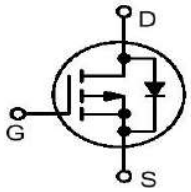
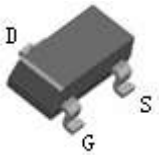
P-Channel Enhancement Mode Power Mosfet **BL2311**

FEATURES

- Super High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- Reliable and Rugged
- Electrostatic Sensitive Devices.

Lead-free





SOT-23

APPLICATIONS

- Power Management in Notebook.
- Portable Equipment.
- Battery Powered System.

ORDERING INFORMATION

Type No.	Marking	Package Code
BL2311	2311	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Units**
V_{DSS}	Drain-Source voltage	-20	V
V_{GSS}	Gate -Source voltage	±8	V
I_D	Maximum Drain current T_A=25˚C T_A=70˚C	-4.2 -3.4	A
I_{DM}	Pulsed Drain current	-10	A
P_D	Power Dissipation	1.37	W
$R_{\theta JA}$	Thermal resistance,Junction-to-Ambient	90	℃/W
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55~+150	℃

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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	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.5	-	-	
Forward Transconductance	gfs	V_{DS}=-5V,I_D=-2.8A	-	9	-	S
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=8V	-	-	100	nA
		V_{DS}=0V, V_{GS}=-8V	-	-	-100	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V, V_{GS}=0V	-	-	-1	μA
Drain-Source on-resistance	$R_{DS(ON)}$	V_{GS}=-10V,I_D=-4.5A	-	-	53	mΩ
		V_{GS}=-4.5V,I_D=-4.2A	-	-	65	
		V_{GS}=-2.5V,I_D=-2.0A	-	-	100	
		V_{GS}=-1.8V,I_D=-1.0A	-	-	250	
Diode forward voltage	V_{SD}	V_{GS}=0V,I_S=-1.2A	-	-	-1.2	V
Total Gate Charge	Qg	V_{DS}=-16V,V_{GS}=-4.5V, I_D=-4.2A	-	10.6	-	nC
Gate-Source Charge	Qgs		-	2.32	-	
Gate-Drain Charge	Qgd		-	3.68	-	
Input capacitance	C_{ISS}	V_{DS}=-15V,V_{GS}=0V,f=1.0MHz	-	740	-	pF
Output capacitance	C_{OSS}		-	167	-	
Reverse transfer capacitance	C_{RSS}		-	126	-	
Turn-On Delay Time	$t_{D(ON)}$	V_{DS} = -15V, I_D= -4.2A, R_G= 6Ω, V_{GS}= -10V, R_D= 3.6Ω	-	5.9	-	ns
Rise Time	t_R		-	3.6	-	
Turn-Off Delay Time	$t_{D(OFF)}$		-	32.4	-	
Fall Time	t_R		-	2.6	-	
Reverse Recovery Time	Trr	I_S=-4.2A,V_{GS}=0 dI/dt=100A/us	-	27.7	-	ns
Reverse Recovery Charge	Qrr		-	22	-	nC

