

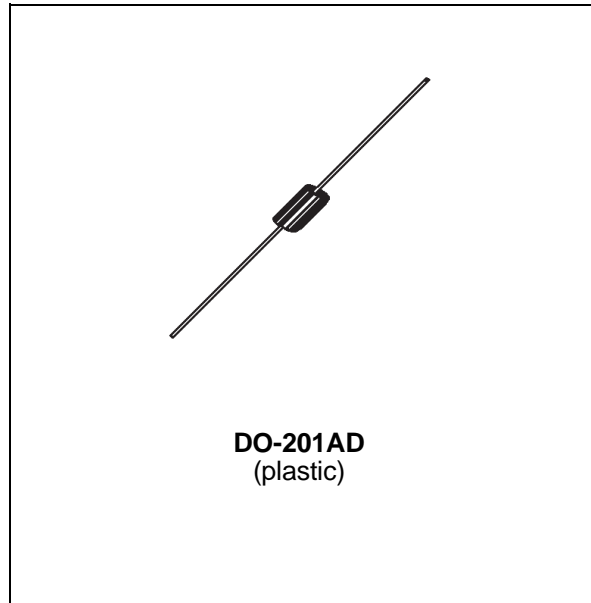
HIGH VOLTAGE ULTRA-FAST DIODE FOR VIDEO

MAJOR PRODUCT CHARACTERISTICS

I_{Fpeak}	4 A
V_{RRM}	600 V
t_{rr}	55 ns
V_F (max)	1.2 V

FEATURES AND BENEFITS

- TURBOSWITCH™ OUTSTANDING BENEFITS.
- HIGH REVERSE VOLTAGE : 600 V
- LOW POWER LOSSES INDUCING LOW TEMPERATURE AND HIGH RELIABILITY.
- OPTIMIZED TRADE-OFF BETWEEN t_{rr} AND SOFTNESS FOR VIDEO HORIZONTAL DEFLECTION.



DESCRIPTION

High voltage ultra-fast diode especially designed for modulation and flyback rectification in standard and high resolution displays for TV's and monitors.

The device is packaged in a DO-201AD axial envelope.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		VALUE	Unit
V _{RRM}	Repetitive peak reverse voltage		600	V
I _{F peak}	Forward peak current (1)	δ=0.5 Ta=115°C triangular	4	A
I _{FRM}	Repetitive peak forward current	t _p =5μs F=1kHz square	100	A
I _{FSM}	Surge non repetitive forward current	t _p = 10 ms sinusoidal	80	A
T _{stg}	Storage temperature range		- 40 to 150	°C
T _j	Maximum operating junction temperature		150	°C

(1) on infinite heatsink with 10mm lead length

MDV04-600

THERMAL RESISTANCES

Symbol	Parameter	Max.	Unit
R _{th(j-l)}	Junction to lead	20	°C/W
R _{th(j-a)}	Junction to ambient on printed circuit L lead = 10mm	75	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
I _R *	Reverse leakage current	V _R = 480V T _J = 25°C T _J = 125°C		50 0.75	µA mA
V _F **	Forward voltage drop	I _F = 4 A T _J = 25°C T _J = 125°C		1.28 1.20	V V

Pulse test : * t_p = 5 ms, δ < 2%
** t_p = 380 µs, δ < 2%

DYNAMIC ELECTRICAL CHARACTERISTICS TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t _{rr}	Reverse recovery time	I _F = 0.5A I _R = 1A I _{rr} = 0.25A	55	75	ns
		I _F = 100 mA I _R = 100 mA I _{rr} = 10mA	130		ns

DYNAMIC ELECTRICAL CHARACTERISTICS TURN-ON SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t _{fr}	Forward recovery time	I _F = 4 A dI _F /dt = 100 A/µs Measured at 1.1 x V _F max. T _J = 25°C		0.5	µs
V _{FP}	Peak forward voltage				15

To evaluate the maximum conduction losses use the following equation :

$$P = \frac{1.0 \times I_p}{2} \times \delta + \frac{0.050 \times I_p^2}{3} \times \delta$$

δ : duty cycle
I_p : Peak current

Ex : for I_p = 4 A and δ = 0.5, P = 1.2 Watts.

