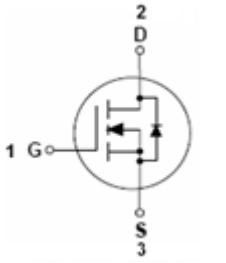
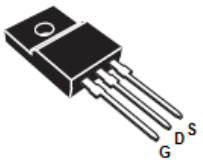
10A,800V N-Channel Power Mosfet BL10N80F

FEATURES

- $R_{DS(ON)}$ =1.1Ω@ V_{GS} = 10V
- Ultra Low Gate Charge (Typical 45 nC)
- Low Reverse Transfer Capacitance (CRSS = Typical 15 pF)
- Fast Switching Capability
- Avalanche Energy Specified
- Improved dv/dt Capability, High Ruggedness

Pb Lead-free





ITO-220AB

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	800	V
V_{GSS}	Gate -Source voltage	±30	V
I_D	Continuous Drain Current	10	A
I_{DM}	Pulsed Drain Current	40	A
E_{AS} E_{AR}	Avalanche Energy Single Pulsed Repetitive	920 24	mJ
dv/dt	Peak Diode Recovery dv/dt	4.0	V/ns
P_D	Power Dissipation	36	W
θJA	Junction to Ambient	62.5	℃/W
θJC	Junction to Case	3.47	℃/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	800	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=800V, V_{GS}=0V	-	-	10	μA
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±30V	-	-	±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	3.0	-	5.0	V
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=5.0A	-	0.93	1.1	Ω
DYNAMIC CHARACTERISTICS						
Input capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	2150	2800	pF
Output capacitance	C_{OSS}		-	180	230	
Reverse transfer capacitance	C_{RSS}		-	15	20	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 4000V, I_D = 10A, R_G= 25Ω	-	50	110	ns
Rise Time	tr		-	130	270	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	90	190	ns
Fall Time	tf		-	80	170	ns
Total Gate Charge	Qg	V_{DS} =640V I_D= 10A V_{GS}= 10V,	-	45	58	nC
Gate-Source Charge	Qgs		-	13.5	-	nC
Gate-Drain Charge	Qgd		-	17	-	nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source diode forward voltage	V_{SD}	V_{GS}=0V,I_s=10A	-	-	1.4	V
Maximum Continuous Drain-Source Diode Forward Current	I_S		-	-	10.0	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	40.0	A
Body Diode Reverse Recovery Time	trr	V_{GS}=0V ,Is=10.0A, dI/dt=100A/μs	-	730	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	10.9	-	uC

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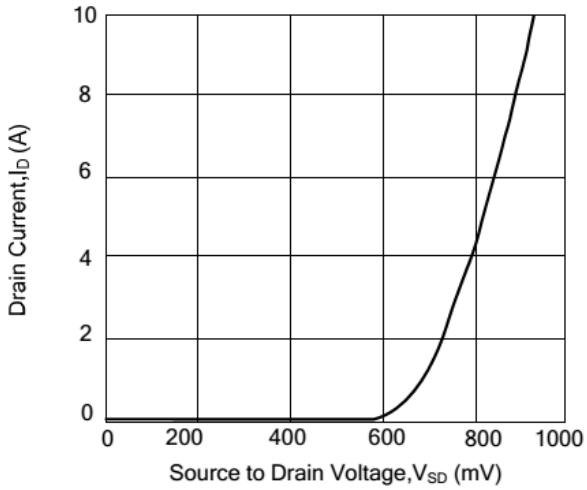
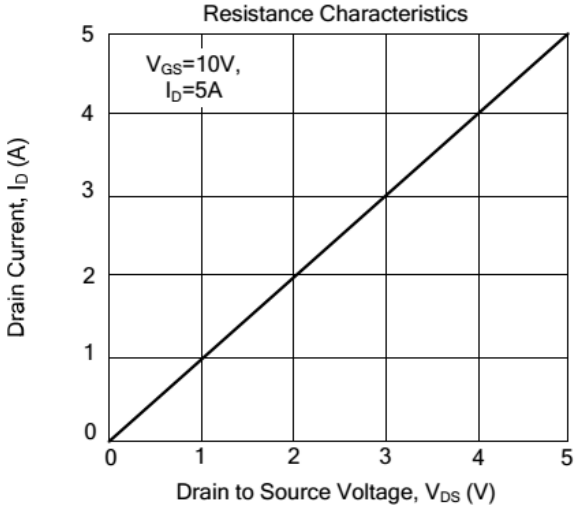
TYPICAL CHARACTERISTICS

