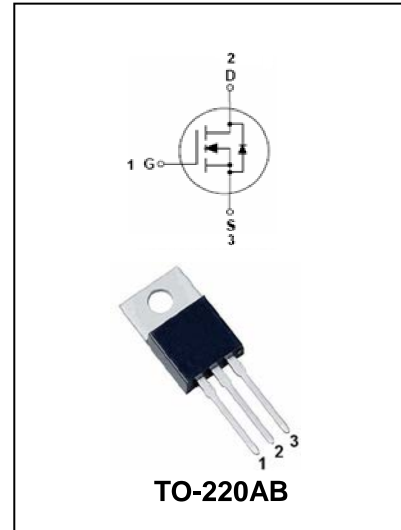
N-Channel Enhancement Mode Field Effect Transistor BL10N65

FEATURES

HF

- Extremely High dv/dt Capability.
- 100% AvalancheTtested.
- Gate Charge Minimized.
- Very Good Manufacturing Reliabilty.



APPLICATIONS

- N-channel Enhancement mode Effect Transistor.
- Switching Applications.

Ordering Information

Part Number	Package	Shipping	Marking Code
BL10N65	TO-220AB	50pcs / Tube	10N65

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		650	V
V_{GSS}	Gate -Source Voltage		±30	V
I_D	Maximum Drain Current(continuous) at	T_C=25℃ T_C=100℃	10 6.3	A
I_{DM}	Drain Current(pulsed)Note1		40	A
P_D	Power Dissipation at T_C=25℃		40	W
$V_{ESD(G-S)}$	G-S ESD (HBM C=100pF,R=1.5kΩ)		4000	V
E_{AS}	Single Pulse Avalanche Energy (starting T_j=25℃,I_D=I_{AR},V_{DD}=50V)		500	mJ
dv/dt	Peak Diode Recovery Voltage Slope(Note2)		4.5	V/ns
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient		62.5	℃/W
T_j T_{stg}	Operating Junction and StorageTem-perature Range		-55 to +150	℃

Note: 1. Pulse width limited by safe operating area

2. I_{SO}≤12A,di/dt≤400A/us,V_{Peak}<$V_{(BR)DSS}$

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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	650	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=650V, V_{GS}=0V V_{DS}=650V,V_{GS}=0V,T_C=125℃	-	-	1 50	μA
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2	-	4	V
Static drain-Source On-resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=5A	-	0.86	1	Ω
Forward Transconductance	g_{fs}	V_{DS}=15V,I_D=4.5A	-	7.8	-	A
Continuous Source Current(Body Diode)	I_S	Ta=25℃	-	-	10	A
Maximum Pulsed Current(Body Diode))	I_{SM}		-	-	40	A
Forward on Voltage	V_{SD}	I_{SD}=10A,V_{GS}=0	-	-	1.5	V
Input Capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	1642	-	pF
Output Capacitance	C_{OSS}		-	128	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	7	-	pF
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 300V, I_D=4A, R_G= 4.7Ω,V_{GS}=10V	-	20	-	ns
Rise Time	t_R		-	20	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	55	-	ns
Fall Time	t_F		-	30	-	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
Reverse Recovery Time	Trr	I_{SD}=8A,V_{DD}=40V dIF/dt=100A/μs,T_j=150℃	-	570	-	ns
Reverse Recovery Charge	Qrr		-	4.3	-	μC
Reverse Recovery Current	I_{RRM}		-	15	-	A

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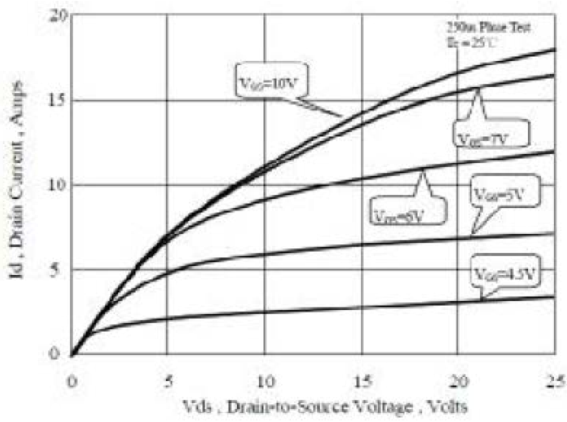
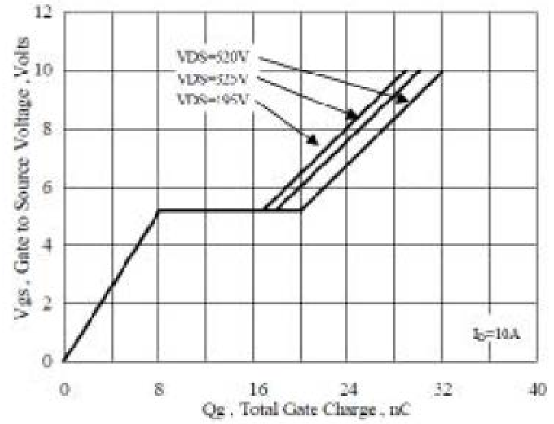
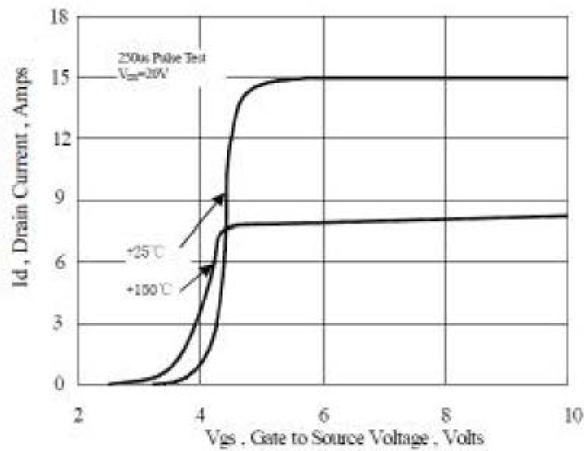
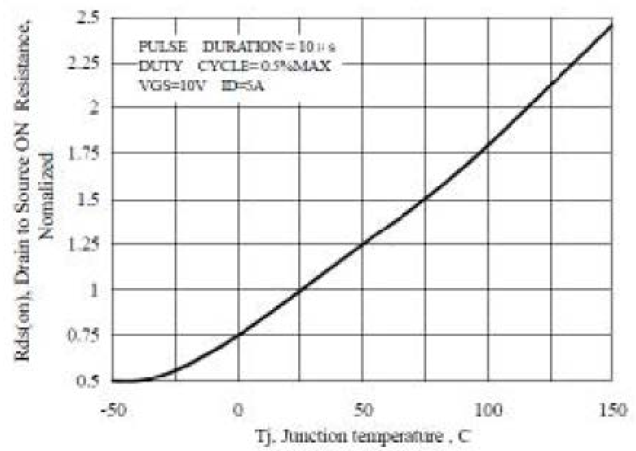
TYPICAL CHARACTERISTICS @ Ta=25 ‡ unless otherwise specified









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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		