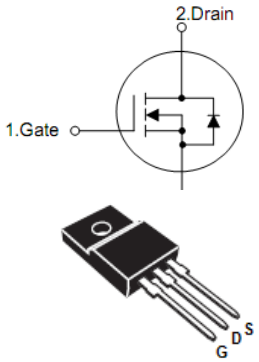
N-Channel Power MOSFET

BL6N70F

FEATURES

- RDS(ON)=1.6Ω @ VGS=10V, ID=3A
- Low gate charge (Typically 51nC)
- Low CRSS (Typically 45pF)
- High switching speed.



ITO-220AB

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

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	700	V
V_{GS}	Gate -Source Voltage	±30	V
I_D	Drain Current Continuous at T_C=25℃ TC=100°C	6 4	A
I_{DM}	Drain Current(pulsed)Note1	24	A
P_D	Power Dissipation	100	W
	Linear Derarting Factor	1.04	W/℃
E_{AS}	Avalanche Energy(Single Pulsed (Note 3))	100	mJ
E_{AR}	Avalanche Energy (Repetitive(Note 2))	13	mJ
$R_{\theta JA}$	Thermal Resistance,Junction-to-Ambient	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance,Junction-to-Case	0.96	℃/W
T_j T_{stg}	Junction and StorageTemperature Range	-55 to +150	℃

N-Channel Power MOSFET BL6N70F

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. L = 30mH, IAS = 6A, VDD = 50V, RG = 27Ω, Starting TJ = 25°C
4. ISD ≤ 6A, di/dt ≤140A/μs, VDD ≤ BVDSS, Starting TJ = 25°C

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

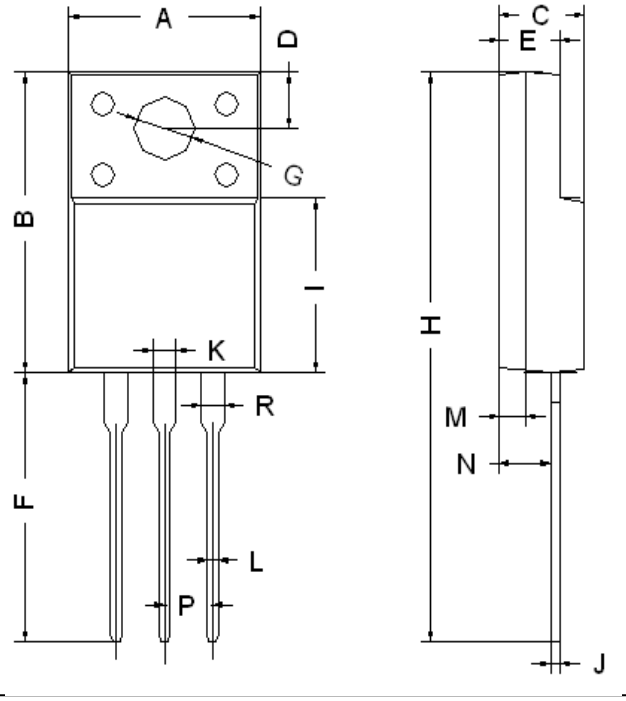
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	700	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=700V, V_{GS}=0V	-	-	1	μA
Gate- Source Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA,V_{DS}=5V	2.0	-	4.0	V
Static drain-Source On-State resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=3A	-	1.6	1.8	Ω
Drain-Source Diode Forward Voltage	V_{SD}	I_{SD}=6A,V_{GS}=0V	-	-	1.5	V
Input Capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	1075	1200	pF
Output Capacitance	C_{OSS}		-	84	115	pF
Reverse Transfer Capacitance	C_{RSS}		-	5	55	pF
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 350V, I_D=6A, R_G=11.5Ω	-	18	45	ns
Rise Time	t_R		-	23	55	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	76	160	ns
Fall Time	t_F		-	26	60	ns
Total Gate Charge	Q_g	V_{DS}=560V,V_{GS}=10V I_D=6A	-	51	67	nC
Gate-source Charge	Q_{gs}		-	8.3	-	nC
Gate-drain Charge	Q_{gd}		-	23.1	-	nC
Maximum Body-Diode Continuous Current	I_S		-	-	6	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	24	A

Notes: 1. Pulse Test: Pulse width ≤ 250μs, Duty cycle ≤ 2%
2. Essentially independent of operating temperature
3. Repetitive Rating: Pulse width limited by maximum junction temperature

N-Channel Power MOSFET BL6N70F

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		