
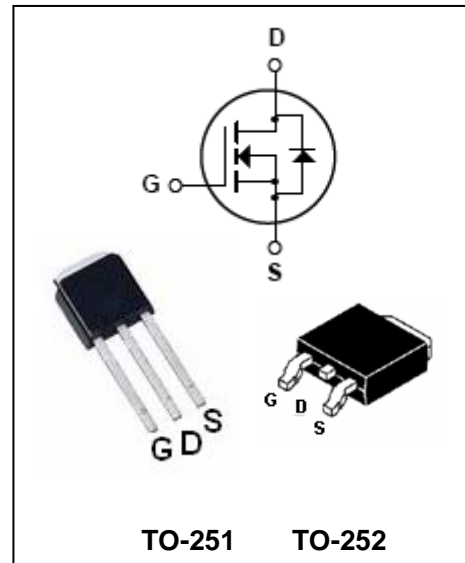


## 2 Amps, 600 Volts N-CHANNEL MOSFET

## BL2N65I/2N65D

### FEATURES

- $R_{DS(on)}=3.8\Omega@V_{GS}=10V$ .
- Ultra Low gate charge (typical 9.0nC)  Lead-free
- Low reverse transfer capacitance ( $C_{rss}$  = typical 5.0 pF)
- Fast switching capability
- Avalanche energy specified
- Improved dv/dt capability, high ruggedness



**MAXIMUM RATING** operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage	650	V
$I_D$	Drain current continuous ( $T_C=25^\circ C$ )	2.0	A
$I_{DM}$	Drain current Pulsed (Note2)	8.0	A
$V_{GSS}$	Gate -Source voltage	$\pm 30$	V
$I_{AR}$	Avalanche Current (Note2)	2.0	A
$E_{AR}$	Avalanche Energy Repetitive(Note 2)	4.5	mJ
$E_{AS}$	Avalanche Energy Single Pulse(Note 3)	140	mJ
dv/dt	Peak Diode Recovery dv/dt (Note4)	4.5	V/ns
$P_D$	Power Dissipation ( $T_C=25^\circ C$ )	44	W
$T_J$	Junction Temperature	+150	$^\circ C$
$T_{STG}$	Storage Temperature	-55 ~ +150	$^\circ C$
$\theta_{JA}$	Thermal Resistance Junction-Ambient	50	$^\circ C/W$
$\theta_{JC}$	Thermal Resistance Junction-Case	2.87	$^\circ C/W$

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.  $L=64mH$ ,  $I_{AS}=2.0A$ ,  $V_{DD}=50V$ ,  $R_G=25\ \Omega$ , Starting  $T_J = 25^\circ C$

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4.  $I_{SD} \leq 2.4A$ ,  $di/dt \leq 200A/\mu s$ ,  $V_{DD} \leq BV_{DSS}$ , Starting  $T_J = 25^\circ C$

### ELECTRICAL CHARACTERISTICS@ $T_a=25^\circ C$ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	650	-	-	V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250\mu A$ , Referenced to $25^\circ C$	-	0.4	-	$V/^\circ C$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=600V, V_{GS}=0V$	-	-	10	$\mu A$
		$V_{DS}=480V, T_C=125^\circ C$	-	-	100	
Gate-body Leakage	$I_{GSS}$	Forward $V_{DS}=0V, V_{GS}=30V$	-	-	100	nA
		Reverse $V_{DS}=0V, V_{GS}=-30V$	-	-	-100	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	
Static drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$ ,	-	3.8	5	$\Omega$
Forward transconductance	$g_{FS}$	$V_{DS}=50V, I_D=1A$ (Note1)	-	2.25	-	S
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	270	350	pF
Output Capacitance	$C_{oss}$		-	40	50	pF
Reverse Transfer Capacitance	$C_{rss}$		-	5	7	pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=300V, I_D=2.4A, R_G=25\Omega$ (Note1,2)	-	10	30	ns
Turn-On Rise Time	$t_R$		-	25	60	ns
Turn-Off Delay Time	$t_{d(off)}$		-	20	50	ns
Turn-Off Fall Time	$t_f$		-	25	60	ns
Total Gate Charge	$Q_g$	$V_{DS}=480V, I_D=2.4A, V_{GS}=10V$ (Note1,2)	-	9.0	11	nC
Gate-Source Charge	$Q_{gs}$		-	1.6	-	nC
Gate-Drain Charge	$Q_{gd}$		-	4.3	-	nC
Maximum Continuous Drain-Source Diode Forward Current	$I_{SD}$		-	-	2.0	A
Maximum Pulsed Drain-Source Diode Forward Current	$I_{SM}$		-	-	8.0	A
Drain-Source Recovery Charge	$V_{SD}$	$V_{GS}=0V, I_{SD}=2.0A$	-	-	1.4	V
Reverse Recovery Time	$t_{rr}$	$V_{GS}=0V, I_{SD}=2.4A$ , $di_F/dt=100A/\mu s$ (Note1)	-	180	-	ns
Reverse Recovery Charge	$Q_{rr}$		-	0.72	-	$\mu C$

