

## HIGH VOLTAGE ULTRA-FAST DIODE FOR VIDEO

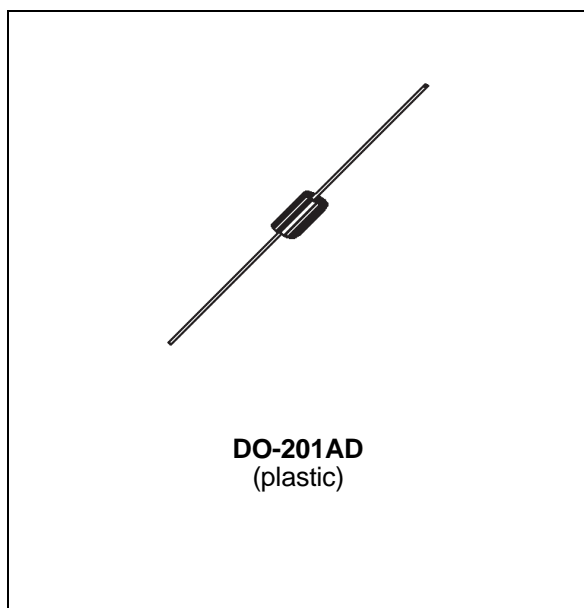
PRELIMINARY DATASHEET

### MAJOR PRODUCTS 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 COMPROMISE 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 MAXIMUM RATINGS

Symbol	Parameter		VALUE	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage		600	V
$V_{RWM}$	Reverse Working Voltage		600	V
$I_F$ peak	Forward Average Current (1)		4	A
	Ambient temperature (2)		115	°C
$I_{FRM}$	Repetitive peak forward current	$t_p = 5\mu s$ $f = 1kHz$	100	A
$I_{FSM}$	Surge Non Repetitive Forward Current	$t_p = 10 ms$ sine	150	A
$T_{stg}$	Storage Temperature Range		- 40 to 150	°C
$T_j$	Max Operating Junction Temperature		150	°C

(1) delta = 0.5 and triangular waveform

(2) on infinite heatsink with 10mm lead length

## THERMAL DATA

Symbol	Parameter	Max.	Unit
$R_{th(j-l)}$	Junction to lead on infinite heatsink	21	°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	$V_R = 0.8 V_{RWM}$ $T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$		50 0.75	$\mu\text{A}$ mA
$V_F$ **	Forward Voltage Drop	$I_F = 4 \text{ A}$ $T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$		1.28 1.20	V V

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

DYNAMIC ELECTRICAL CHARACTERISTICS  
TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
$t_{rr}$	Reverse Recovery Time	$I_F = 0.5 \text{ A}$ $I_R = 1 \text{ A}$ $I_{rr} = 0.25 \text{ A}$	55	75	ns
		$I_F = +100 \text{ mA} / -100 \text{ mA}$	130		ns

DYNAMIC ELECTRICAL CHARACTERISTICS  
TURN-ON SWITCHING

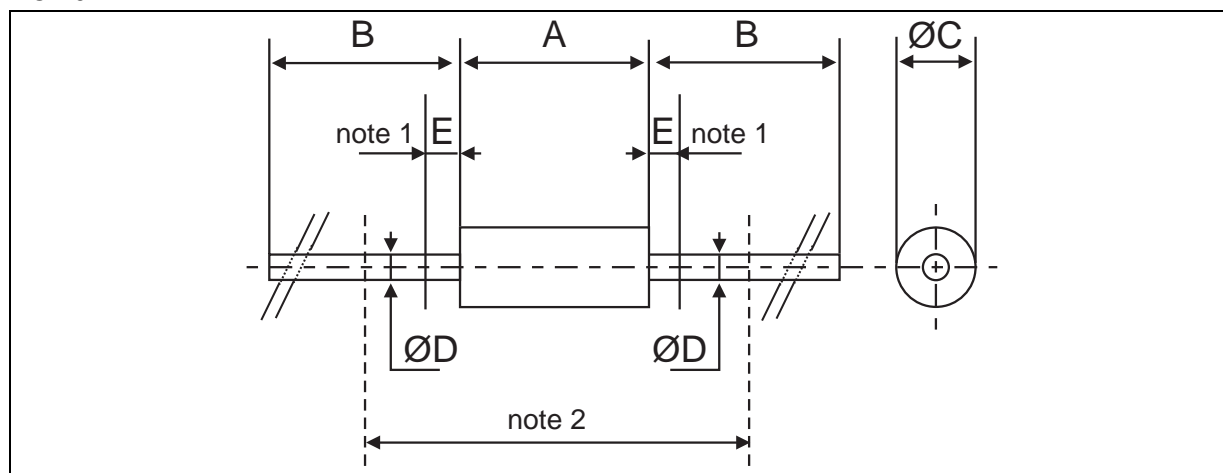
Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
$t_{fr}$	Forward Recovery Time	$I_F = 4 \text{ A}$ $dI_F/dt = 100 \text{ A}/\mu\text{s}$ Measured at $V_F$ max. $T_j = 25^\circ\text{C}$		0.5	$\mu\text{s}$
$V_{FP}$	Peak Forward Voltage			15	V

To evaluate the maximum conduction losses use the following equation :

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

$\delta$  : duty cycle  
 $I_p$  : Peak current

Ex : for  $I_p = 4 \text{ A}$  and  $\delta = 0.5$ ,  $P = 1.2 \text{ Watts}$ .

**PACKAGE MECHANICAL DATA**  
 DO-201AD


REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.50		0.374	1 - The lead diameter Ø 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		
Ø C		5.30		0.209	
Ø D		1.30		0.051	
E		1.25		0.049	

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