

N-Channel Enhancement Mode Field Effect Transistor

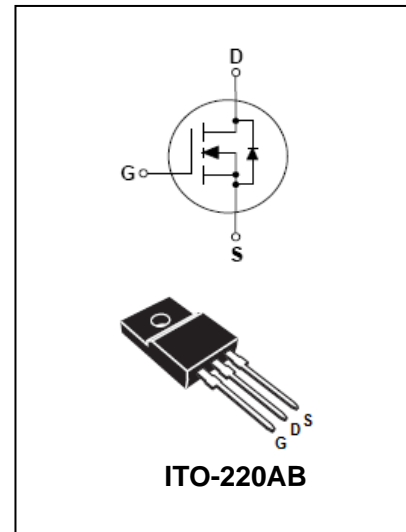
BL8N65F

FEATURES

- $R_{DS(ON)} = 1.4\Omega @ V_{GS} = 10V$.
- 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



Lead-free



MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	650	V
V_{GS}	Gate -Source voltage	± 30	V
I_D	Continuous Drain current $T_C=25^\circ C$ $T_C=100^\circ C$	8	A
		5.5	
E_{AS}	Single Pulse Avalanche Energy(Note2)	600	mJ
E_{AR}	Avalanche Energy, Repetitive(Note1)	14.7	mJ
I_{AR}	Avalanche Current(Note2)	8	A
ISD	Continuous Drain-Source Current	8	A
ISM	Pulsed Drain-Source Current	32	A
dv/dt	Peak Diode Recovery dv/dt(Note4)	4.5	V/ns
P_D	Power Dissipation	110	W
$R_{\theta JC}$	Junction-to-Case	2.6	$^\circ C/W$
$R_{\theta JA}$	Junction-to-Ambient	62.5	$^\circ C/W$
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	$^\circ C$
T_L	Maximum Temperature for Soldering	+150	$^\circ C$

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.

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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Bvdss Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	$I_D=250\mu A,$	-	0.7	-	V/°C
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250mA$	2		4	V
Drain to Source Leakage Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$	-	-	1	μA
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}	$V_{GS}=\pm 30V$			± 100	nA
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=25V$ $f=1.0MHz$	-	1145	1255	pF
Output Capacitance	C_{oss}		-	127	135	
Reverse Transfer Capacitance	C_{rss}		-	12	16	
Turn-on Delay Time	$t_{d(ON)}$	$I_D=7.5A, V_{DD}=300V$	-	16.5	45	ns
Rise Time	t_r		-	60.5	130	
Turn-Off Delay Time	$t_{d(OFF)}$		-	81	170	
Fall Time	t_f		-	64.5	140	
Total Gate Charge	Q_g	$I_D=8A, V_{DS}=520V$ $V_{GS}=10V$	-	28	36	nC
Gate to Source Charge	Q_{gs}		-	4.5		nC
Gate to Drain ("Miller") Charge	Q_{gd}		-	12		nC
Reverse Recovery Time	t_{rr}	$I_S=8A, di/dt=100A/\mu s,$ $V_{GS}=0V$	-	365	-	ns
Reverse Recovery Charge	Q_{rr}		-	3.4	-	nC

- Note: 1. Repetitive Rating : Pulse width limited by T_J
 2. L = 7.3mH, I_{AS} = 8A, V_{DD} = 50V, R_G = 25 Ω , Starting T_J = 25°C
 3. I_{SD} ≤ 8A, di/dt ≤ 200A/μs, V_{DD} ≤ BVDSS, 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

ITO-220AB

