

Ultra fast Rectifier

STTH1002CFP

FEATURES

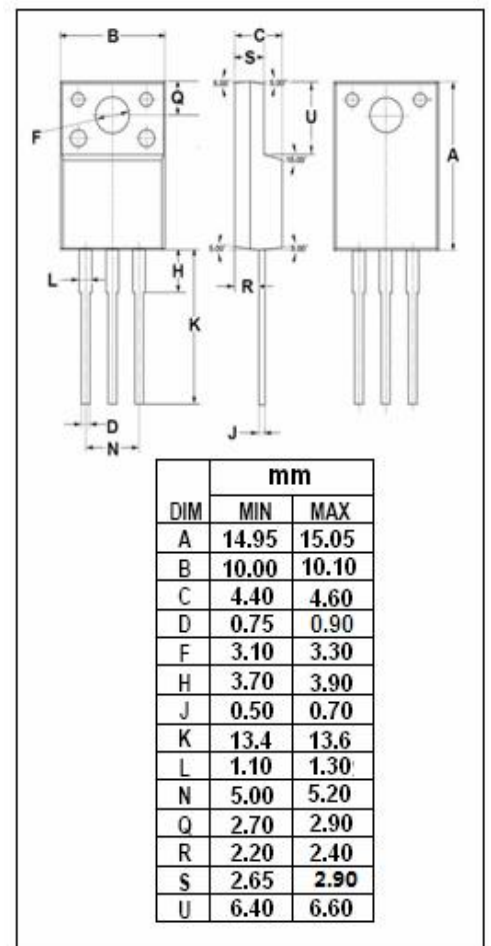
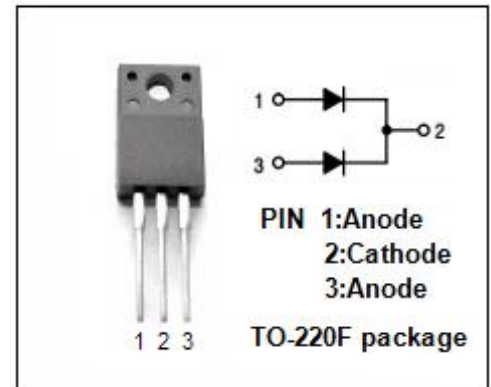
- With TO-220F packaging
- High junction temperature capability
- Low forward voltage, high current capability
- High current capability
- Low power loss, high efficiency
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Switching power supply
- Free-wheeling diodes
- Reverse battery protection
- Center tap configuration

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{RRM} V_{RMS} V_R	Peak Repetitive Reverse Voltage RMS Voltage DC Blocking Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_c=120^\circ\text{C}$	10	A
I_{FSM}	Nonrepetitive Peak Surge Current (10ms single half sine-wave superimposed on rated load conditions)	50	A
T_J	Junction Temperature	-65~175	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~175	$^\circ\text{C}$



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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	6.5	°C/W

ELECTRICAL CHARACTERISTICS (Pulse Test: Pulse Width=300 μ s, Duty Cycle $\leq$ 1%)

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_F	Maximum Instantaneous Forward Voltage	$I_F=5A; T_J=25^{\circ}C$	1.1	V
		$I_F=5A; T_J=150^{\circ}C$	0.89	
		$I_F=10A; T_J=25^{\circ}C$	1.25	
		$I_F=10A; T_J=150^{\circ}C$	1.05	
I_R	Maximum Instantaneous Reverse Current	$V_R = \text{rated } V_{RRM}; T_J=25^{\circ}C$ $V_R = \text{rated } V_{RRM}; T_J=125^{\circ}C$	5 40	μA
t_{rr}	Maximum Reverse Recovery Time	$I_F=1A; V_R=30V; dI_F/dt=100A/\mu s$	50	ns

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