


P-Channel Enhancement Mode Power Mosfet

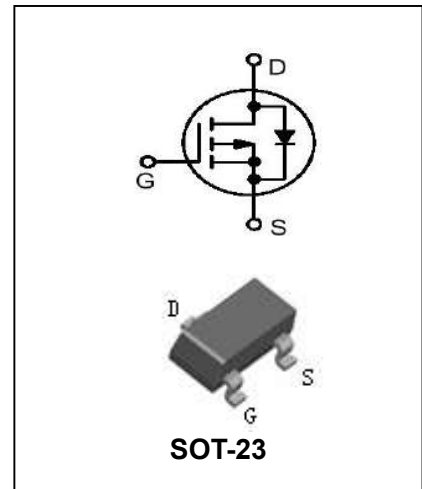
BL2311

FEATURES

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

APPLICATIONS

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



ORDERING INFORMATION

Type No.	Marking	Package Code
BL2311	2311	SOT-23

MAXIMUM RATING @ $T_a=25^{\circ}\text{C}$ 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	$T_A=25^{\circ}\text{C}$ $T_A=70^{\circ}\text{C}$	A
I_{DM}	Pulsed Drain current	-30	A
P_D	Power Dissipation	1.37	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	90	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

P-Channel Enhancement Mode Power Mosfet

BL2311

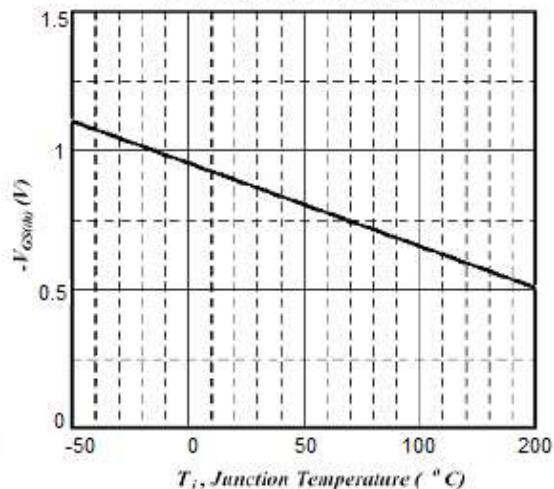
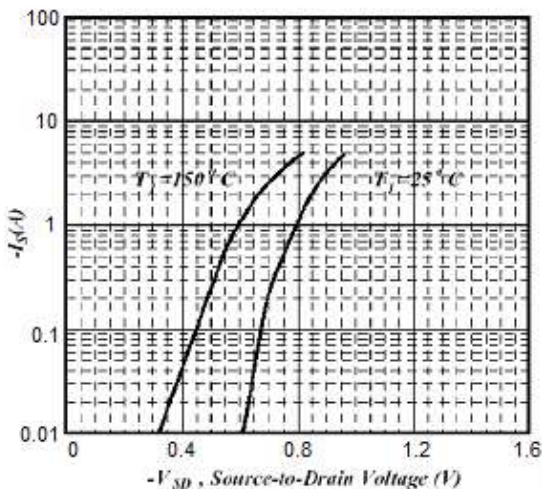
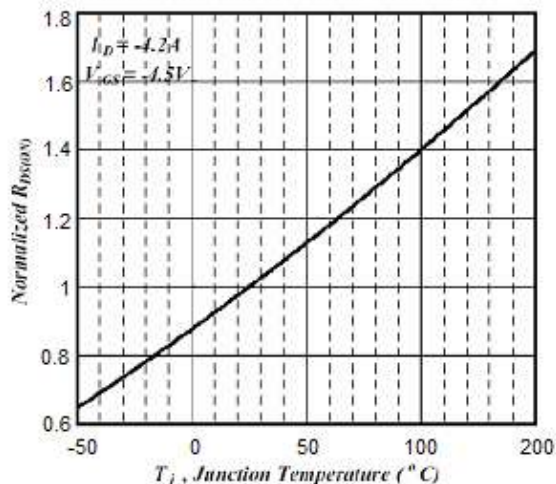
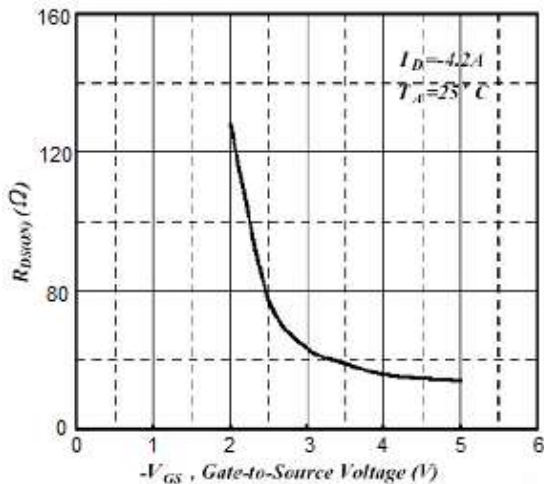
