SGS-THOMSON MICROELECTRONICS

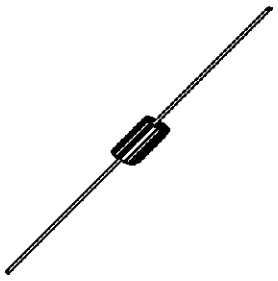
STTB406

HIGH VOLTAGE ULTRA-FAST DIODE

PRELIMINARY DATASHEET

MAJOR PRODUCTS CHARACTERISTICS

I_{Fpeak}	**4 A**
V_{RRM}	**600 V**
t_{rr}	**55 ns**
V_F **(max)**	**1.2 V**



DO-201AD
(plastic)

STTB406

FEATURES AND BENEFITS

- TURBOSWITCH ™ OUTSTANDING BENEFITS.
- HIGH REVERSE VOLTAGE : 600 V
- LOW POWER LOSSES INDUCING LOW TEMPERATURE AND HIGH RELIABILITY.

DESCRIPTION

High voltage ultra-fast diode suitable as a booster diode in PCF circuity in discontinuous mode in electronic ballast for lighting, TV and small equipment SMPS.

The device is packaged in a DO-201AD axial plastic 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)		65	°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		135	°C

(1) duty cycle = 0.5 and square waveform
(2) on infinite heatsink

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		1.3 1.2	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

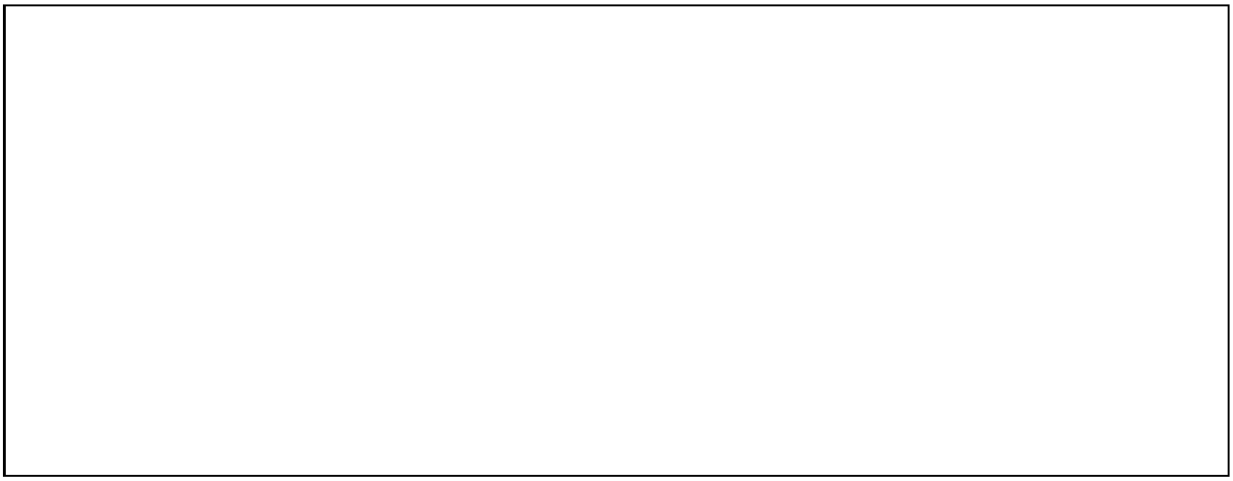
Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
t_{fr}	Forward Recovery Time	I_F = 4 A dI_F/dt = 100 A/µs Measured at V_F max. Tj = 25°C		0.5	µs
V_{FP}	Peak Forward Voltage			15	V

To evaluate the conduction losses, in cse of square waveform, use the following equation :

$P = 1.0 \times I_{F(av)} + 0.050 \times I_{F(RMS)}$ ^2

Ex : for I_p = 4 A and δ = 0.5, $I_{F(av)}$ = 2 A and P = 2.5 Watts.

PACKAGE MECHANICAL DATA
DO-201AD



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.50		0.374	1 - The lead diameter ∅ D is not controlled over zone E 2 - The minimum axial lengh within which the device may be placed with its leads bent at right angles is 0.59”(15 mm)
B	25.40		1.000		
∅ C		5.30		0.209	
∅ D		1.30		0.051	
E		1.25		0.049	

Weight : 1 g
Marking : Type number
White band indicates cathode
cooling method : by convertion (method A)
Date code