

HIGH VOLTAGE ULTRA-FAST DIODE FOR VIDEO

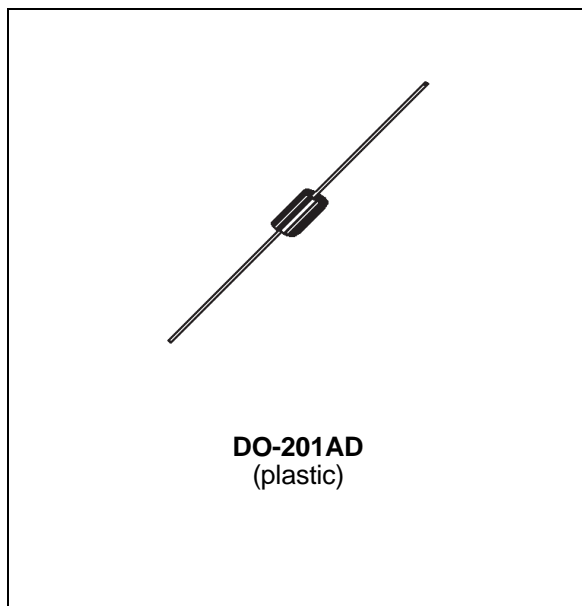
PRELIMINARY DATASHEET

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

MDV04-600

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	μA 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

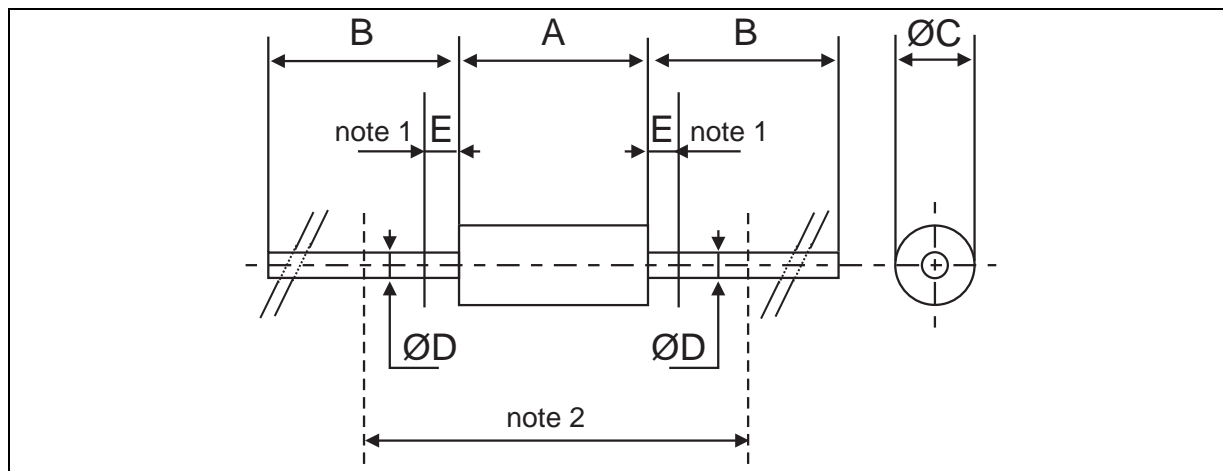
Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t_{fr}	Forward Recovery Time	$I_F = 4 \text{ A}$ $di_F/dt = 100 \text{ A}/\mu\text{s}$ Measured at V_F max. $T_j = 25^\circ\text{C}$		0.5	μs
V_{FP}	Peak Forward Voltage				15

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 $I_p = 4 \text{ A}$ 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 $\varnothing D$ 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	

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco -
 The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.