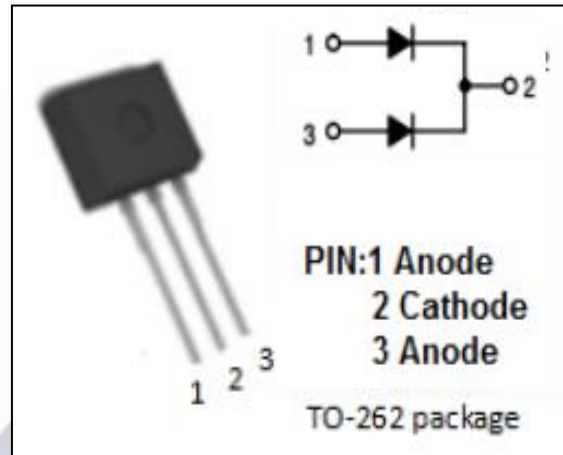


**Ultra fast Rectifier**
**STTH2003CR**
**FEATURES**

- With TO-262(I2PAK) packaging
- Low leakage current, low power loss, high efficiency
- High frequency operation
- High current capability
- Low stored charge majority carrier conduction
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Switching power supply
- High frequency inverters
- Freewheeling diodes
- Reverse battery protection
- Polarity protection applications


**ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{RRM}$ $V_{RWM}$ $V_R$	Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	300	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_c=92^{\circ}\text{C}$	20	A
$I_{FSM}$	Nonrepetitive Peak Surge Current (Surge applied at rated load conditions half-wave, single phase, 60Hz)	110	A
$T_J$	Junction Temperature	-65~175	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range	-65~175	$^{\circ}\text{C}$

Ultra fast Rectifier

STTH2003CR

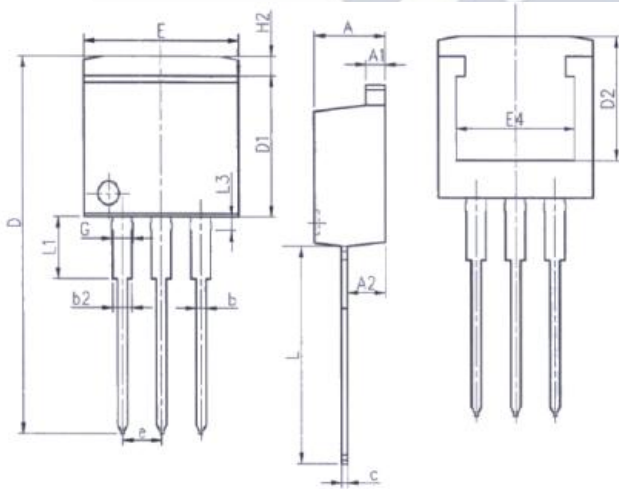
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th,j-c}$	Thermal Resistance, Junction to Case	2.5	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}C$ ) (Pulse Test: Pulse Width=300  $\mu$ s, Duty Cycle  $\leq$  2%)

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
$V_F^*$	Maximum Instantaneous Forward Voltage	$I_F=10A; T_c=25^{\circ}C$ $I_F=10A; T_c=125^{\circ}C$	1.25 1.0	V
$I_R^*$	Maximum Instantaneous Reverse Current	$V_R=V_{RWM}; T_c=25^{\circ}C$ $V_R=V_{RWM}; T_c=125^{\circ}C$	20 300	$\mu$ A
$t_{rr}$	Maximum Reverse Recovery Time	$I_F=1A; V_R=30V; -di_F/dt=-50A/\mu$ s	35	ns

DIMENSIONAL DRAWING



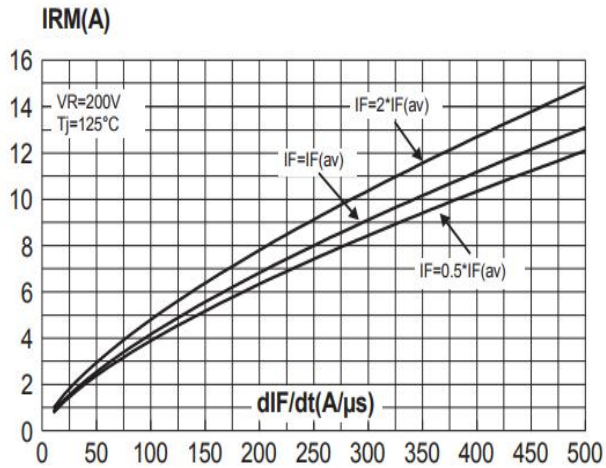
Unit: mm		
Symbol	Min.	Max.
A	4.37	4.77
A1	1.22	1.42
A2	2.47	2.87
b	0.70	0.97
b2	1.17	1.42
c	0.28	0.53
D	23.20	24.02
D1	8.38	8.90
D2	6.00	-

Unit: mm		
Symbol	Min.	Max.
E	9.90	10.39
E4	7.30	-
e	2.54BSC	
G	1.25	1.50
H2	-	1.31
L	13.34	14.10
L1	3.30	4.06
L3	0.95	1.15

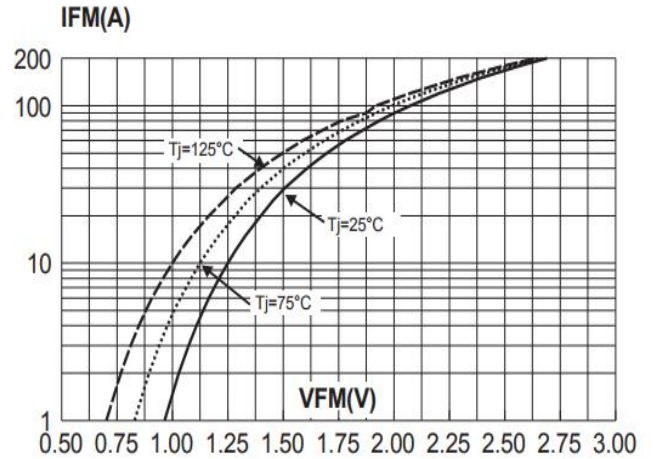
Ultra fast Rectifier

STTH2003CR

**Fig. 1:** Peak reverse recovery current versus  $di_F/dt$  (90% confidence, per diode).



**Fig. 2:** Forward voltage drop versus forward current (maximum values, per diode).



**Fig. 3:** Reverse recovery time versus  $di_F/dt$  (90% confidence, per diode).

