

ULTRA-FAST RECOVERY DIODE

MAJOR PRODUCTS CHARACTERISTICS

PRELIMINARY DATASHEET

$I_{F(AV)}$	3 A
V_{RRM}	400 V
t_{rr}	25 ns
V_F (max)	1.4 V

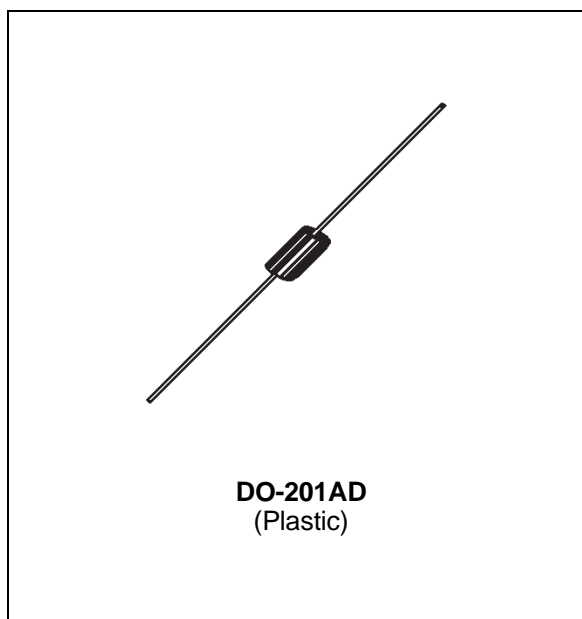
FEATURES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

DESCRIPTION

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		400	V
V_{RSM}	Non repetitive peak reverse voltage		440	V
I_{FRM}	Repetive peak forward current	$t_p \leq 10\mu s$	60	A
$I_{F(AV)}$	Average forward current*	$T_a = 65^\circ C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non repetitive forward current	$t_p = 10ms$ Sinusoidal	60	A
P	Power dissipation *	$T_a = 65^\circ C$	4.2	W
T_{stg} T_j	Storage and junction temperature range		- 40 to + 150 - 40 to + 150	$^\circ C$

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to lead	20	$^\circ C/W$
$R_{th(j-a)}$	Junction to ambient on printed circuit L lead = 10mm	75	$^\circ C/W$

* On infinite heatsink with 10mm lead length.

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Typ.	Max.	Unit
I_R^*	Reverse Leakage Current	$V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$ $T_j = 100^\circ\text{C}$		20 0.5	μA mA
V_F^{**}	Forward Voltage Drop	$I_F = 3\text{ A}$	$T_j = 25^\circ\text{C}$ $T_j = 100^\circ\text{C}$		1.5 1.4	V V

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

DYNAMIC ELECTRICAL CHARACTERISTICS

TURN-OFF SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=1\text{A}$ $di_F/dt = -15\text{A}/\mu\text{s}$ $V_R=30\text{V}$		55	ns
		$I_F = 0.5\text{A}$ $I_R = 1\text{A}$ $I_{rr} = 0.25\text{A}$		25	ns

DYNAMIC ELECTRICAL CHARACTERISTICS

TURN-ON SWITCHING

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t_{fr}	Forward Recovery Time	$I_F = 3\text{ A}$ $di_F/dt = 60\text{ A}/\mu\text{s}$ Measured at 1.1 V_F max. $T_j = 25^\circ\text{C}$		250	ns
V_{FP}	Peak Forward Voltage			13	V

To evaluate the maximum conduction losses use the following equation :

$$P = \frac{1.10 \times I_p}{2} \times \delta + \frac{0.050 \times I_p^2}{3} \times \delta$$

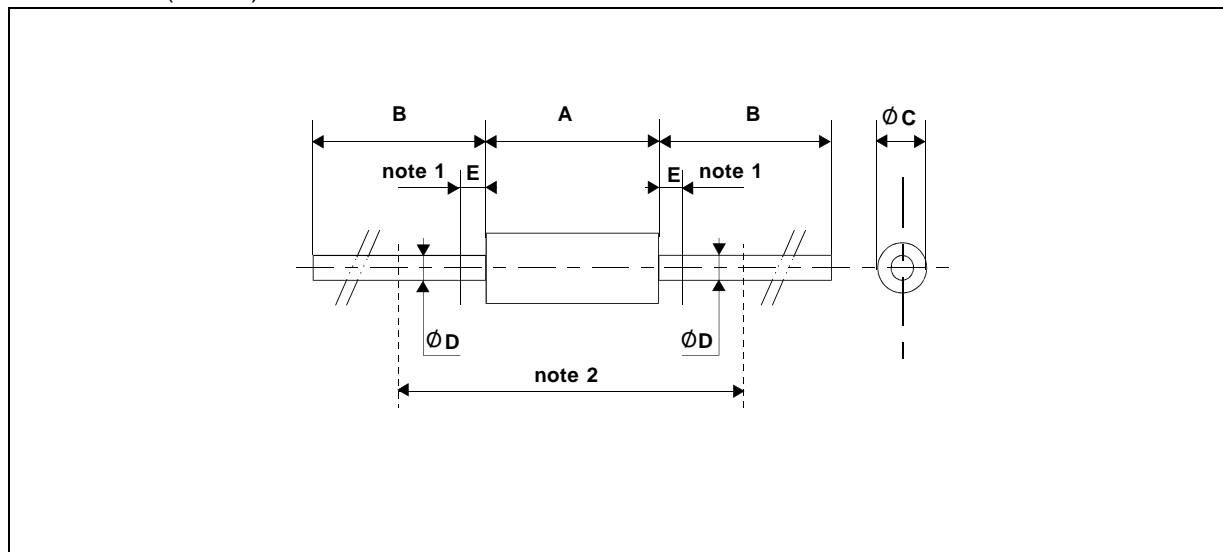
δ : duty cycle

I_p : Peak current

Ex : for $I_p = 3\text{ A}$ and $\delta = 0.5$, $P = 0.9\text{ Watts}$.

PACKAGE MECHANICAL DATA

DO-201AD (Plastic)



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	

Weight : 1 g

Marking : Type number - Date code

White band indicated cathode

cooling methode : by convection (method A)

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