

4A,650V N-Channel Power Mosfet

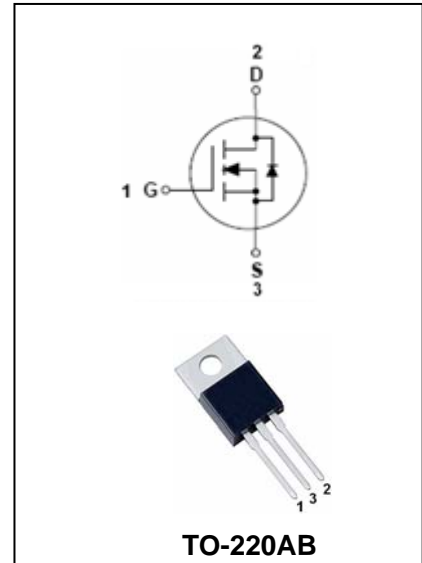
BL4N65

FEATURES

- $R_{DS(ON)} = 2.5\Omega @ V_{GS} = 10V$
- Ultra low gate charge ( typical 15 nC )
- Low reverse transfer Capacitance (  $CRSS = \text{typical } 8.0 \text{ pF}$  )
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness



Lead-free



MAXIMUM RATING @  $T_a = 25^\circ\text{C}$  unless otherwise specified

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage	650	V
$V_{GSS}$	Gate -Source voltage	$\pm 30$	V
$I_D$	Continuous Drain Current	4.0	A
$I_{DM}$	Pulsed Drain Current	16	A
$E_{AS}$ $E_{AR}$	Avalanche Energy Single Pulsed Repetitive	260 10.6	mJ
dv/dt	Peak Diode Recovery dv/dt	4.5	V/ns
$P_D$	Power Dissipation	36	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	62.5	$^\circ\text{C/W}$
$T_J$	Junction Temperature	+150	$^\circ\text{C}$
$T_{OPR}, T_{stg}$	Operating and Storage Temperature	-55 to +150	$^\circ\text{C}$