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

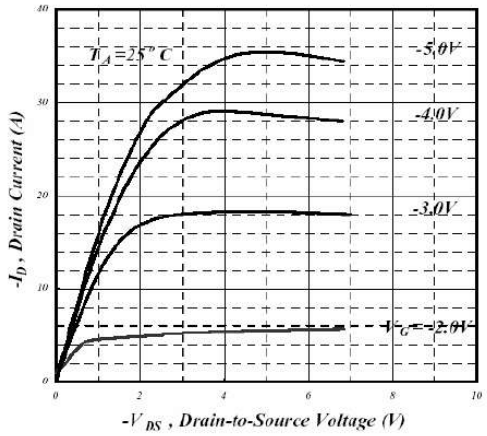

Fig 1. Typical Output Characteristics

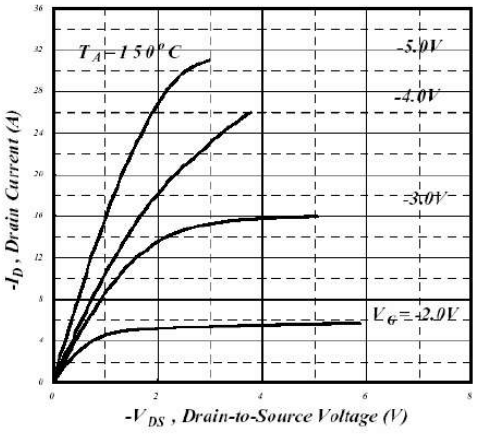

Fig 2. Typical Output Characteristics

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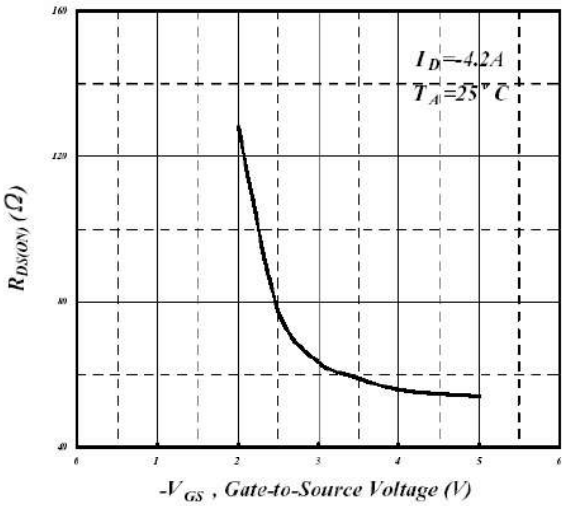

