

HIGH FREQUENCY SECONDARY RECTIFIERS

PRELIMINARY DATASHEET

MAJOR PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	2x40 A
V_{RRM}	300 V
$V_F(max)$	1 V
$t_{rr}(max)$	60 ns

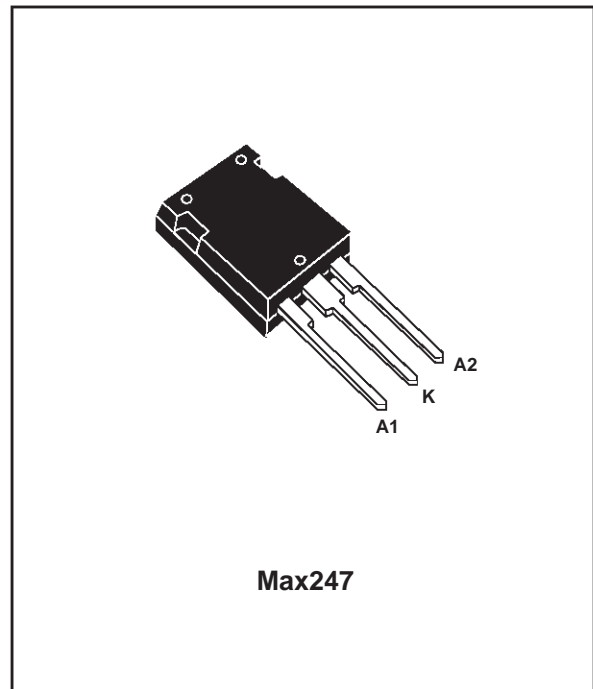
FEATURES AND BENEFITS

- COMBINES HIGHEST RECOVERY AND VOLTAGE PERFORMANCE.
- ULTRA-FAST, SOFT AND NOISE-FREE RECOVERY FOR LOW SIDE EFFECTS.
- HIGH OPERATING TEMPERATURE THANKS TO LOW LEAKAGE CURRENT.

DESCRIPTION

Dual rectifiers suited for Switch Mode Power Supply and high frequency DC to DC converters.

Packaged in Max247, this device is intended for use in low voltage, high frequency inverters, free wheeling operation, welding equipments and telecom power supplies.


ABSOLUTE RATINGS (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			300	V
$I_{F(RMS)}$	RMS forward current			50	A
$I_{F(AV)}$	Average forward current	$T_c = 105^\circ\text{C}$ $\delta = 0.5$	Per diode Per device	40 80	A
I_{FSM}	Surge non repetitive forward current		$t_p = 10\text{ ms}$ sinusoidal	400	A
I_{RSM}	Non repetitive avalanche current		$t_p = 100\ \mu\text{s}$ square	4	A
T_{stg}	Storage temperature range			-55 +150	$^\circ\text{C}$
T_j	Maximum operating junction temperature			+ 150	$^\circ\text{C}$

STTH8003CY

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case thermal resistance	Per diode	0.8	°C/W
		Total	0.5	
$R_{th(c)}$		Coupling	0.2	°C/W

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$V_R = 300\text{ V}$	$T_j = 25^\circ\text{C}$			80	μA
			$T_j = 125^\circ\text{C}$		80	800	
V_F^{**}	Forward voltage drop	$I_F = 40\text{ A}$	$T_j = 25^\circ\text{C}$			1.25	V
			$T_j = 125^\circ\text{C}$		0.85	1	

