

N-Channel Power MOSFET

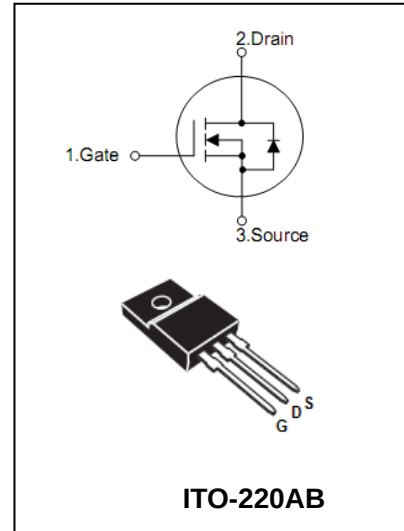
BL18N25F

FEATURES

- $R_{DS(ON)} = 0.16\Omega @ V_{GS} = 10V$
- High switching speed

APPLICATIONS

- N-Channel Power MOSFET.
- Switching Applications.



MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	25	V
V_{GS}	Gate -Source Voltage	± 20	V
I_D	Drain Current Continuous at $T_C=25^\circ\text{C}$	18	A
I_{DM}	Drain Current(pulsed)Note1	72	A
P_D	Power Dissipation at $T_C=25^\circ\text{C}$	40	W
E_{AS}	Avalanche Energy(Single Pulsed (Note 2))	360	mJ
E_{AR}	Avalanche Energy (Repetitive(Note 3))	945	mJ
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	62.5	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance,Junction-to-Case	3.1	$^\circ\text{C}/\text{W}$
$T_j T_{stg}$	Junction and StorageTemperature Range	-55 to +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 not implied.

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

3. Starting $T_j = 25^\circ\text{C}$, $L = 5.2\text{mH}$, $I_{AS} = 18\text{A}$, $V_{DD} = 50\text{V}$, $R_G = 25\Omega$.

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4. Drain current limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	250	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=250V, V_{GS}=0V$	-	-	1	μA
Gate- Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
Static drain-Source On-State resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=18A$	-	0.16	0.24	Ω
Drain-Source Diode Forward Voltage	V_{SD}	$I_{SD}=18A, V_{GS}=0$	-	-	1.4	V
Input Capacitance	C_{ISS}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	2200	2860	pF
Output Capacitance	C_{OSS}		-	330	430	pF
Reverse Transfer Capacitance	C_{RSS}		-	25	40	pF
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=30V, I_D=18A, R_G=25\Omega, (Note\ 1, 2)$	-	15	25	ns
Rise Time	t_R		-	130	195	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	30	45	ns
Fall Time	t_F		-	100	150	ns
Total Gate Charge	Q_g	$V_{DS}=125V, V_{GS}=10V, I_D=18A$	-	30	45	nC
Gate-source Charge	Q_{gs}		-	10	-	nC
Gate-drain Charge	Q_{gd}		-	10	-	nC
Maximum Body-Diode Continuous Current	I_S		-	-	18	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	72	A

Notes: 1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

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PACKAGE OUTLINE

Plastic surface mounted package

ITO-220AB

