

6A,650V N-Channel Power Mosfet

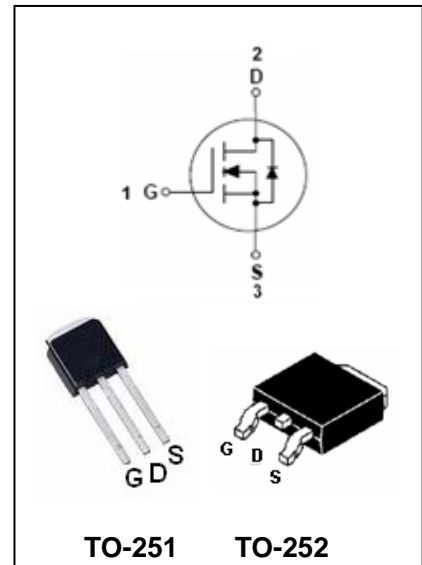
BL6N65I/BL6N65D

FEATURES

- $R_{DS(ON)} = 1.7\Omega @ V_{GS} = 10V$
- Ultra low gate charge (typical 20 nC)
- Low reverse transfer Capacitance ($CRSS = \text{typical } 10 \text{ pF}$)
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness



Lead-free



MAXIMUM RATING @ $T_a = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	650	V
V_{GSS}	Gate -Source voltage	± 30	V
I_D	Continuous Drain Current	6.2	A
I_{DM}	Pulsed Drain Current	24.8	A
E_{AS} E_{AR}	Avalanche Energy Single Pulsed Repetitive	440 13	mJ
dv/dt	Peak Diode Recovery dv/dt	4.5	V/ns
P_D	Power Dissipation	40	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	62.5	$^\circ\text{C}/\text{W}$
T_J	Junction Temperature	+150	$^\circ\text{C}$
T_{OPR}, T_{stg}	Operating and Storage Temperature	-55 to +150	$^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$	-	-	10	μA
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 30V$	-	-	± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3.1A$	-	1.1	1.7	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	$t_{D(ON)}$	$V_{DD} = 325V,$ $I_D = 6.2A,$ $R_G = 25\Omega$	-	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		-	-	6.2	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	24.8	A
Body Diode Reverse Recovery Time	trr	$V_{GS}=0V, I_S=4.4A,$	-	290	-	nS
Body Diode Reverse Recovery Charge	Qrr	$di/dt=100A/\mu s$	-	2.35	-	μC

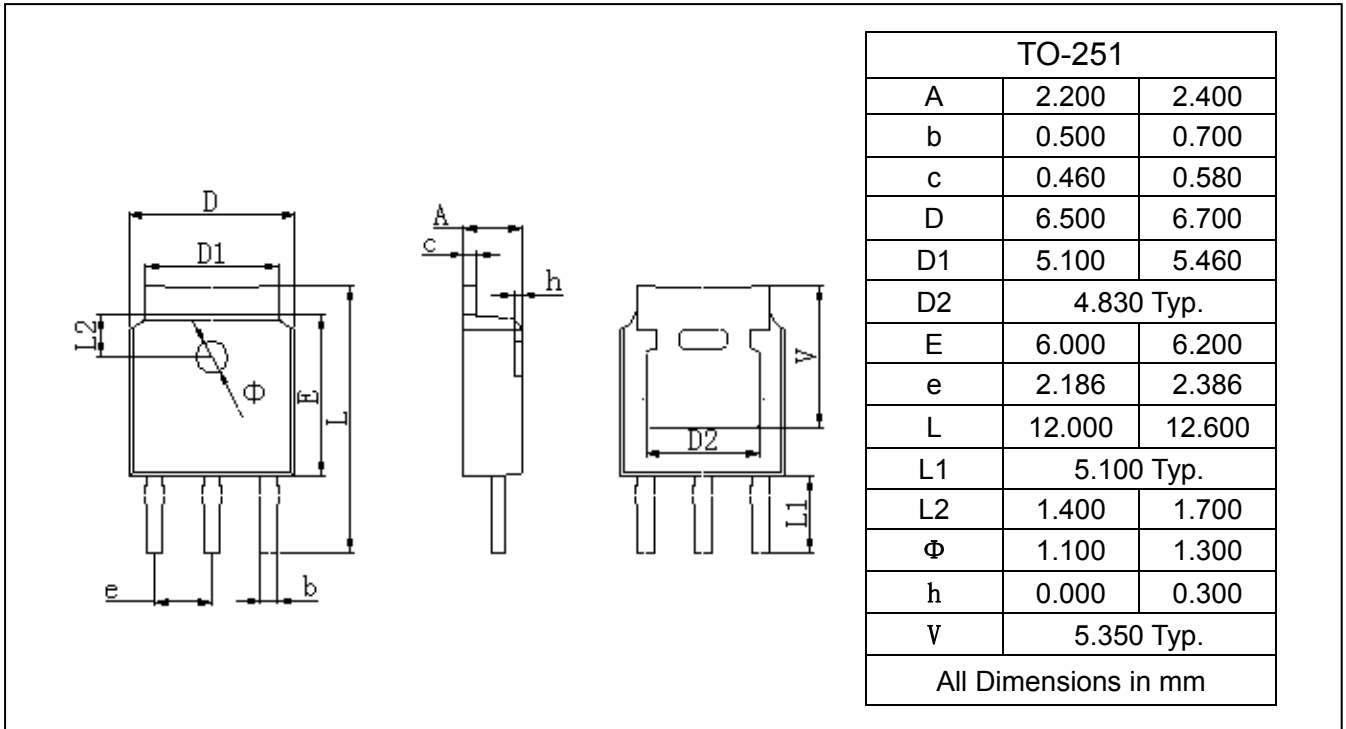
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BL6N65I/BL6N65D