Notes:

1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$
2. Essentially Independent of Operating Temperature

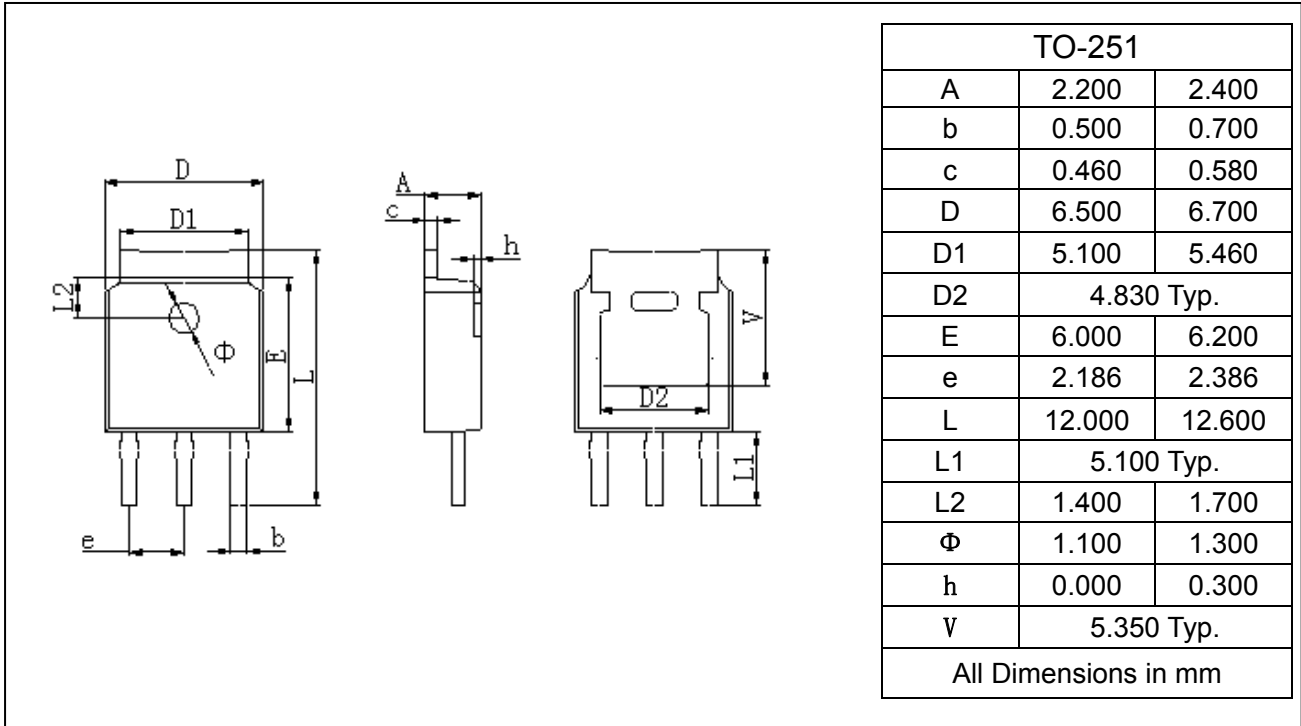
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## BL2N65I/2N65D