Fig. 1: Power dissipation versus peak forward current (triangular waveform, $\delta=0.5$).

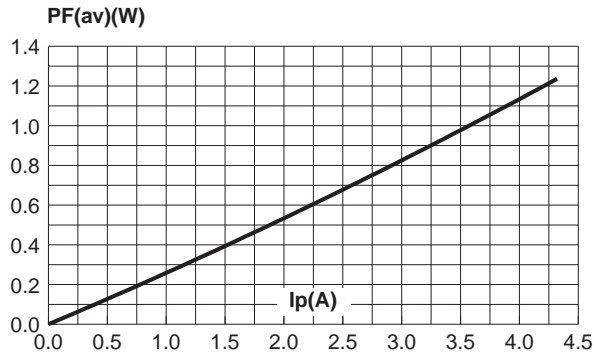


Fig. 2: Relative variation of thermal impedance junction to ambient versus pulse duration (epoxy printed circuit board, $e(\text{Cu})=35\mu\text{m}$), recommended pad layout).

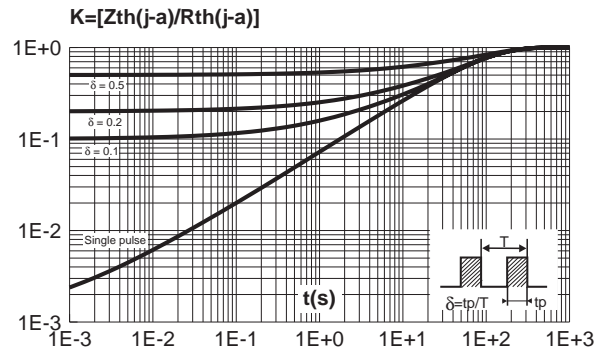


Fig. 3: Forward voltage drop versus forward current (maximum values).

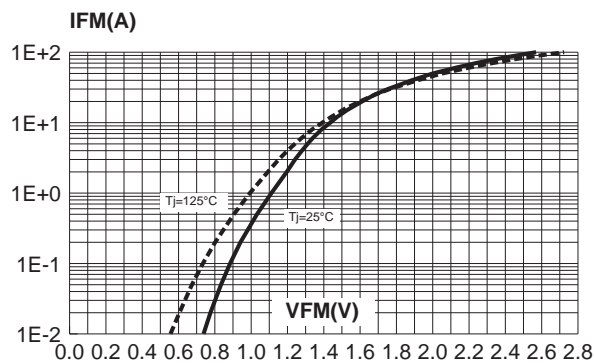


Fig. 4: Reverse recovery time versus dI_F/dt .

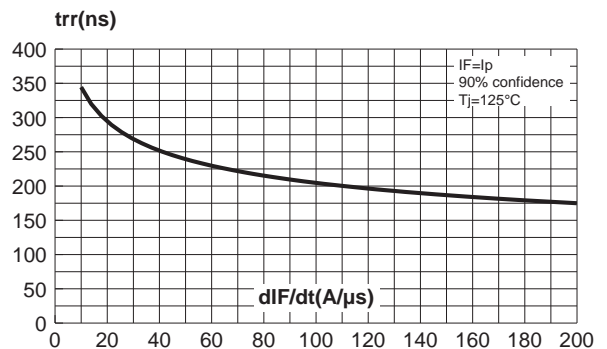


Fig. 5: Transient peak forward voltage versus dI_F/dt .