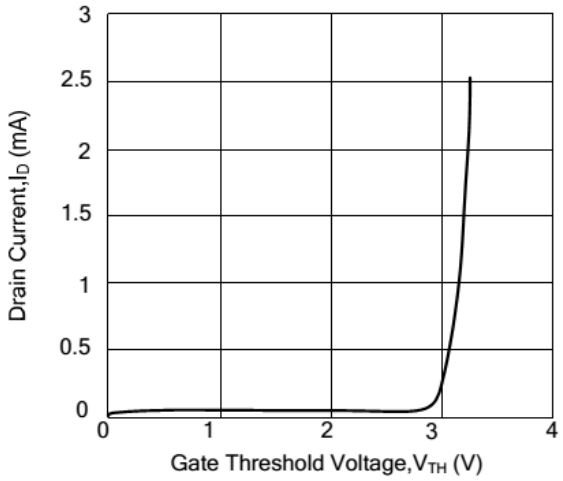
Drain Current vs. Source to Drain Voltage



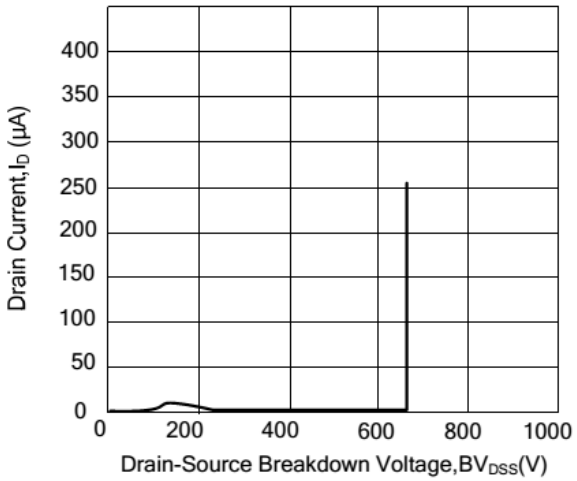
Drain-Source On-State Resistance Characteristics



Drain Current vs. Gate Threshold Voltage



Drain Current vs. Drain-Source Breakdown Voltage



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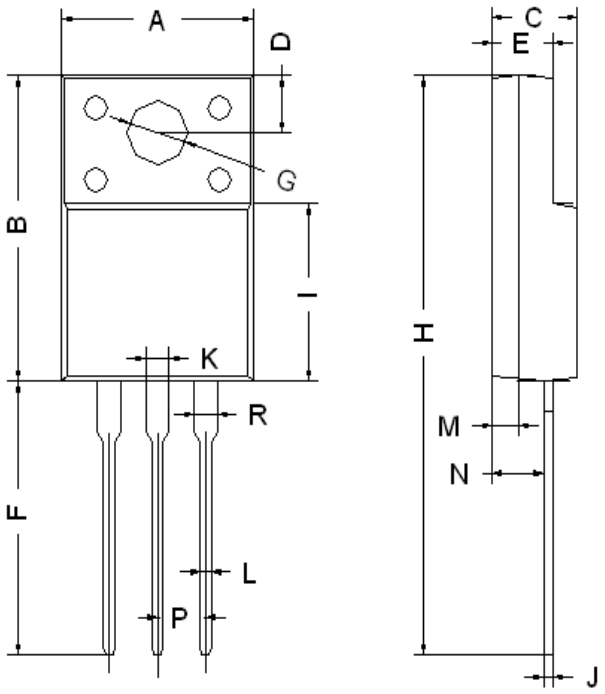
PACKAGE OUTLINE

Plastic surface mounted package ITO-220AB



ITO-220AB		
Dim	Min	Max
A	9.90	10.30
B	14.80	15.20
C	4.50 Typical	
D	2.70 Typical	
E	2.80	3.30
F	13.00	13.60
G	3.2 Typical	
H	28.00	28.60
I	7.90	8.90
J	0.50 Typical	
L	0.70	0.90
M	1.40 Typical	
N	2.60	2.80
P	2.45	2.65
K/R	1.20 Typical	
All Dimensions in mm		