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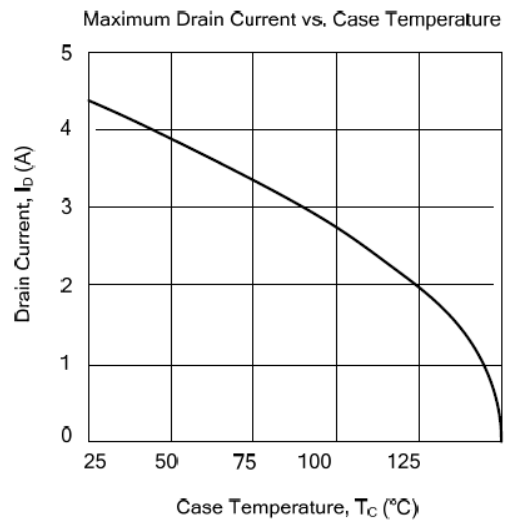
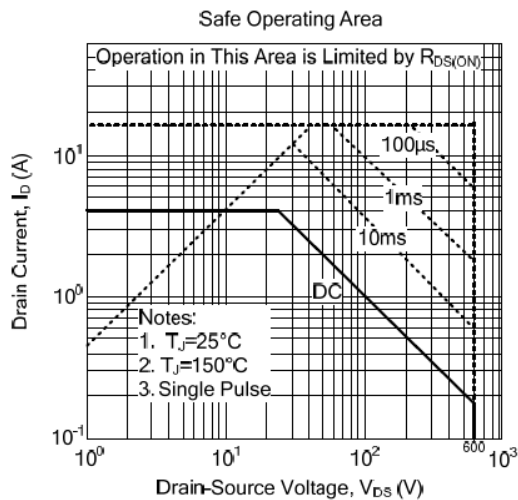
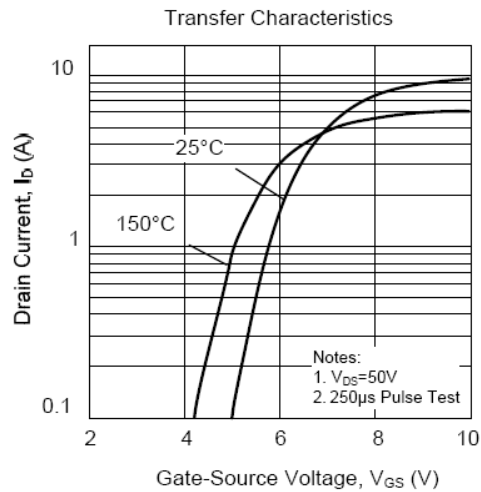
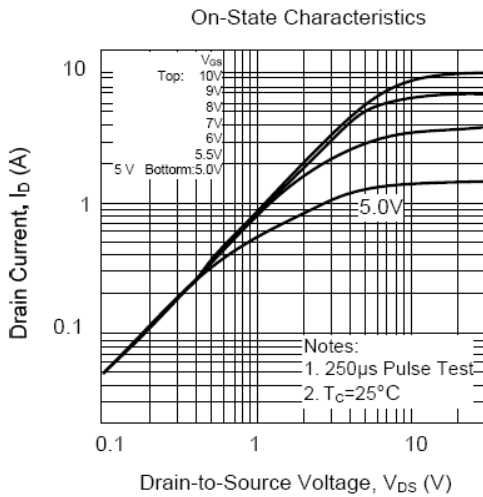
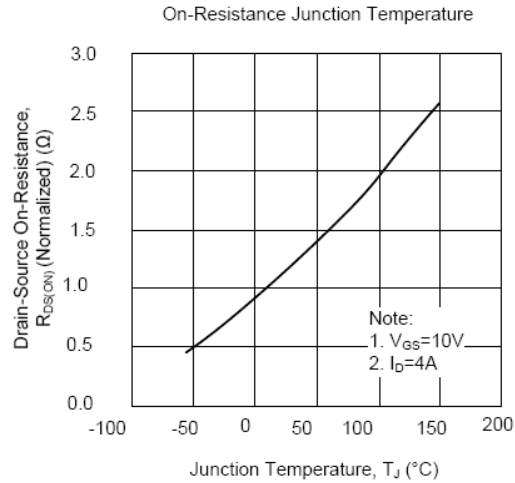
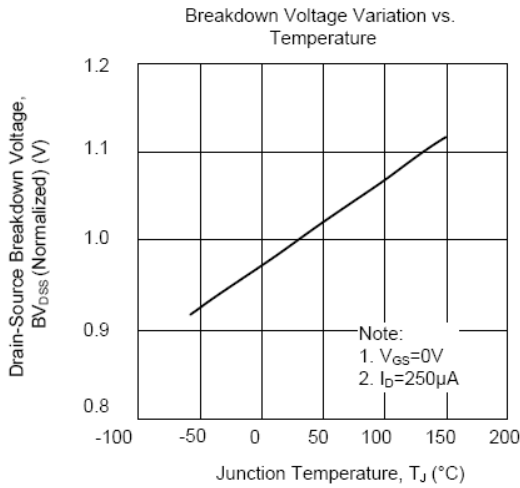
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=650V, V_{GS}=0V$	-	-	10	$\mu A$
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 30V$	-	-	$\pm 100$	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.2A$	-	2.4	2.5	$\Omega$
<b>DYNAMIC CHARACTERISTICS</b>						
Input capacitance	$C_{ISS}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	520	670	pF
Output capacitance	$C_{OSS}$		-	70	90	
Reverse transfer capacitance	$C_{RSS}$		-	8	11	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD} = 325V,$ $I_D = 4.0A,$ $R_G = 25\Omega$	-	13	35	ns
Rise Time	tr		-	45	100	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	25	60	ns
Fall Time	tf		-	35	80	ns
Total Gate Charge	Qg	$V_{DS} = 520V$ $I_D = 4.0A$ $V_{GS} = 10V,$	-	15	20	nC
Gate-Source Charge	Qgs		-	3.4	-	nC
Gate-Drain Charge	Qgd		-	7.1	-	nC
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source diode forward voltage	$V_{SD}$	$V_{GS}=0V, I_S=4.4A$	-	-	1.4	V
Maximum Continuous Drain-Source Diode Forward Current	$I_S$		-	-	4.4	A
Maximum Pulsed Drain-Source Diode Forward Current	$I_{SM}$		-	-	17.6	A
Body Diode Reverse Recovery Time	trr	$V_{GS}=0V, I_S=4.4A,$ $di/dt=100A/\mu s$	-	250	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	1.5	-	$\mu C$

