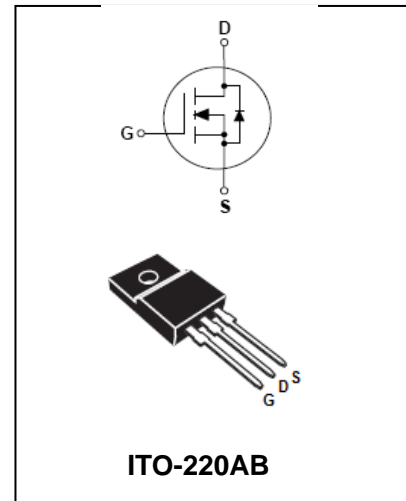


N-Channel Enhancement Mode Field Effect Transistor

BL8N40F

FEATURES

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



Ordering Information

Part Number	Package	Shipping	Marking Code
BL8N40F□	ITO-220AB	50/Tube	8N40F

□: none is for Lead Free package;

“G” is for Halogen Free package.

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

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	400	V
V_{GS}	Gate -Source voltage	± 30	V
I_D	Continuous Drain current $T_C=25^\circ\text{C}$	8	A
E_{AS}	Single Pulse Avalanche Energy(Note2)	320	mJ
E_{AR}	Avalanche Energy, Repetitive(Note1)	2.5	mJ
P_D	Power Dissipation	39	W
	Derate above 25°C	0.312	W/ $^\circ\text{C}$
$R_{\theta JC}$	Junction-to-Case	3.18	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Junction-to-Ambient	62.5	$^\circ\text{C}/\text{W}$
T_J, T_{stg}	Junction and Storage Temperature	-55 to +150	$^\circ\text{C}$
T_L	Maximum Temperature for Soldering	+150	$^\circ\text{C}$

Note: 1. 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 nimpiled.

2. Repetitive Rating: Pulse width limited by maximum junction temperature

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3.L = 10mH, IAS = 8A, VDD = 50V, RG = 25Ω, Starting TJ = 25°C

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	400	-	-	V
Bvdss Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250mA$, Reference to 25°C,	-	0.4	-	V/°C
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2.0		4.0	V
Drain to Source Leakage Current	I_{DSS}	$V_{DS}=400V, V_{GS}=0V$	-	-	10	uA
Static drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=4A$	-	0.68	0.82	Ω
Gate-body Leakage Forward Reverse	I_{GSS}	$V_{GS}=\pm 30V$			± 100	nA
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V$ $f = 1.0MHz$ (Note 1, 2)	-	-	1600	pF
Output Capacitance	C_{oss}		-	-	450	
Reverse Transfer Capacitance	C_{rss}		-	-	150	
Turn-on Delay Time	$t_{d(ON)}$	$V_{DD}=200V, I_D=8A$, $RG=25\Omega$ (Note 1, 2)	-	-	35	ns
Rise Time	t_r		-	-	15	
Turn-Off Delay Time	$t_{d(OFF)}$		-	-	90	
Fall Time	t_f		-	-	35	

Note: 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

ITO-220AB

