

N-Channel Power MOSFET

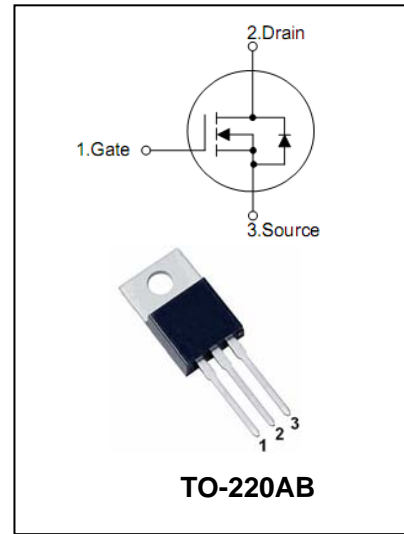
BL15N30

FEATURES

- $R_{DS(on)} = 240\text{ m}\Omega$ (Typ.) @ $V_{GS} = 10\text{ V}$, $I_D = 7.5\text{ A}$
- Low Gate Charge (Typ. 28 nC)
- Low C_{rss} (Typ. 17 pF)
- 100% Avalanche Tested
- Improved dv/dt Capability
- RoHS Compliant

APPLICATIONS

- Lighting
- Uninterruptible Power Supply



MOSFET Maximum Ratings $T_C = 25^\circ\text{C}$ unless otherwise noted*

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	300	V
V_{GS}	Gate -Source Voltage	± 30	V
I_D	Drain Current Continuous at $T_C=25^\circ\text{C}$ Continuous at $T_C=100^\circ\text{C}$	15 9	A
I_{DM}	Drain Current(pulsed)Note1	60	A
E_{AS}	Single Pulsed Avalanche Energy (Note 2)	731	mJ
E_{AR}	Repetitive Avalanche Energy (Note 1)	17	mJ
I_{AR}	Avalanche Current (Note 1)	15	A
dv/dt	Peak Diode Recovery dv/dt (Note 3)	15	V/ns
P_D	Power Dissipation $T_C=25^\circ\text{C}$ Derate above 25°C	170 1.45	W W/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	62.5	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance,Junction-to-Case	0.7	$^\circ\text{C}/\text{W}$
T_j T_{stg}	Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	300	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=300V, V_{GS}=0V$	-	-	1	μA
Gate- Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3.0	-	5.0	V
Static drain-Source On-State resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=7.5A$	-	0.24	0.3	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$I_{SD}=15A, V_{GS}=0$	-	-	1.4	V
Input Capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	1310	1750	pF
Output Capacitance	C_{OSS}		-	210	280	pF
Reverse Transfer Capacitance	C_{RSS}		-	17	25	pF
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=200V, I_D=15A, R_G=25\Omega$	-	26	62	ns
Rise Time	t_R		-	55	120	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	72	154	ns
Fall Time	t_F		-	40	90	ns
Total Gate Charge	Q_g	$V_{DS}=320V, V_{GS}=10V, I_D=15A$	-	28	36	nC
Gate-source Charge	Q_{gs}		-	8		nC
Gate-drain Charge	Q_{gd}		-	12		nC
Maximum Body-Diode Continuous Current	I_S		-	-	15	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	60	A

Notes: 1: Repetitive Rating: Pulse width limited by maximum junction temperature

2: L = 6.5mH, IAS = 15A, VDD = 50V, RG = 25 , Starting TJ = 25°C

3: ISD 15A, di/dt 200A/ s, VDD BVDSS, Starting TJ = 25°C

4: Essentially Independent of Operating Temperature Typical Characteristics

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PACKAGE OUTLINE

Plastic surface mounted package

TO-220AB