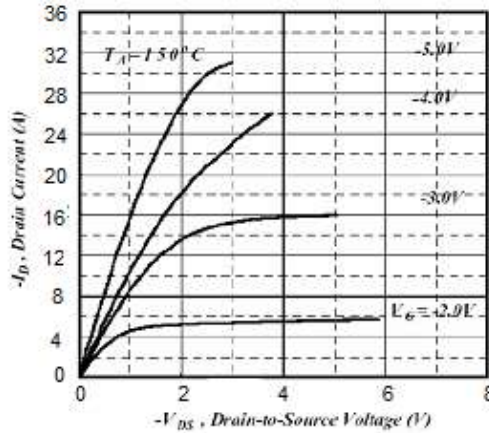
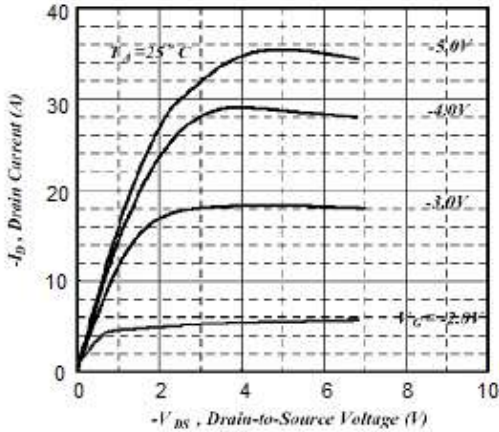
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.5	-0.75	-1.2	
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
On state drain current	$I_{D(ON)}$	$V_{DS}=-5V, V_{GS}=-4.5V$	-30	-	-	A
Drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-4.5A$	-	-	53	m Ω
		$V_{GS}=-4.5V, I_D=-4.2A$	-	-	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
Maximum Body-Diode Continuous Current	I_S				-2	A
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	$t_{D(ON)}$	$V_{DS} = -15V, I_D = -4.2A, R_G = 6\Omega, V_{GS} = -10V, R_D = 3.6\Omega$	-	5.9	-	ns
Rise Time	t_R		-	3.6	-	
Turn-Off Delay Time	$t_{D(OFF)}$		-	32.4	-	
Fall Time	t_F		-	2.6	-	
Reverse Recovery Time	Trr	$I_S=-4.2A, V_{GS}=0$	-	27.7	-	ns
Reverse Recovery Charge	Qrr	$dI/dt=100A/\mu s$	-	22	-	nC

