SGS-THOMSON MICROELECTRONICS

MDV04-600
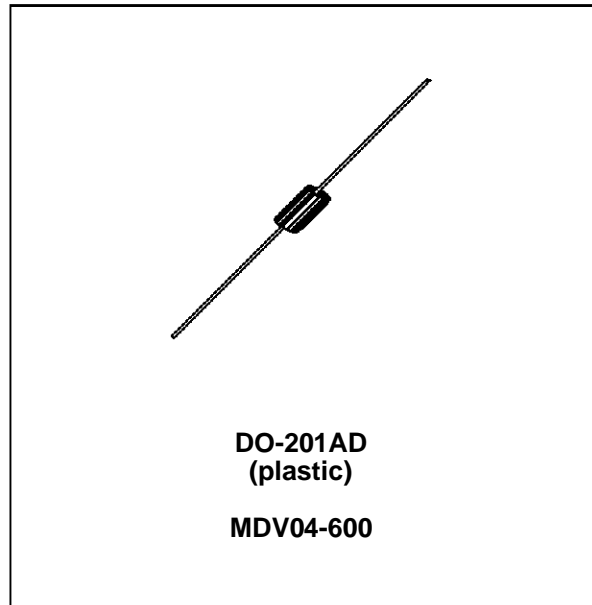
HIGH VOLTAGE ULTRA-FAST DIODE FOR VIDEO

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.

DO-201AD (plastic)

MDV04-600

DESCRIPTION

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

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

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	tp = 5µs f = 1kHz	100	A
I_{FSM}	Surge Non Repetitive Forward Current	tp = 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}	Tj = 25°C Tj = 125°C		50 0.75	µA mA
V_F **	Forward Voltage Drop	$I_F = 4$ A	Tj = 25°C Tj = 125°C		1.28 1.20	V V

Pulse test :   * tp = 5 ms, duty cycle < 2%
**tp = 380 µs, duty cycle < 2%

DYNAMIC ELECTRICAL CHARACTERISTICS
TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F = 0.5A$ $I_R = 1A$ Irr = 0.25A	55	75	ns
		$I_F = +$ 100 mA / - 100 mA	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 V_F max. Tj = 25°C		0.5	µs
V_{FP}	Peak Forward Voltage			15	V

To evaluate the maximum conduction losses use the following equation :

$$P = \frac{1.0 \; x \; I_p}{2} x \, \delta + \frac{0.050 \; x \; I_p{}^{\wedge} \, 2}{3} \; x \; \delta$$

δ : duty cycle
I_p : Peak current

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

SGS-THOMSON
MICROELECTRONICS

PACKAGE MECHANICAL DATA
DO-201AD
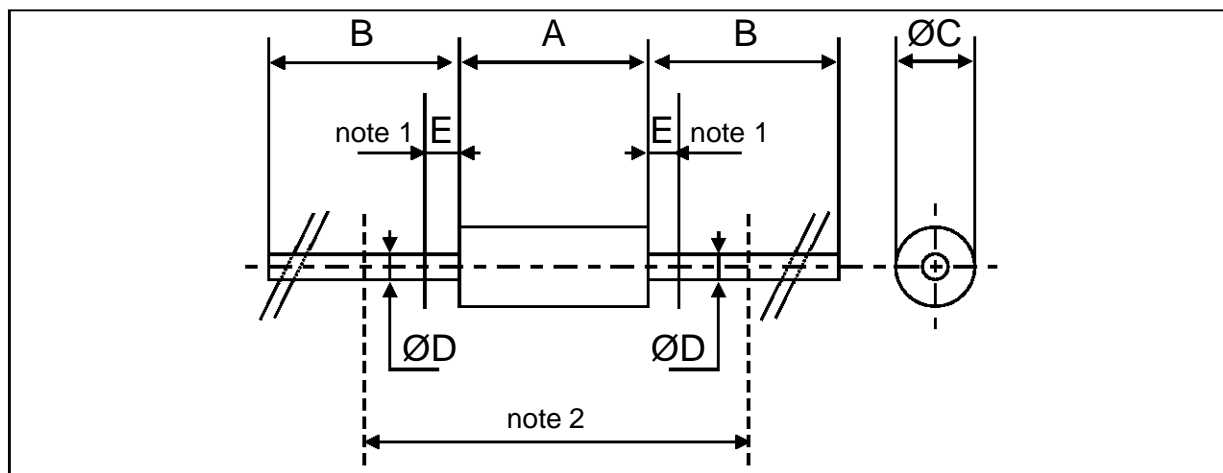
REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.80		0.385	1 - The lead diameter ∅ D is not controlled over zone E
B	26		1.024		
∅ C		5.10		0.200	2 - The minimum axial lengh within which the device may be placed with its leads bent at right angles is 0.59"(15 mm)
∅ D		1.28		0.050	
E		1.25		0.049	

SGS-THOMSON MICROELECTRONICS