

## N-Channel 30V(D-S) MOSFET

**BL2308**

### FEATURES

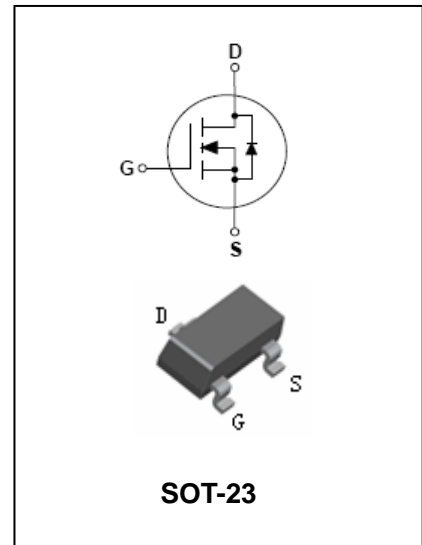
- $R_{DS(ON)} \leq 270m\ \Omega$  @  $V_{GS}=10V$ .
- $R_{DS(ON)} \leq 340m\ \Omega$  @  $V_{GS}=4.5V$ .
- Super high density cell design for extremely low  $R_{DS(ON)}$ .
- Exceptional on-resistance and maximum DC current capability.



Lead-free

### APPLICATIONS

- Power Management in Note book.
- DC/DC Converter.
- Load Switch.



### ORDERING INFORMATION

Type No.	Marking	Package Code
BL2308	2308	SOT-23

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

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage	60	V
$V_{GSS}$	Gate -Source voltage	$\pm 20$	V
$I_D$	Continuous Drain current ( $T_j=150^\circ\text{C}$ )	$T_A=25^\circ\text{C}$	1.5
		$T_A=70^\circ\text{C}$	1.2
$I_{DM}$	Pulsed Drain Current	6	A
$P_D$	Power Dissipation	$T_A=25^\circ\text{C}$	1.3
		$T_A=70^\circ\text{C}$	0.8
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient(Note1)	100	$^\circ\text{C}/\text{W}$
$T_J$	Operating Junction Temperature	-55 to +150	$^\circ\text{C}$

Note:1.The Device Mounted on  $1\text{in}^2$  FR4 board with 2 oz copper.



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	2	3	
Gate-body Leakage	$I_{GSS}$	Forward $V_{DS}=0V, V_{GS}=20V$	-	-	100	nA
Reverse		Reverse $V_{DS}=0V, V_{GS}=-20V$	-	-	-100	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$	-	-	1	$\mu A$
Static Drain-Source on-resistance(Note1)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1.5A$	-	230	270	m $\Omega$
		$V_{GS}=4.5V, I_D=1.0A$	-	275	340	
Drain Forward Voltage(Note2)	$V_{SD}$	$V_{GS}=0V, I_{SD}=1A$	-	0.8	1.2	V
Total Gate Charge	$Q_g$	$V_{DS}=25V, V_{GS}=10V, I_D=1.5A$	-	12	-	nC
Total Gate Charge	$Q_g$	$V_{DS}=25V, V_{GS}=4.5V, I_D=1.5A$	-	6.6	-	
Gate-Source Charge	$Q_{gs}$		-	2.6	-	
Gate-Drain Charge	$Q_{gd}$		-	3.3	-	
Gate Resistance	$R_g$	$V_{DS}=0V, V_{GS}=0V, f=1.0MHz$	-	0.8	-	$\Omega$
Input Capacitance	$C_{ISS}$	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$	-	326	-	pF
Output Capacitance	$C_{OSS}$		-	38	-	
Reverse Transfer Capacitance	$C_{RSS}$		-	11	-	
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=50V, I_D=0.2A,$ $R_L=33\Omega, V_{GEN}=10V,$ $R_{GEN}=6\Omega$	-	10	-	ns
Turn-On Rise Time	$T_r$		-	6	-	
Turn-Off Delay Time	$t_{D(OFF)}$		-	30	-	
Turn-Off Rise Time	$T_f$		-	4	-	

Note: 1. Pulse test: pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ , guaranteed by design, not subject to production testing.