P-Channel Enhancement Mode Power Mosfet

BL2311

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



P-Channel Enhancement Mode Power Mosfet

BL2311

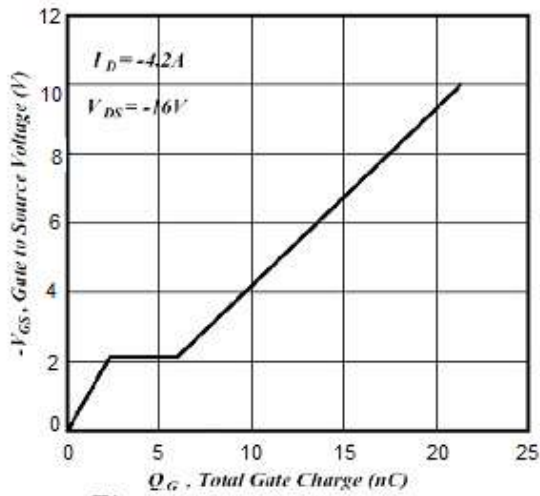


Fig 7. Gate Charge Characteristics

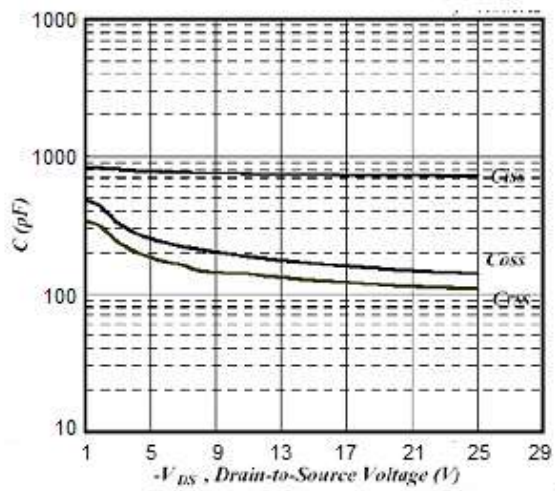


Fig 8. Typical Capacitance Characteristics

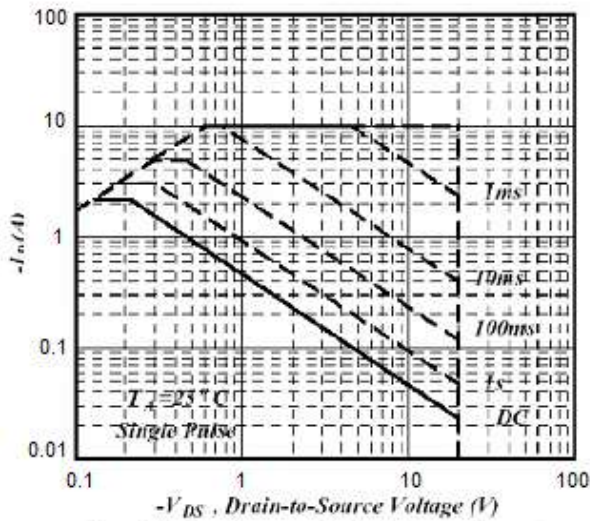


Fig 9. Maximum Safe Operating Area

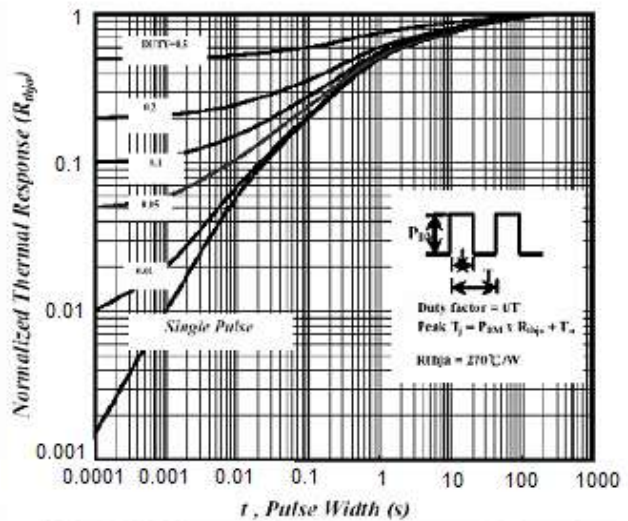


