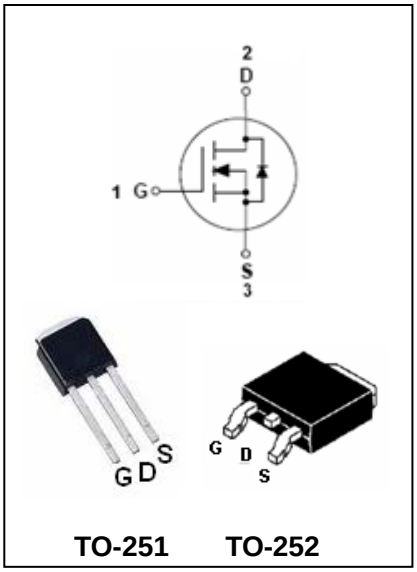
N-Channel Enhancement Mode MOSFET BL7N70I/BL7N70D

FEATURES

HF

- $R_{DS(ON)}$ = 1.3Ω @ V_{GS} = 10V
- Ultra low gate charge
- Low reverse transfer Capacitance
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness



TO-251 TO-252

Ordering Information

Part Number	Package	Shipping	Marking Code
BL7N70I	TO-251	80 pcs / Tube	7N70I
BL7N70D	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	7N70D

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{DSS}	Drain-Source voltage		700	V
V_{GSS}	Gate -Source voltage		±30	V
I_D	Continuous Drain Current		7	A
I_{DM}	Pulsed Drain Current		28	A
E_{AS}	Avalanche Energy	Single Pulsed	440	mJ
E_{AR}		Repetitive	13	
dv/dt	Peak Diode Recovery dv/dt		4.5	V/ns
P_D	Power Dissipation (Tc=25℃)		60	W
$R_{\theta JA}$	Thermal resistance,Junction-to-Ambient		110	℃/W
$R_{\theta JC}$	Thermal resistance,Junction-to-Case		2.08	℃/W
T_J	Junction Temperature		+150	℃
T_{STG}	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	700	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=700V, 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	2.0	3.2	4.0	V
Static drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=10V,I_D=3.1A	-	0.95	1.3	Ω
DYNAMIC CHARACTERISTICS						
Input capacitance	C_{ISS}	V_{DS}=25V,V_{GS}=0V,f=1.0MHz	-	770	1000	pF
Output capacitance	C_{OSS}		-	95	120	
Reverse transfer capacitance	C_{RSS}		-	10	13	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 325V, I_D = 6.2A, R_G= 25Ω	-	20	50	ns
Rise Time	tr		-	70	150	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	40	90	ns
Fall Time	tf		-	45	100	ns
Total Gate Charge	Qg	V_{DS} = 520V I_D= 6.2A V_{GS}= 10V,	-	20	25	nC
Gate-Source Charge	Qgs		-	4.9	-	nC
Gate-Drain Charge	Qgd		-	9.4	-	nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source diode forward voltage	V_{SD}	V_{GS}=0V,I_s=6.2A	-	-	1.4	V
Maximum Continuous Drain-Source Diode Forward Current	I_S		-	-	7	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	28	A
Body Diode Reverse Recovery Time	trr	V_{GS}=0V ,Is=4.4A, dI/dt=100A/μs	-	290	-	nS
Body Diode Reverse Recovery Charge	Qrr		-	2.35	-	uC

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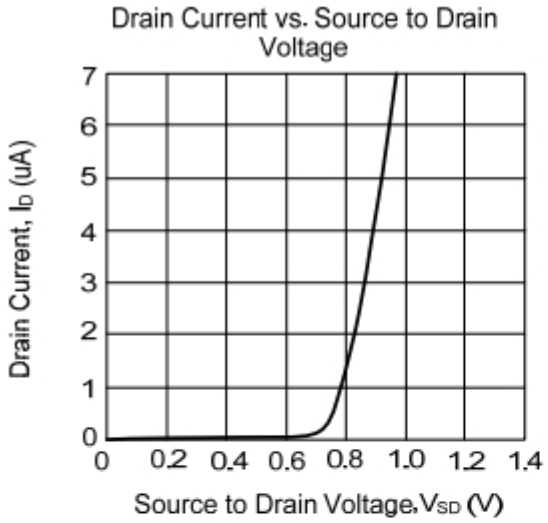
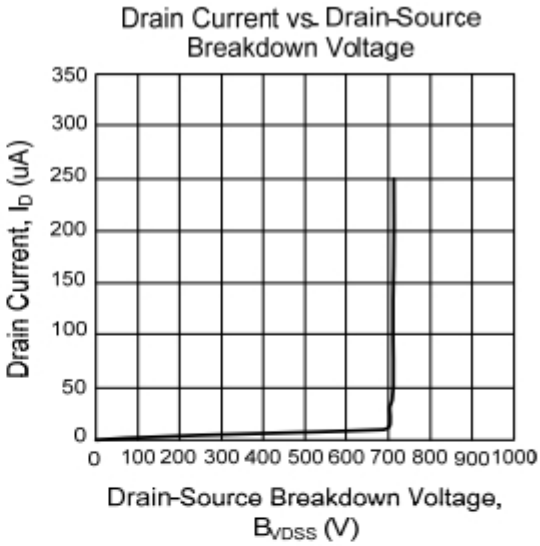
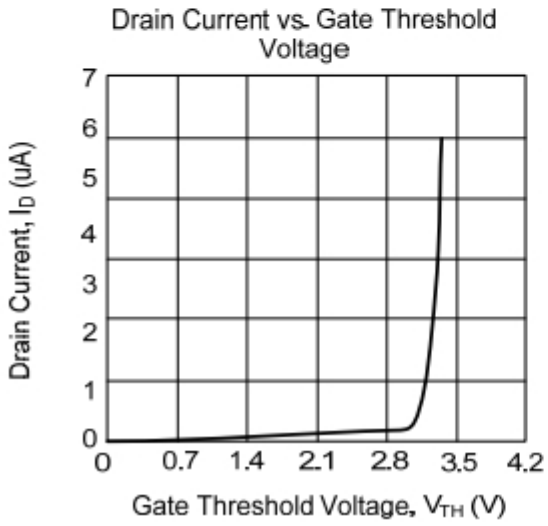
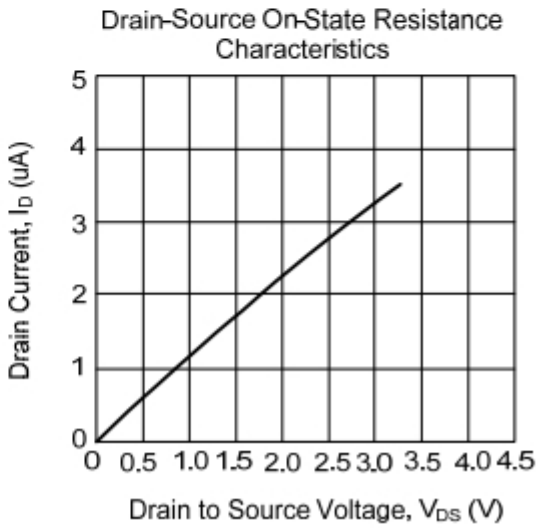
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified









