

Ultra fast Rectifier

DSEI20-12A

FEATURES

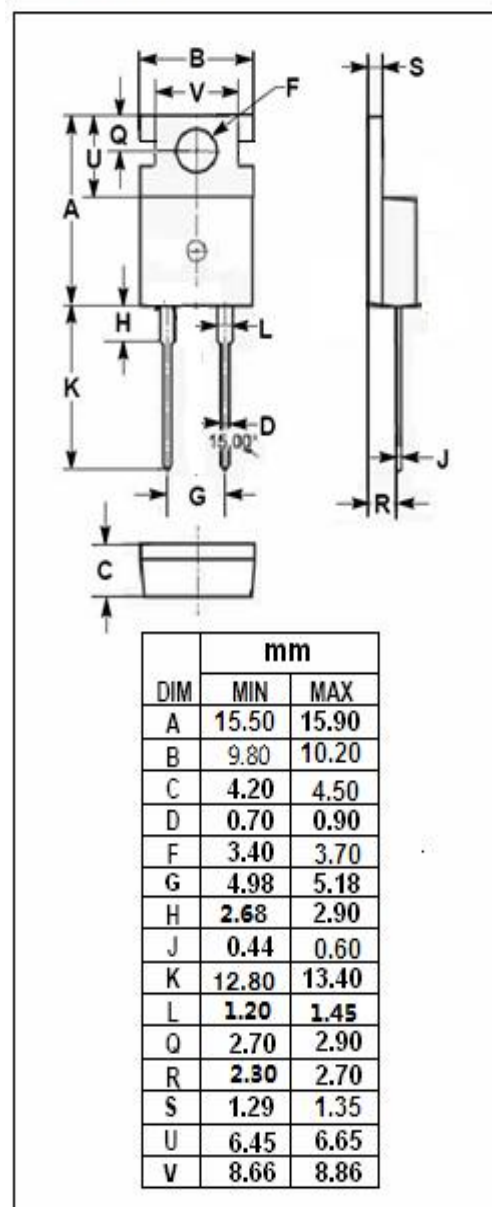
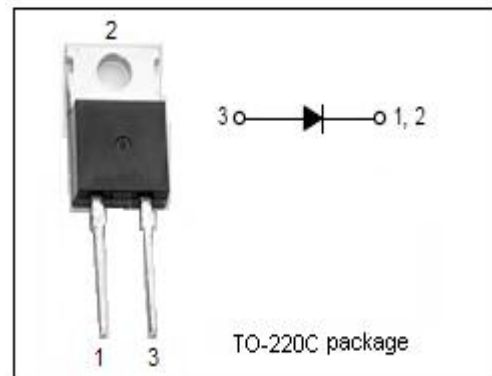
- With TO-220 packaging
- Metal silicon junction, majority carrier conduction
- Low leakage current
- Low power loss, high efficiency
- High current capability and low forward voltage drop
- Guardring for overvoltage protection
- High surge capability
- Minimum Lot-to-Lot variations for robust device 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_{RMS} V_R	Peak Repetitive Reverse Voltage RMS Voltage DC Blocking Voltage	1200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_c=125^{\circ}\text{C}$	17	A
I_{FRM}	Repetitive Peak Surge Current (Square Wave, 20kHz)	70	A
I_{FSM}	Nonrepetitive Peak Surge Current 8.3 ms single half sine-wave superimposed on rated load conditions; One shot	140	A
P_D	Maximum Power Dissipation	78	W
T_j	Junction Temperature	-55~175	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-55~175	$^{\circ}\text{C}$



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

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_F	Maximum Instantaneous Forward Voltage	$I_F = 12A ; T_c = 25^\circ C$ $I_F = 12A ; T_c = 125^\circ C$	2.15 1.87	V
I_R	Maximum Instantaneous Reverse Current	$V_R = \text{rated } V_{RRM}$	0.75	mA
t_{rr}	Maximum Reverse Recovery Time	$I_F = 1A ; dI_F/dt = 100A/\mu s ; V_R = 30V$	60	ns

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