

Ultrafast Rectifier

DSEI12-06A

FEATURES

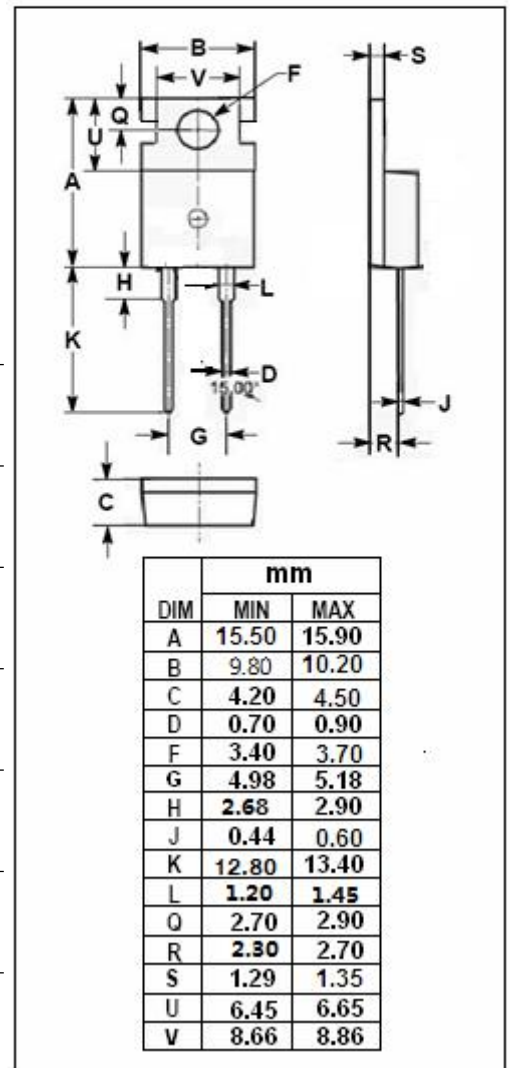
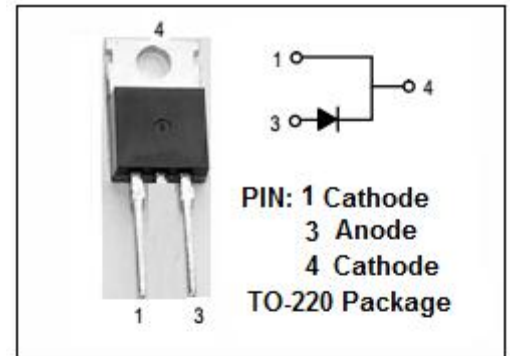
- Ultrafast recovery time
- Popular TO-220 package
- Low forward drop
- Avalanche energy rated
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Free wheeling diode in converters and motor control circuits

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	600	V
$I_{F(AV)}$	Average Rectified Forward Current	14	A
I_{FRM}	Peak Rectified forward current	150	A
I_{FSM}	Nonrepetitive Peak Surge Current (Surge applied at rated load conditions half-wave, single phase, 60Hz)	100	A
T_J	Junction Temperature	-40~150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-40~150	$^{\circ}\text{C}$



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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	2.0	°C/W

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

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_F^*	Maximum Instantaneous Forward Voltage	$I_F = 14\text{A}; T_j = 25^{\circ}\text{C}$ $I_F = 14\text{A}; T_j = 150^{\circ}\text{C}$	1.7 1.5	V
I_R^*	Maximum Instantaneous Reverse Current	$V_R = 0.8V_{RRM}; T_j = 150^{\circ}\text{C}$ $V_R = 0.8V_{RRM}; T_j = 25^{\circ}\text{C}$	3000 25	μ A
t_{rr}	Maximum Reverse Recovery Time	$I_F = 1\text{A}; di/dt = 50\text{A}/\mu\text{s}$	50	ns

*: Pulse test, Pulse width=300 μ s, duty cycle $\leq 2\%$

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