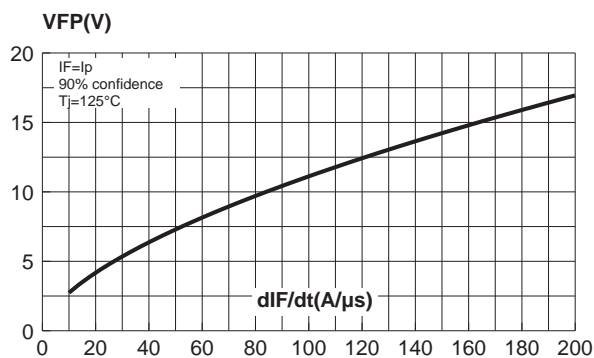
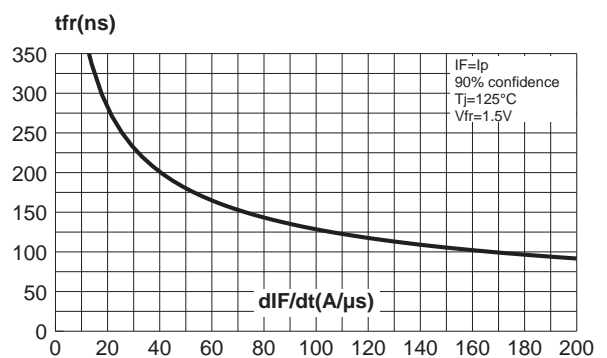
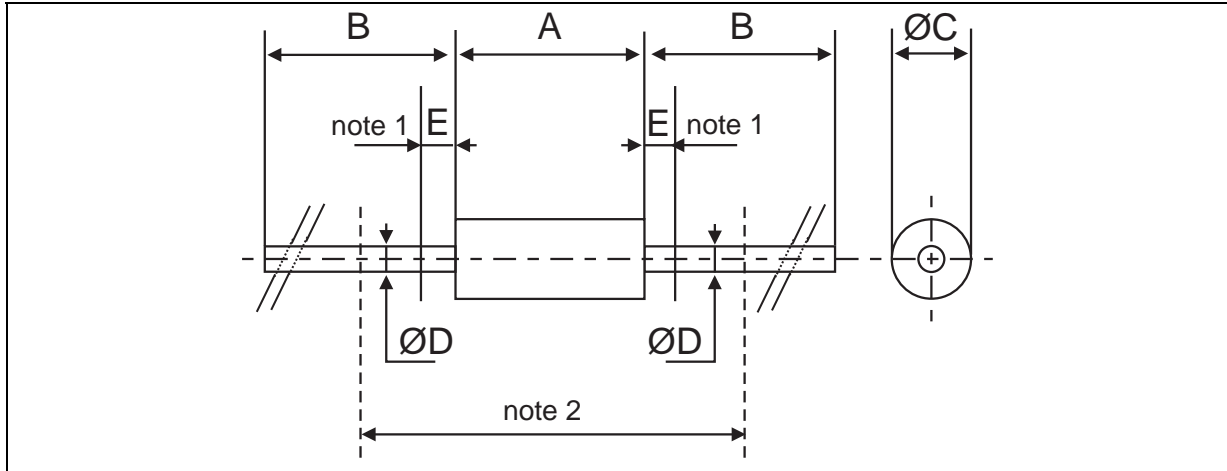


Fig. 6: Forward recovery time versus dI_F/dt .



MDV04-600

PACKAGE MECHANICAL DATA DO-201AD



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.50		0.374	1 - The lead diameter $\varnothing D$ is not controlled over zone E 2 - The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59" (15 mm)
B	25.40		1.000		
$\varnothing C$		5.30		0.209	
$\varnothing D$		1.30		0.051	
E		1.25		0.049	

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
MDV04-600	MDV04-600	DO-201AD	1.166g.	600	Ampopack
MDV04-600RL	MDV04-600	DO-201AD	1.166g.	1900	Tape & reel

- Epoxy meets UL94,V0
- Polarity : Cathode indicated by polarity band

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