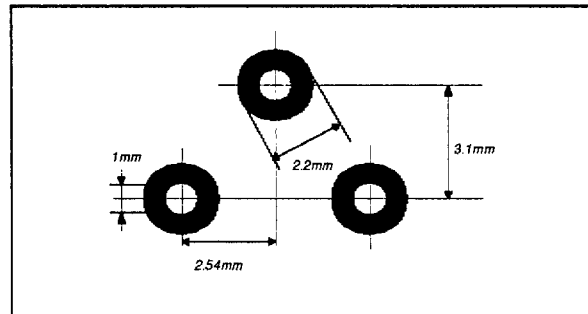
THERMAL DATA

Symbol	Parameter	Max.	Unit
$R_{th(j-c)}$	Damper junction to case thermal resistance	3.5	$^\circ\text{C}/\text{W}$
$R_{th(j-c)}$	Modulation junction to case thermal resistance	5	
$R_{th(c)}$	Coupling thermal resistance	0.2	
$R_{th(j-c)}$	Total as per full $I_{F(AV)}$ max. ratings	2.2	

ORDERING INFORMATION


PACKAGE MECHANICAL DATA
TO220I (Insulated)

BENDING OPTION "F5"

Recommended for high voltage layout clearance


PRINTED CIRCUIT LAYOUT FOR F5 VERSION


REF.	Millimeters	
	Min.	Max
K	1.65	2.41
U	2.92	3.30
T	8.96	11.00

Cooling method : C
 Marking : Type number
 Weight : 2.3 g
 Recommended torque value : 0.8 m.N.
 Maximum torque value : 1 m.N.
 Electrical isolation : 2500 V_{RMS}
 Capacitance : 7 pF

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