2. Matsuki reserves the right to improve product design, functions and reliability without notice.

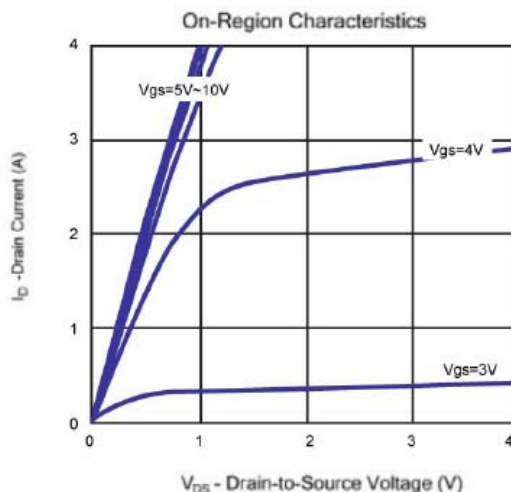
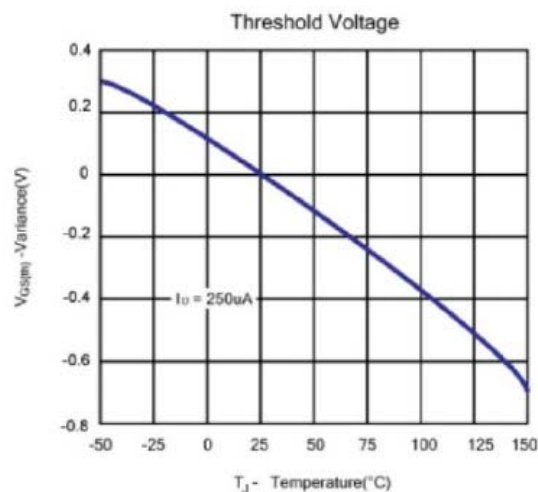
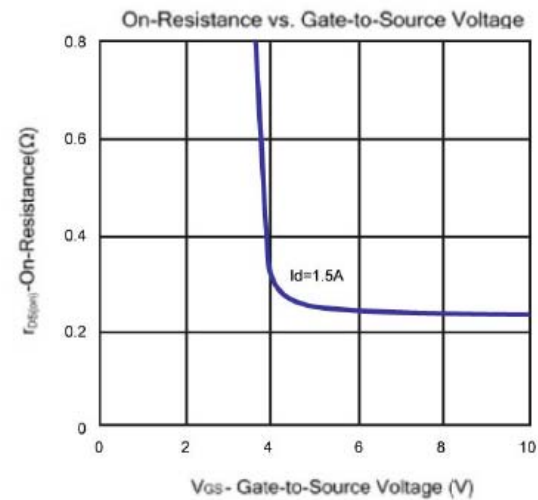
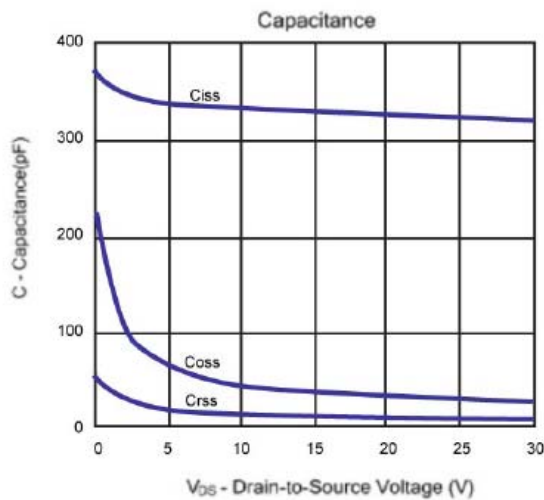
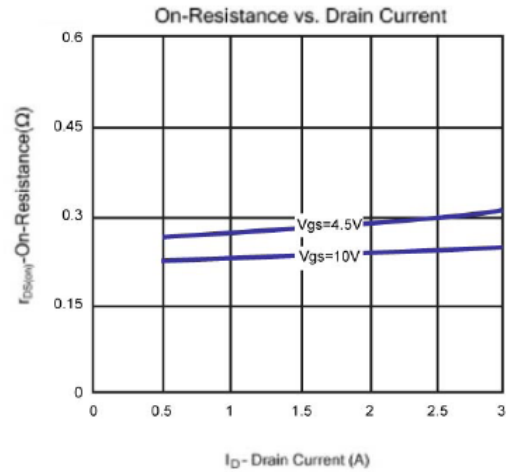
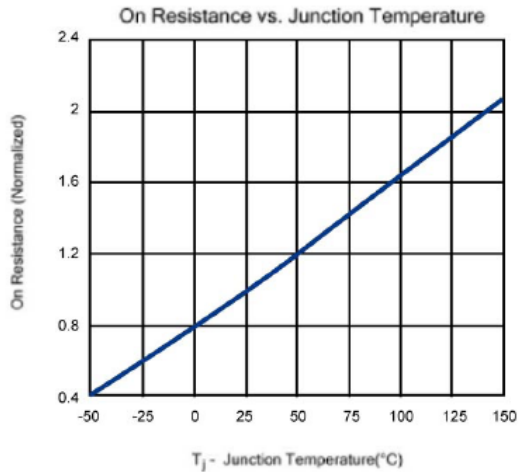