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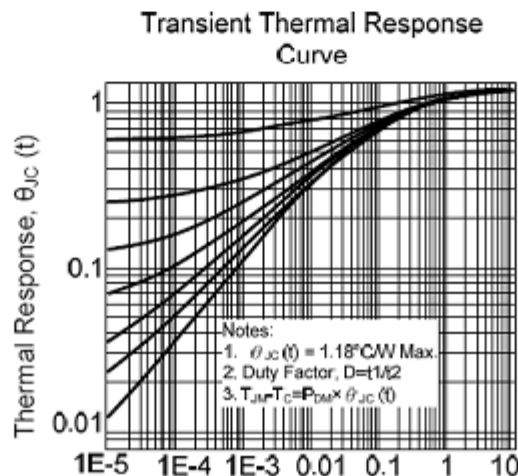
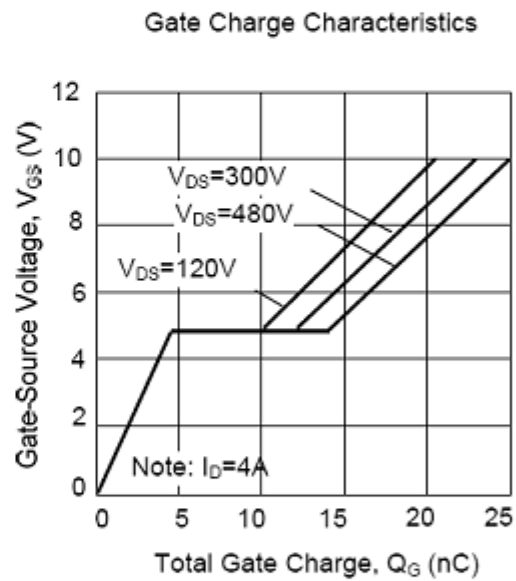
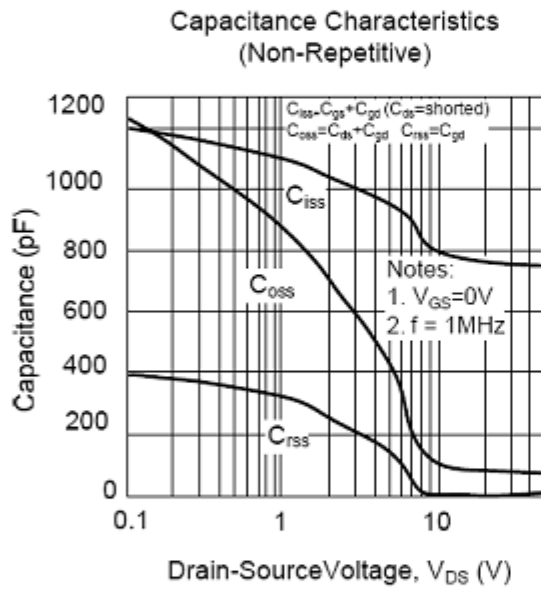
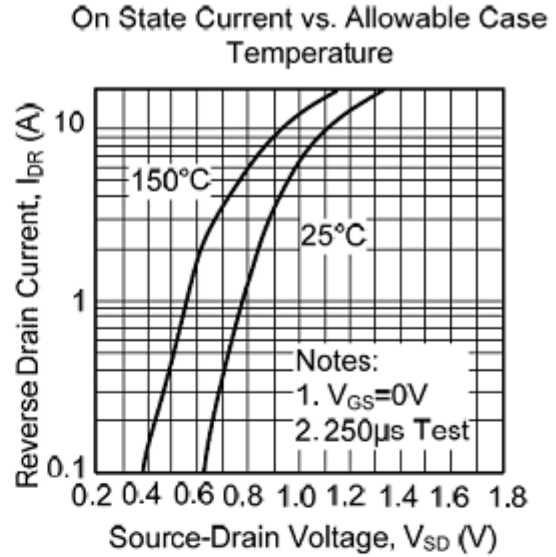
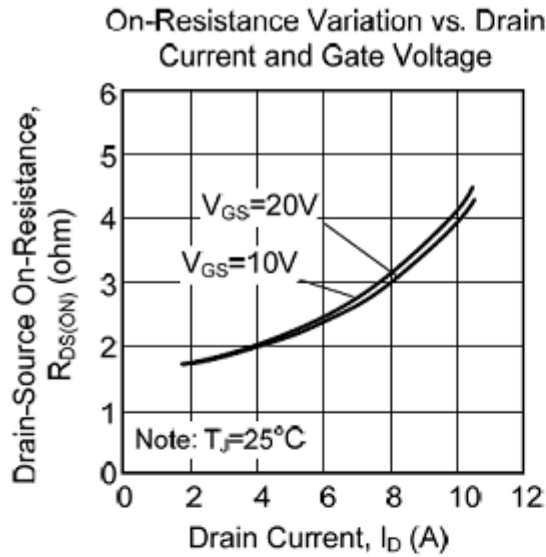
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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



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PACKAGE OUTLINE

Plastic surface mounted package

TO-220AB