Fig 3. On-Resistance v.s. Gate Voltage

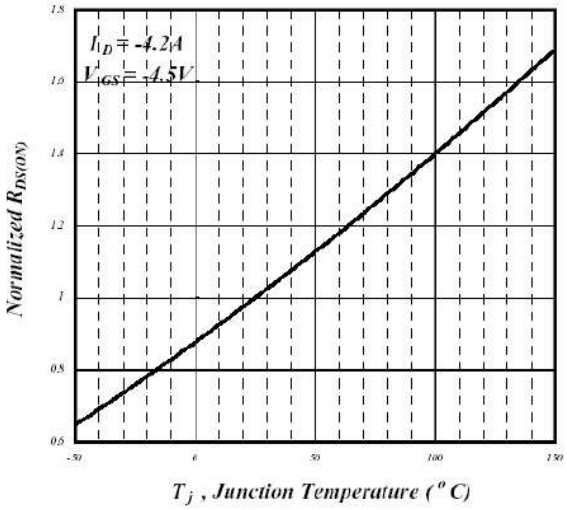

Fig 4. Normalized On-Resistance v.s. Junction Temperature

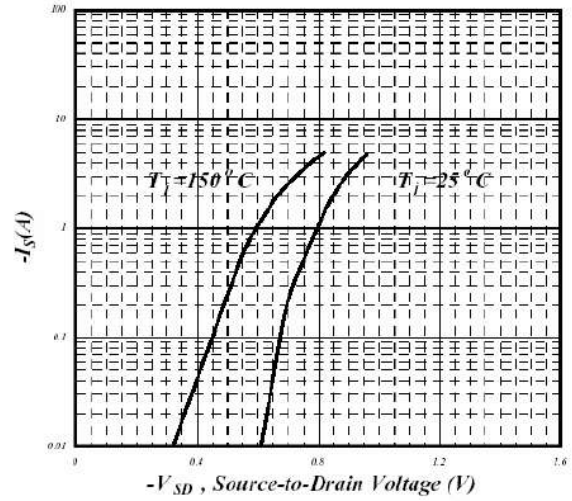

Fig 5. Forward Characteristic of Reverse Diode

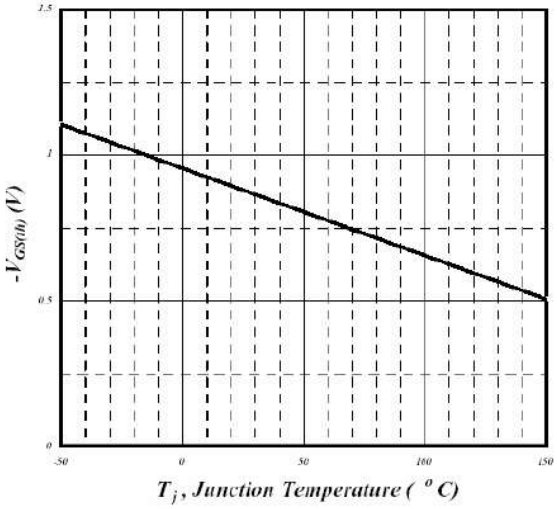

Fig 6. Gate Threshold Voltage v.s. Junction Temperature

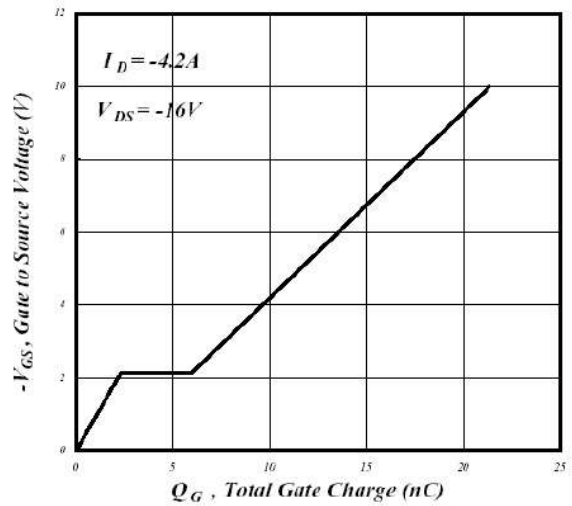

Fig 7. Gate Charge Characteristics

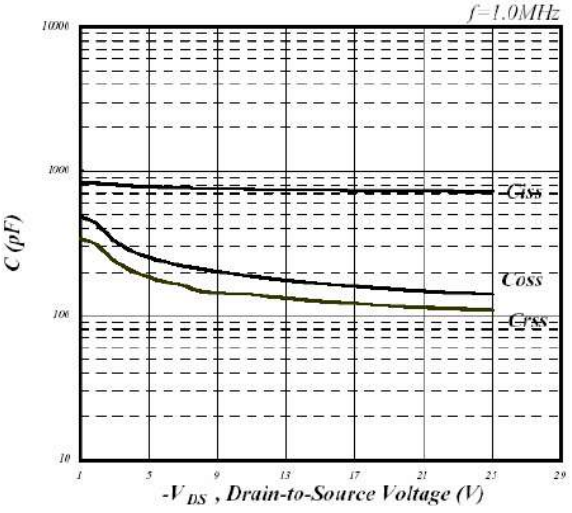

Fig 8. Typical Capacitance Characteristics

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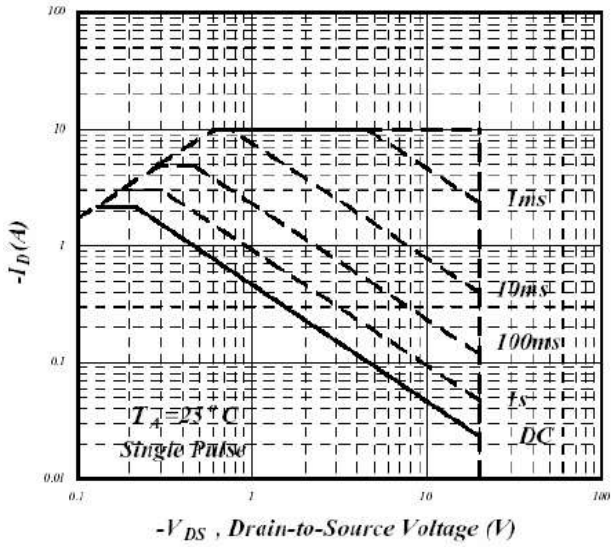