### PACKAGE OUTLINE

Plastic surface mounted package

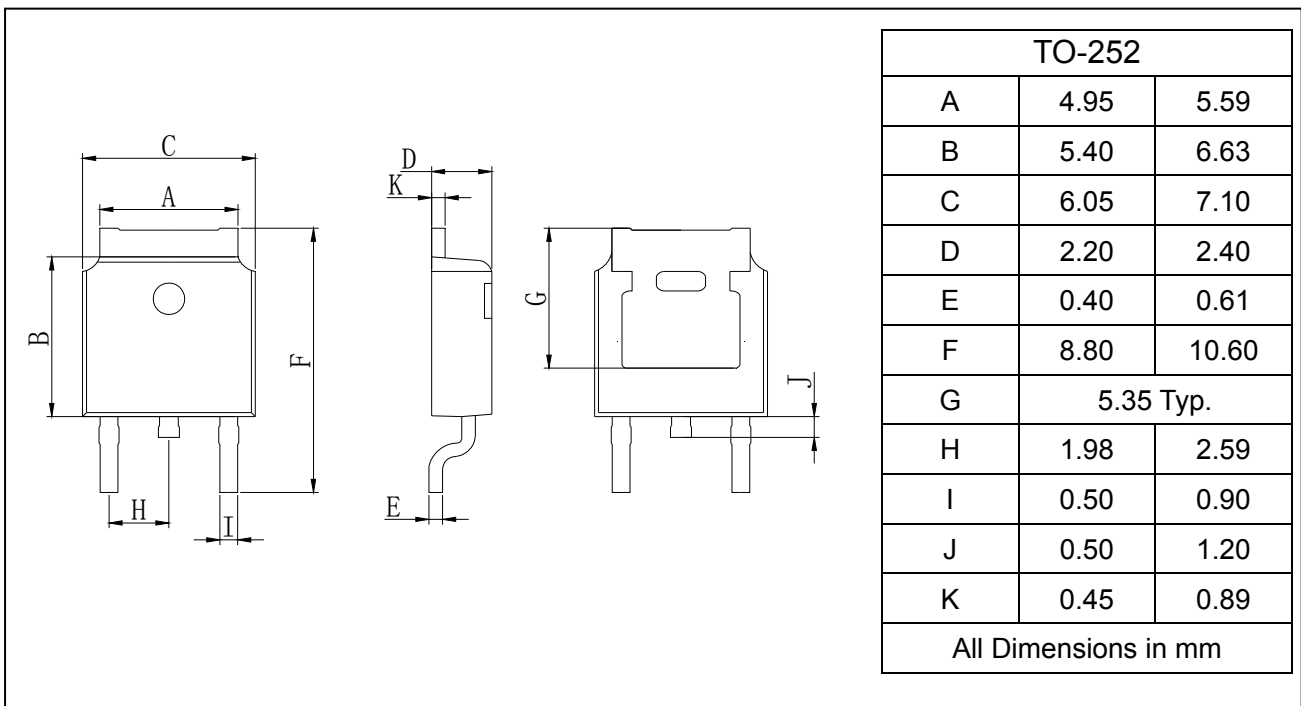
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### PACKAGE OUTLINE

Plastic surface mounted package

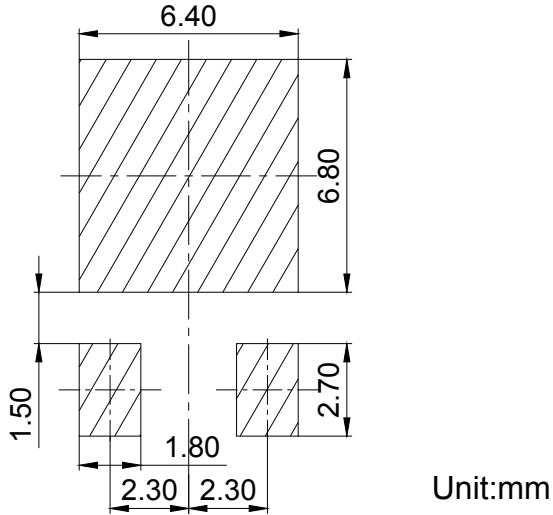
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**2 Amps, 600 Volts N-CHANNEL MOSFET**

**BL2N65I/2N65D**

**SOLDERING FOOTPRINT**



**PACKAGE INFORMATION**

Device	Package	Shipping
BL2N65I/2N65D	TO-251/252	80PCS/Tube
	TO-252	2500PCS/Tape&Reel