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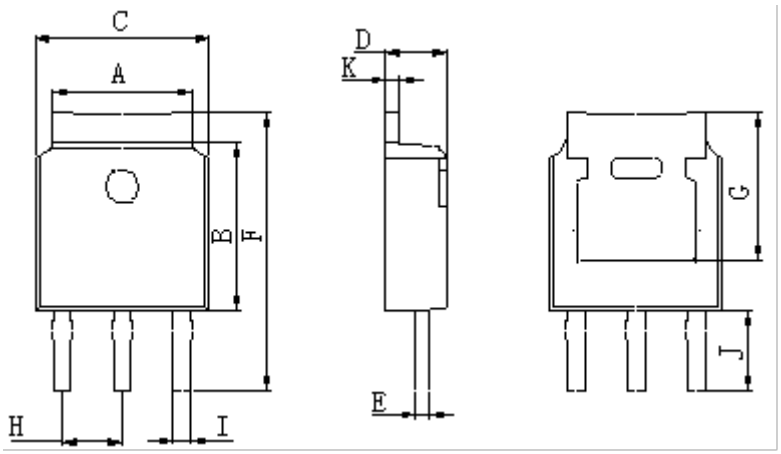
PACKAGE OUTLINE

Plastic surface mounted package

TO-251

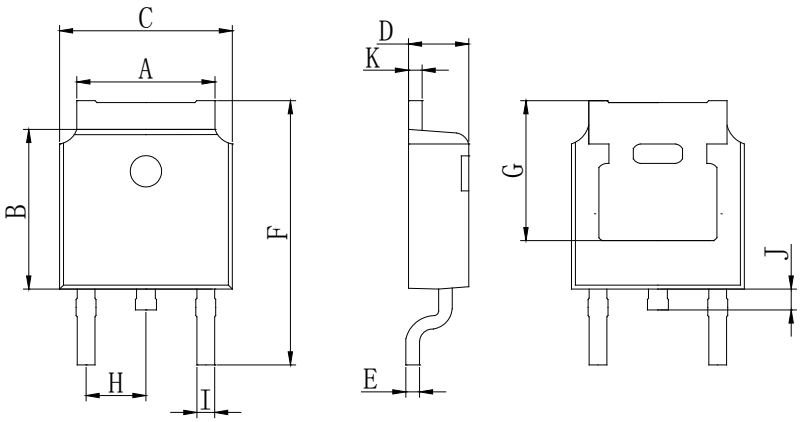


TO-251		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	12.00	12.60
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	4.90	5.50
K	0.40	0.60
All Dimensions in mm		

PACKAGE OUTLINE

Plastic surface mounted package

TO-252



TO-252		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.7
K	0.40	0.60
All Dimensions in mm		

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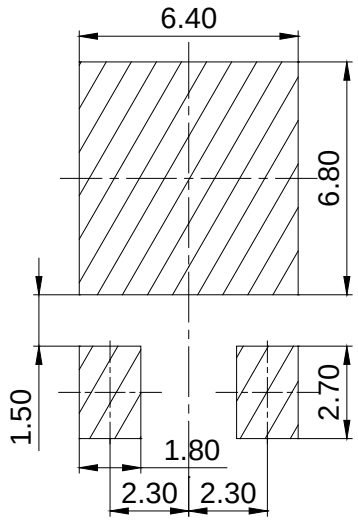
SOLDERING FOOTPRINT



Unit: mm