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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

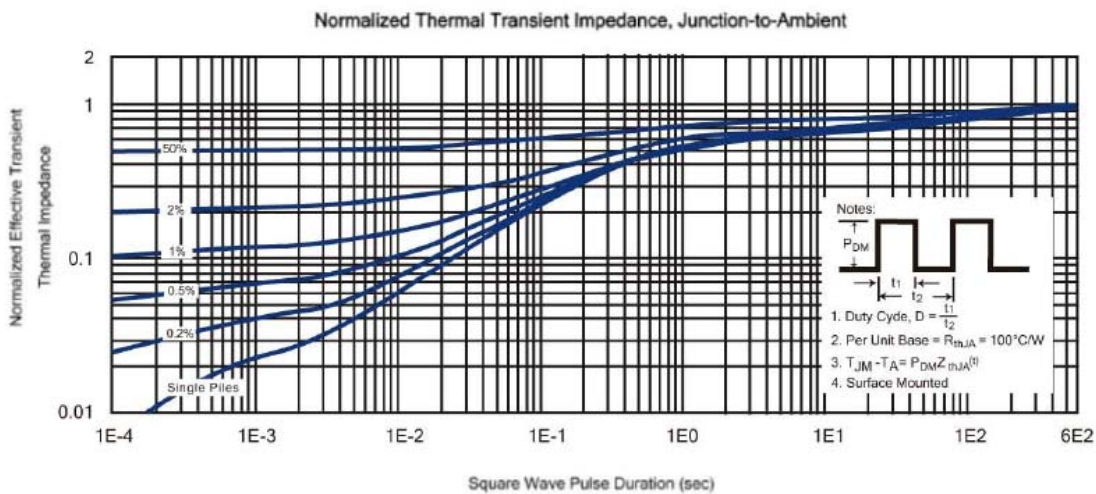
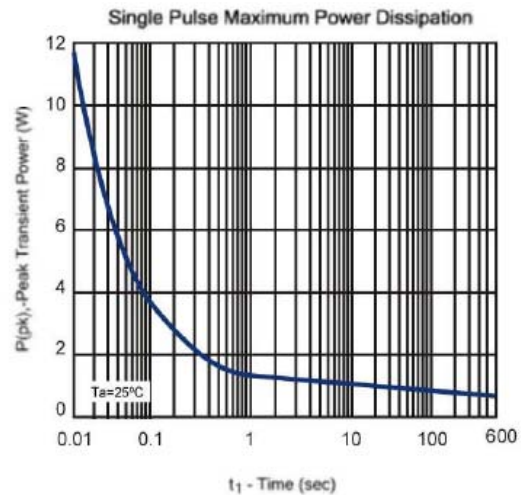
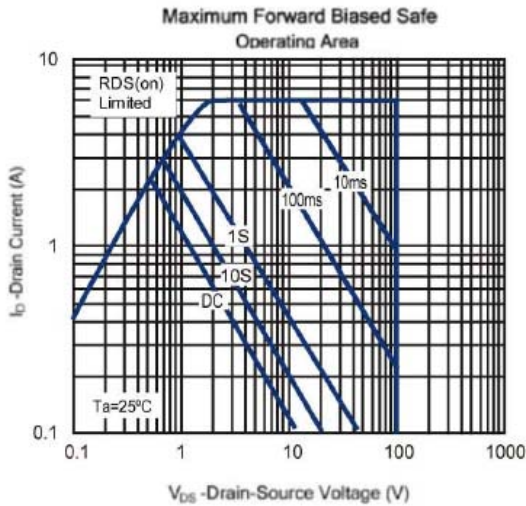
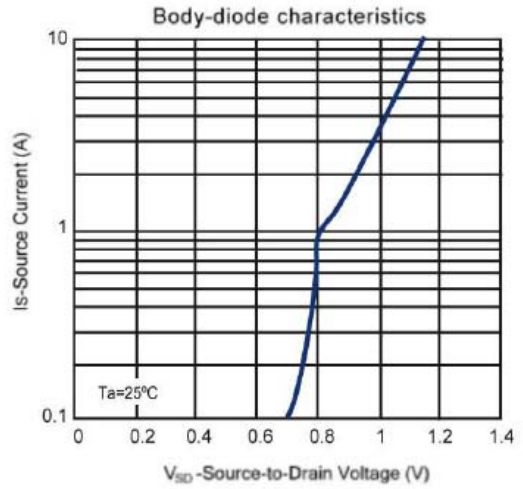
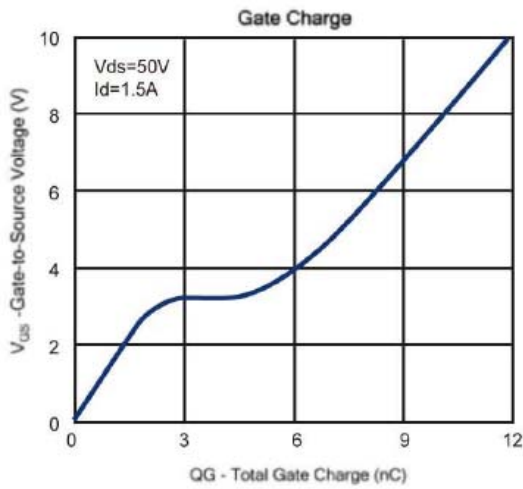
### Typical Characteristics (T<sub>J</sub> =25°C Noted)