Fig 9. Maximum Safe Operating Area

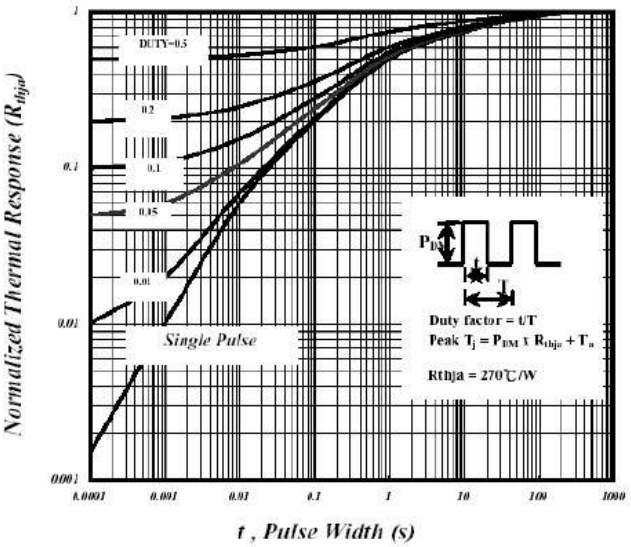

Fig 10. Effective Transient Thermal Impedance

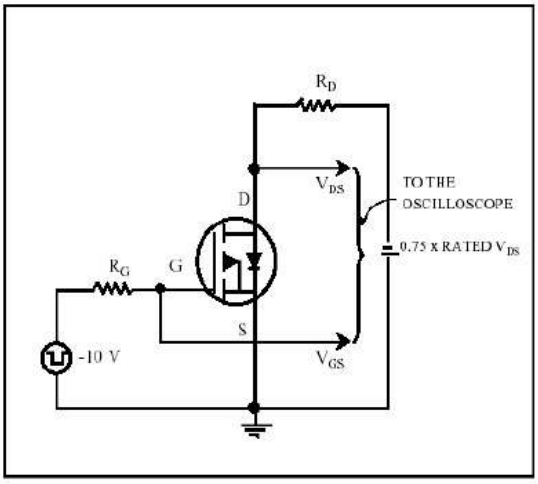

Fig 11. Switching Time Circuit

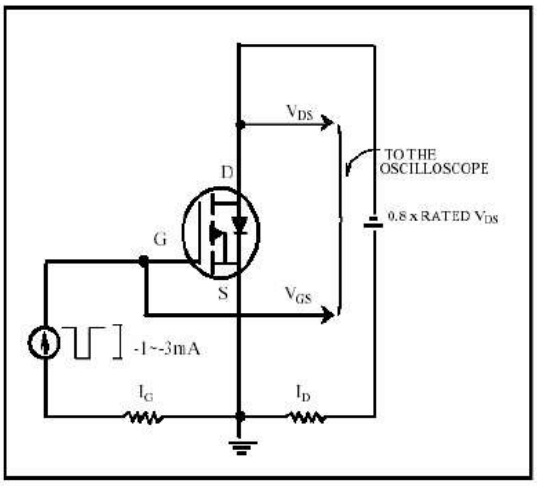

Fig 12. Gate Charge Circuit

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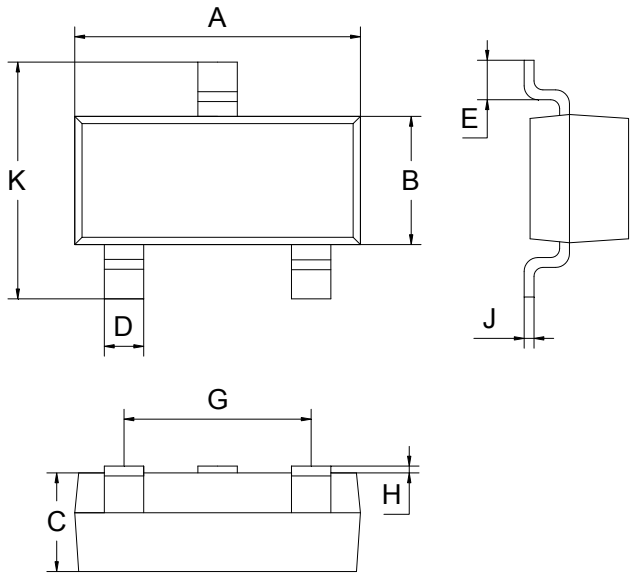
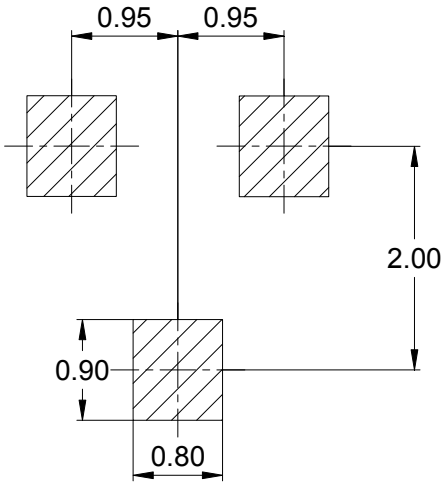
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
BL2311	SOT-23	3000/Tape&Reel