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

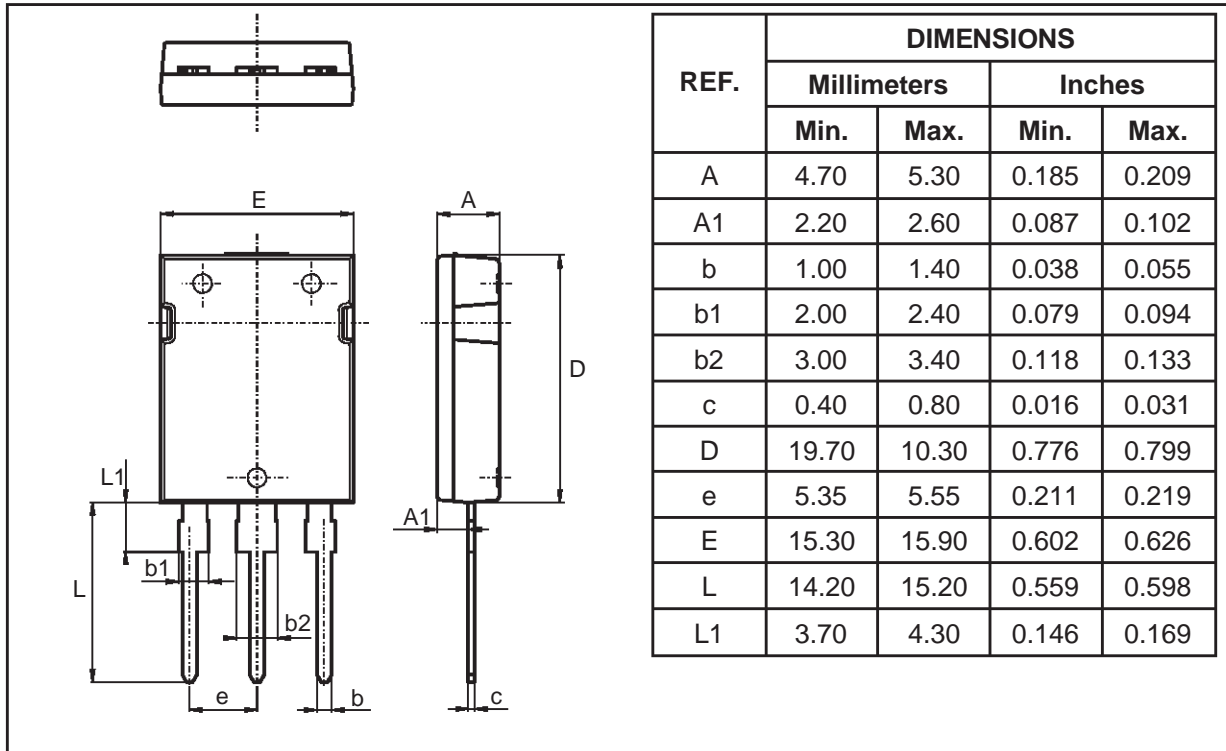
** $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$

To evaluate the maximum conduction losses use the following equation :

$$P = 0.75 \times I_{F(AV)} + 0.0062 I_{F(RMS)}^2$$

DYNAMIC ELECTRICAL CHARACTERISTICS

Symbol	Tests Conditions			Min.	Typ.	Max.	Unit
trr	$I_F = 0.5\text{ A}$	$I_{rr} = 0.25\text{ A}$	$I_R = 1\text{ A}$	$T_j = 25^\circ\text{C}$		50	ns
	$I_F = 1\text{ A}$	$di_F/dt = -50\text{ A}/\mu\text{s}$	$V_R = 30\text{ V}$			60	
I_{RM}	$V_{CC} = 200\text{ V}$ $I_F = 40\text{ A}$ $di_F/dt = -200\text{ A}/\mu\text{s}$			$T_j = 125^\circ\text{C}$		13	A
Sfactor						0.3	-
tfr	$I_F = 40\text{ A}$ $di_F/dt = 200\text{ A}/\mu\text{s}$, $V_{FR} = 1.1 \times V_F \text{ max}$			$T_j = 25^\circ\text{C}$		450	ns
V_{FP}							5

PACKAGE MECHANICAL DATA
 Max247


Ordering code	Marking	Package	Weight	Base qty	Delivery mode
STTH8003CY	STTH8003CY	Max247	4.4 g.	30	Tube

- Cooling method: C
- Epoxy meets UL94,V0

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