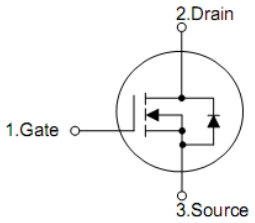
N-Channel Power MOSFET BL10N30

FEATURES

- High switching speed.
- RDS(ON)=0.65Ω @ VGS=10V.
- 100% avalanche tested.
- Very Good Manufacturing Reliabilty.

Lead-free



TO-220AB

APPLICATIONS

- N-Channel Power MOSFET.
- Switching Applications.

MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

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℃	10	A
I_{DM}	Drain Current(pulsed)Note1	40	A
P_D	Power Dissipation at T_C=25℃	115	W
E_{AS}	Avalanche Energy(Single Pulsed (Note 2))	360	mJ
E_{AR}	Avalanche Energy (Repetitive(Note 3))	13.5	mJ
P_D	Power Dissipation T_C=25℃ Derate above 25°C	135 1.07	W W/℃
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance,Junction-to-Case	0.93	℃/W
T_j T_{stg}	Junction and StorageTemperature Range	-55 to +150	℃

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Note:1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. L= 5.7mH, I_{AS} = 10.5A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C

3. I_{SD} ≤10.5A, di/dt ≤ 200A/μs, V_{DD} ≤ BV_{DSS}, Starting T_J = 25° C

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	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}=±30V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	-	4.0	V
Static drain-Source On-State resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=10A	-	0.5	0.65	Ω
Drain-Source Diode Forward Voltage	V_{SD}	I_{SD}=10A,V_{GS}=0	-	-	1.4	V
Input Capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	840	1090	pF
Output Capacitance	C_{OSS}		-	250	325	pF
Reverse Transfer Capacitance	C_{RSS}		-	80	110	pF
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 30V, I_D=4A, R_G=25Ω,V_{GS}=10V(Note 1, 2)	-	14	40	ns
Rise Time	t_R		-	89	190	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	81	170	ns
Fall Time	t_F		-	81	170	ns
Total Gate Charge	Q_g	V_{DS}=480V,V_{GS}=10V I_D=8A	-	50	70	nC
Gate-source Charge	Q_{gs}		-	10	-	nC
Gate-drain Charge	Q_{gd}		-	25	-	nC
Maximum Body-Diode Continuous Current	I_S		-	-	10	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	40	A

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Essentially independent of operating temperature.

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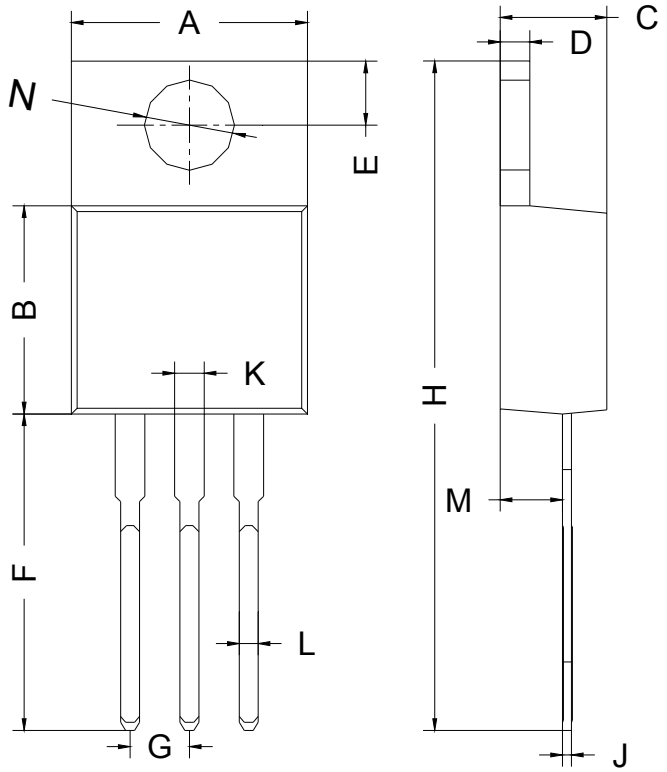
PACKAGE OUTLINE

Plastic surface mounted package TO-220AB



TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.57 Typical	
D	1.27 Typical	
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
J	0.38 Typical	
K	1.22	1.32
L	0.71	0.91
M	2.50 Typical	
N	3.86 Typical	
All Dimensions in mm		