

ULTRA-FAST RECOVERY DIODE

MAJOR PRODUCTS CHARACTERISTICS

PRELIMINARY DATASHEET

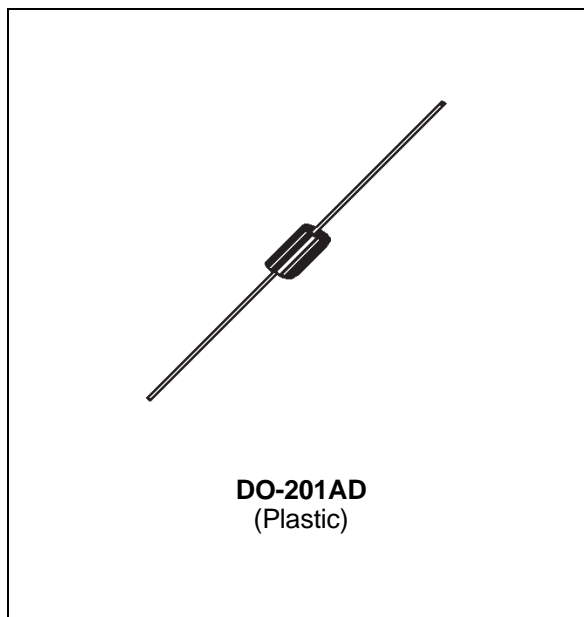
$I_{F(AV)}$	3 A
V_{RRM}	400 V
t_{rr}	25 ns
$V_F (max)$	1.4 V

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

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

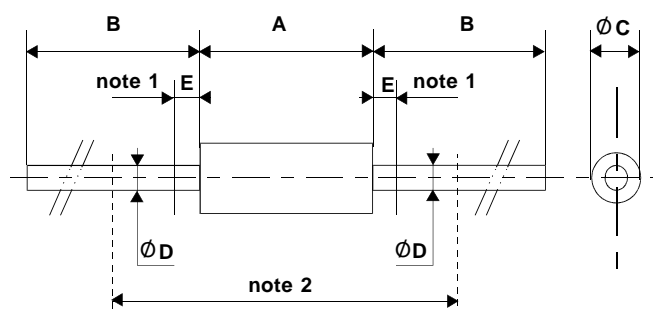
To evaluate the maximum conduction losses use the following equation :

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

 δ : duty cycle I_p : Peak currentEx : 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 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	

Weight : 1 g

Marking : Type number - Date code

White band indicated cathode

cooling methode : by convection (method A)

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.

© 1996 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.