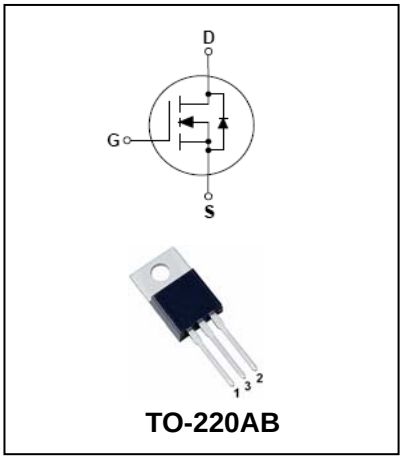
N-Channel Enhancement Mode Field Effect Transistor BL8N60

FEATURES

- $R_{DS(ON)}$ = 1.2Ω @ V_{GS} = 10V
- Ultra Low gate charge (typical 28nC)
- Low reverse transfer capacitance (C_{RSS} = typical 12.0 pF)
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness

Pb Lead-free

HF



TO-220AB

Ordering Information

Part Number	Package	Shipping	Marking Code
BL8N60□	TO-220AB	50pcs / Tube	8N60

Note for □: none is for Lead-free package

"G" is for Halogen-free package

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	600	V
V_{GS}	Gate -Source voltage	±30	V
I_D	Continuous Drain current T_C=25℃	7.5	A
	Continuous Drain current T_C=100℃	4.6	A
E_{AS}	Single Pulse Avalanche Energy(Note2)	230	mJ
E_{AR}	Avalanche Energy,Repetitive(Note1)	14.7	mJ
I_{AR}	Avalanche Current(Note2)	7.5	A
ISD	Continuous Drain-Source Current	7.5	A
ISM	Pulsed Drain-Source Current	30	A
dv/dt	Peak Diode Recovery dv/dt(Note4)	4.5	V/ns
P_D	Power Dissipation	147	W
	Derating Fcator above 25℃	0.32	W/℃
$R_{\theta JC}$	Junction-to-Case	0.85	℃/W
$R_{\theta JA}$	Junction-to-Ambient	62.5	℃/W
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	℃
T_L	Maximum Temperature for Soldering	+150	℃

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Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	600	-	-	V
Bvdss Temperature Coefficient	$\triangle BV_{DSS}/\triangle T_J$	I_D=250mA,	-	0.7	-	V/℃
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}= V_{GS}, I_D =250uA	2		4	V
Drain to Source Leakage Current	I_{DSS}	V_{DS}=600V, V_{GS}=0V	-	-	10	uA
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=3.75A	-	1.0	1.2	Ω
Gate-body Leakage Forward Reverse	I_{GSS}	V_{GS}=±30V			±100	nA
Input Capacitance	C_{iss}	V_{GS} = 0V V_{DS} = 25V f = 1.0MHz	-	965	1255	pF
Output Capacitance	C_{oss}		-	105	135	
Reverse Transfer Capacitance	C_{rss}		-	12	16	
Turn-on Delay Time	$td_{(ON)}$	I_D =7.5A V_{DD} = 300V	-	16.5	45	ns
Rise Time	tr		-	60.5	130	
Turn-Off Delay Time	$td_{(OFF)}$		-	81	170	
Fall Time	tf		-	64.5	140	
Total Gate Charge	Q_g	I_D =1.2A V_{DD} =480V V_{GS} = 10V	-	28	36	nC
Gate to Source Charge	Q_{gs}		-	4.5		nC
Gate to Drain (“Miller”)Charge	Q_{gd}		-	12		nC
Reverse Recovery Time	trr	I_S=7.5A,Tj = 25℃ dIF/dt=100A/us, VGS=0V	-	365	-	ns
Reverse Recovery Charge	Qrr		-	3.4	-	nC

Note: 1. Repetitive Rating : Pulse width limited by T_J

2. L = 7.3mH, I_{AS} = 7.5A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25°C

3. I_{SD} ≤ 7.5A, di/dt ≤200A/μs, V_{DD} ≤ BV_{DSS}, Starting T_J = 25°C

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

5. Essentially independent of operating temperature

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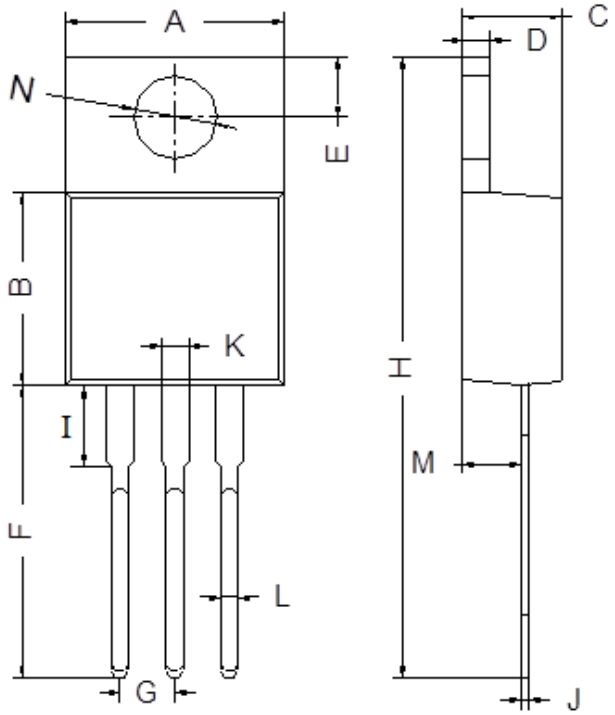
PACKAGE OUTLINE

Plastic surface mounted package TO-220AB



TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96
All Dimensions in mm		