PACKAGE OUTLINE

Plastic surface mounted package

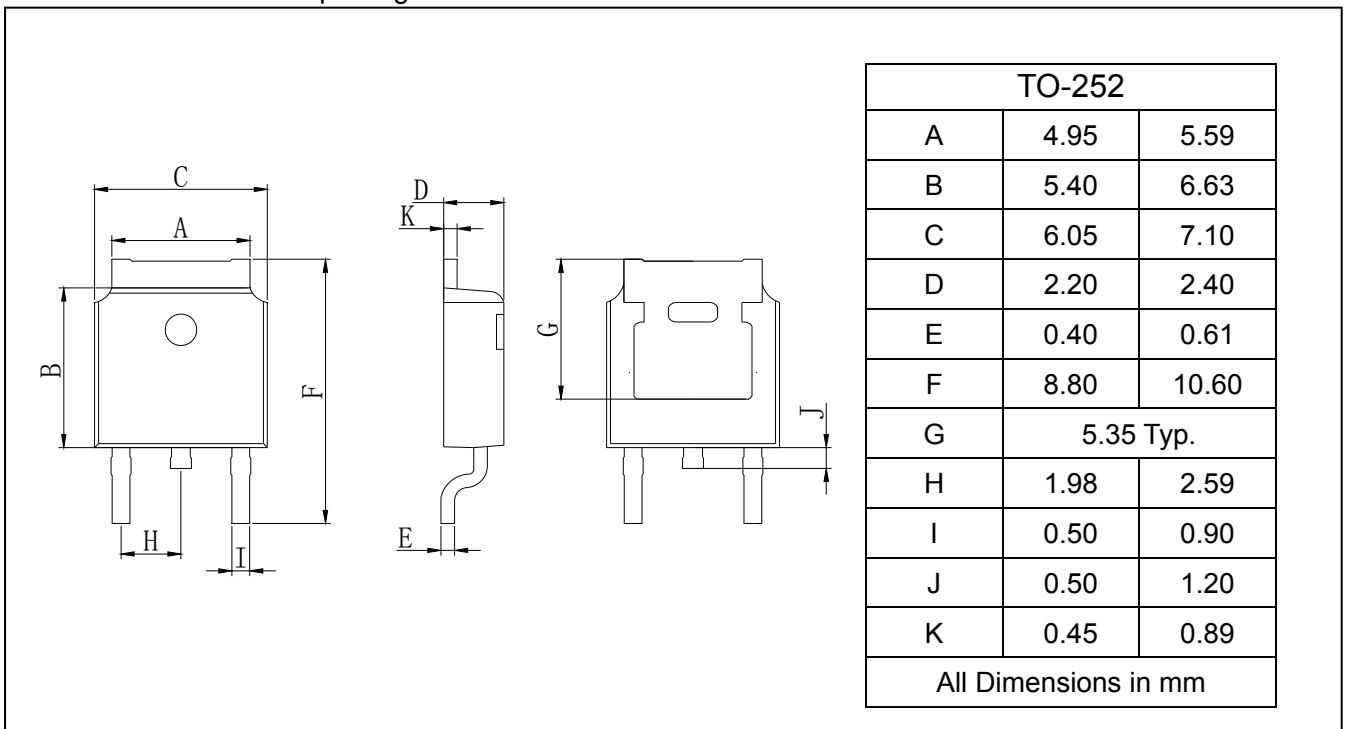
TO-251



PACKAGE OUTLINE

Plastic surface mounted package

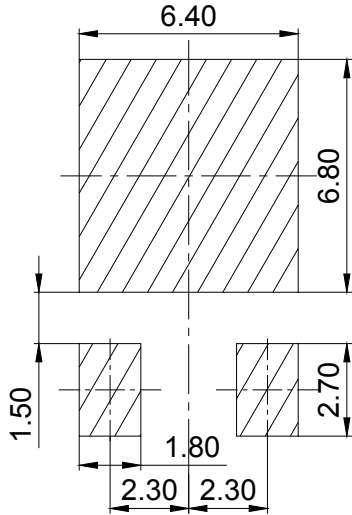
TO-252



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BL6N65I/BL6N65D

SOLDERING FOOTPRINT



Unit:mm

PACKAGE INFORMATION

Device	Package	Shipping
BL6N65I/6N65D	TO-251/252	80PCS/Tube
	TO-252	2500PCS/Tape&Reel