Fig 10. Effective Transient Thermal Impedance

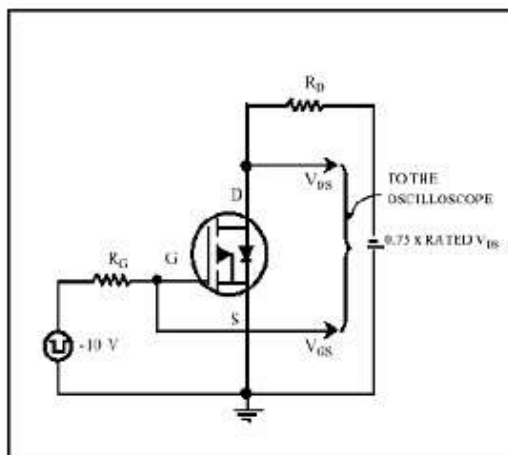


Fig 11. Switching Time Circuit

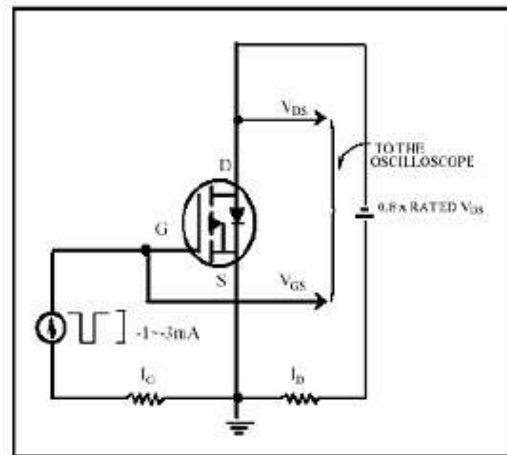


Fig 12. Gate Charge Circuit

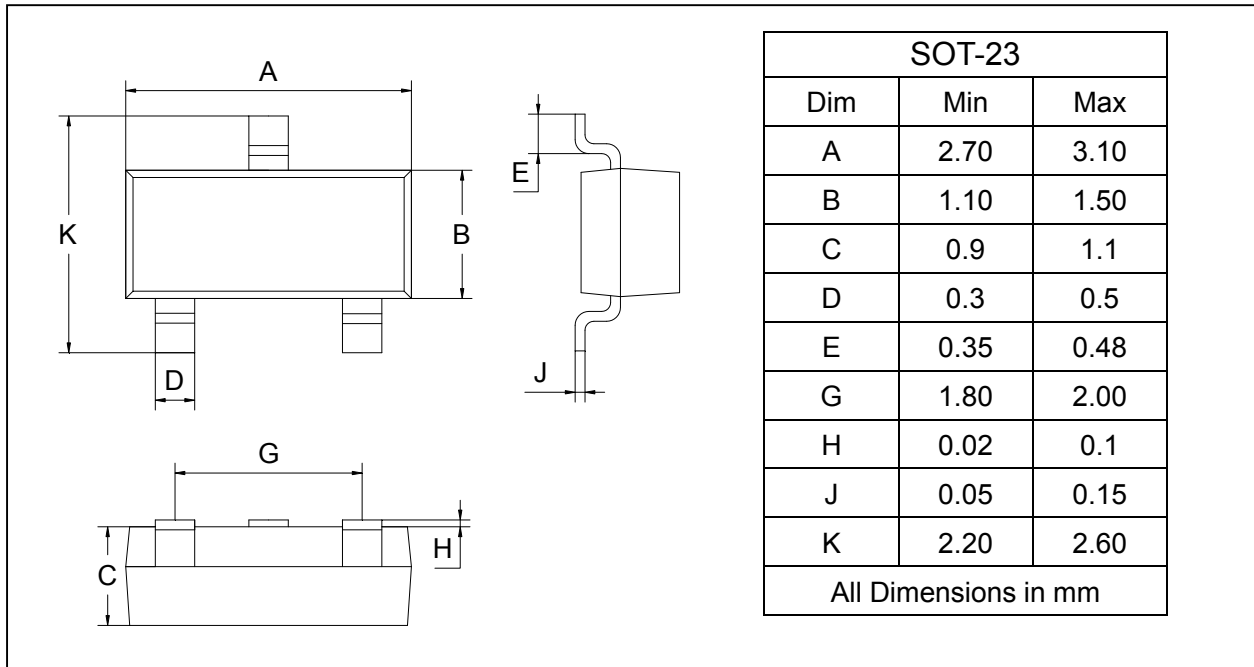
P-Channel Enhancement Mode Power Mosfet

BL2311

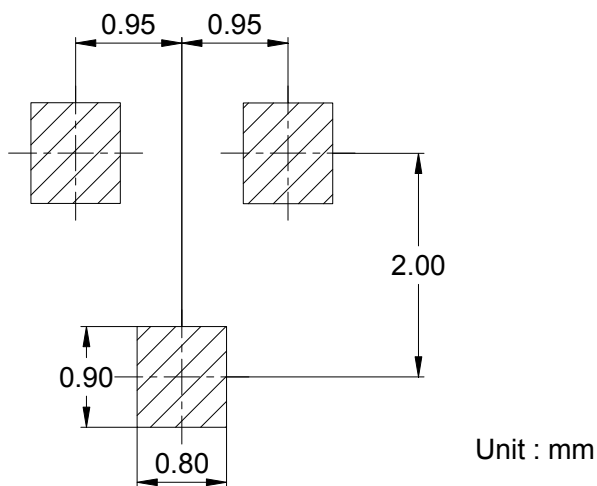
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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