7A,500V N-Channel Power Mosfet BL7N50F

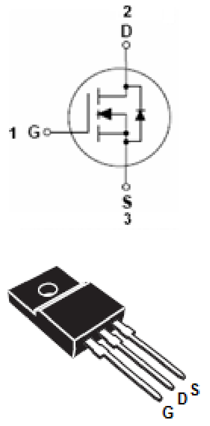
FEATURES

- $R_{DS(ON)}$ =1.10Ω@ V_{GS} = 10V
- Low reverse transfer Capacitance

  (CRSS = typical 8.5 pF)
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness

Lead-free

HF



ITO-220AB

Ordering Information

Part Number	Package	Shipping	Marking Code
BL7N50F☐	ITO-220AB	50/Tube	7N50F

☐: none is for Lead Free package;

"G" is for Halogen Free package.

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	500	V
V_{GSS}	Gate -Source voltage	±30	V
I_D	Continuous Drain Current	7.0	A
I_{DM}	Pulsed Drain Current	28	A
E_{AS} E_{AR}	Avalanche Energy Single Pulsed Repetitive	180 4	mJ
dv/dt	Peak Diode Recovery dv/dt	4.5	V/ns
P_D	Power Dissipation	100	W
$R_{\theta JA}$	Thermal resistance,Junction-to-Ambient	0.33	℃/W
T_J	Junction Temperature	+150	℃
T_{OPR}, Tstg	Operating and Storage Temperature	-55 to +150	℃

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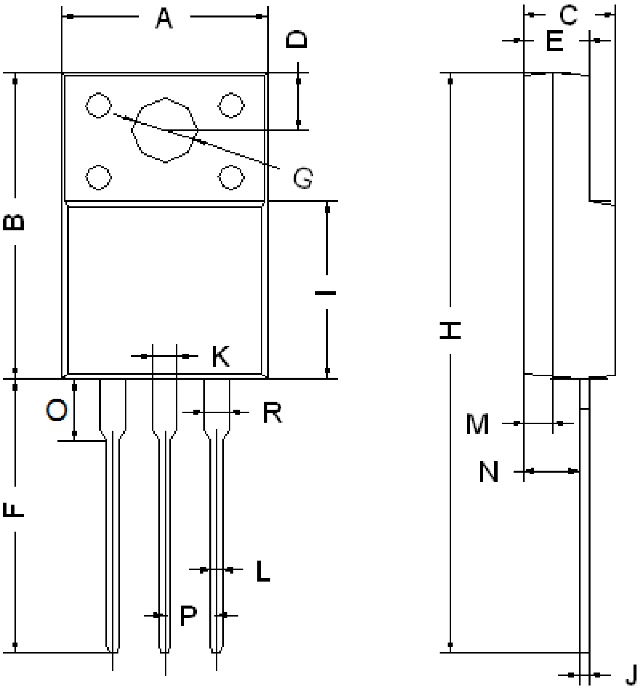
ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V,I_D=250μA	500	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V, V_{GS}=0V	-	-	1	μA
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±30V	-	-	±100	nA
Drain-Source diode forward voltage	V_{FSD}	V_{GS}=0V,I_S=7A			1.2	V
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	2.0	-	4.0	V
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=3.5A	-	0.9	1.1	Ω
DYNAMIC CHARACTERISTICS						
Input capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	710	-	pF
Output capacitance	C_{OSS}		-	95	-	
Reverse transfer capacitance	C_{RSS}		-	8.5	-	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 2V, I_D = 7.0A,	-	20	-	ns
Rise Time	tr		-	25	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	50	-	ns
Fall Time	tf		-	25	-	ns
Total Gate Charge	Qg	V_{DS} = 400V I_D=7.0A V_{GS}= 10V,	-	16	-	nC
Gate−Source Charge	Qgs		-	3.5	-	nC
Gate−Drain Charge	Qgd		-	6	-	nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source diode forward voltage	V_{SD}	V_{GS}=0V,I_s=7.0A	-	-	1.4	V
Maximum Continuous Drain-Source Diode Forward Current	I_S		-	-	7.0	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	28	A
Body Diode Reverse Recovery Time	trr	V_{GS}=0V ,Is=7.0A, dI/dt=100A/μs	-	310	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	2.7	-	uC

PACKAGE OUTLINE

Plastic surface mounted package ITO-220AB



ITO-220AB		
Dim	Min	Max
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30
All Dimensions in mm		