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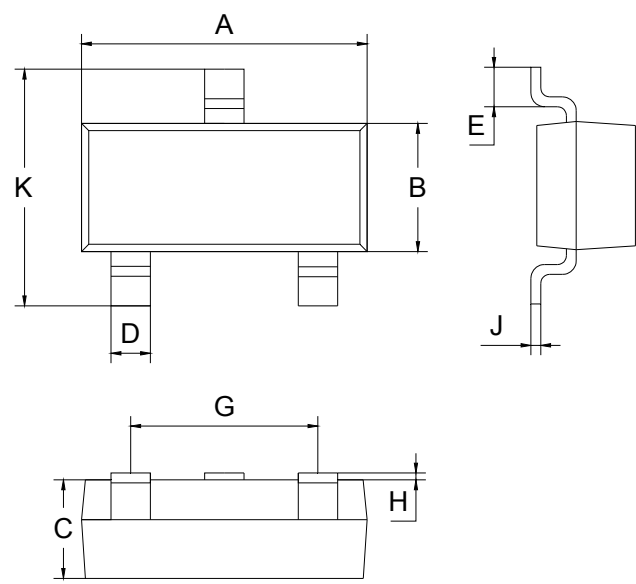
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## PACKAGE OUTLINE

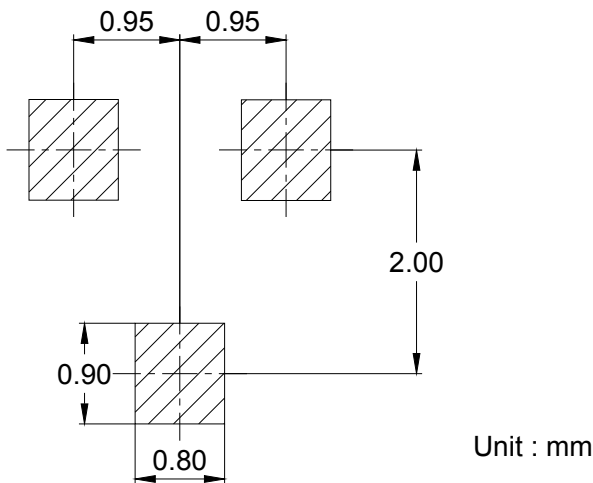
Plastic surface mounted package

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



## PACKAGE INFORMATION

Device	Package	Shipping
BL2308	SOT-23	3000/Tape&Reel