

N-Channel 60V(D-S) MOSFET

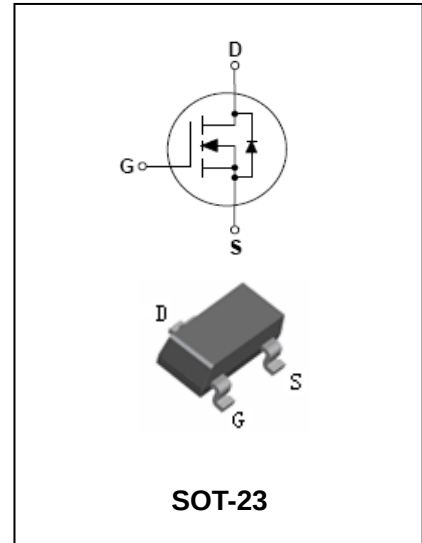
BL2308

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.
- Electrostatic Sensitive Devices.
- MSL 1



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 @ Ta=25°C unless otherwise specified

Symbol	Parameter		Value	Units
V_{DSS}	Drain-Source voltage		60	V
V_{GSS}	Gate -Source voltage		± 20	V
I_D	Continuous Drain current ($T_J=150^\circ\text{C}$)	$T_A=25^\circ\text{C}$	1.5	A
		$T_A=70^\circ\text{C}$	1.2	
I_{DM}	Pulsed Drain Current		6	A
P_D	Power Dissipation	$T_A=25^\circ\text{C}$	1.3	W
		$T_A=70^\circ\text{C}$	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 1in² 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 Forward Reverse	I_{GSS}	$V_{DS}=0V, V_{GS}=20V$ $V_{DS}=0V, V_{GS}=-20V$	- -	- -	100 -100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
Static Drain-Source on-resistance(Note1)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1.5A$ $V_{GS}=4.5V, I_D=1.0A$	- -	230 275	270 340	m Ω
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	-	Ω
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.

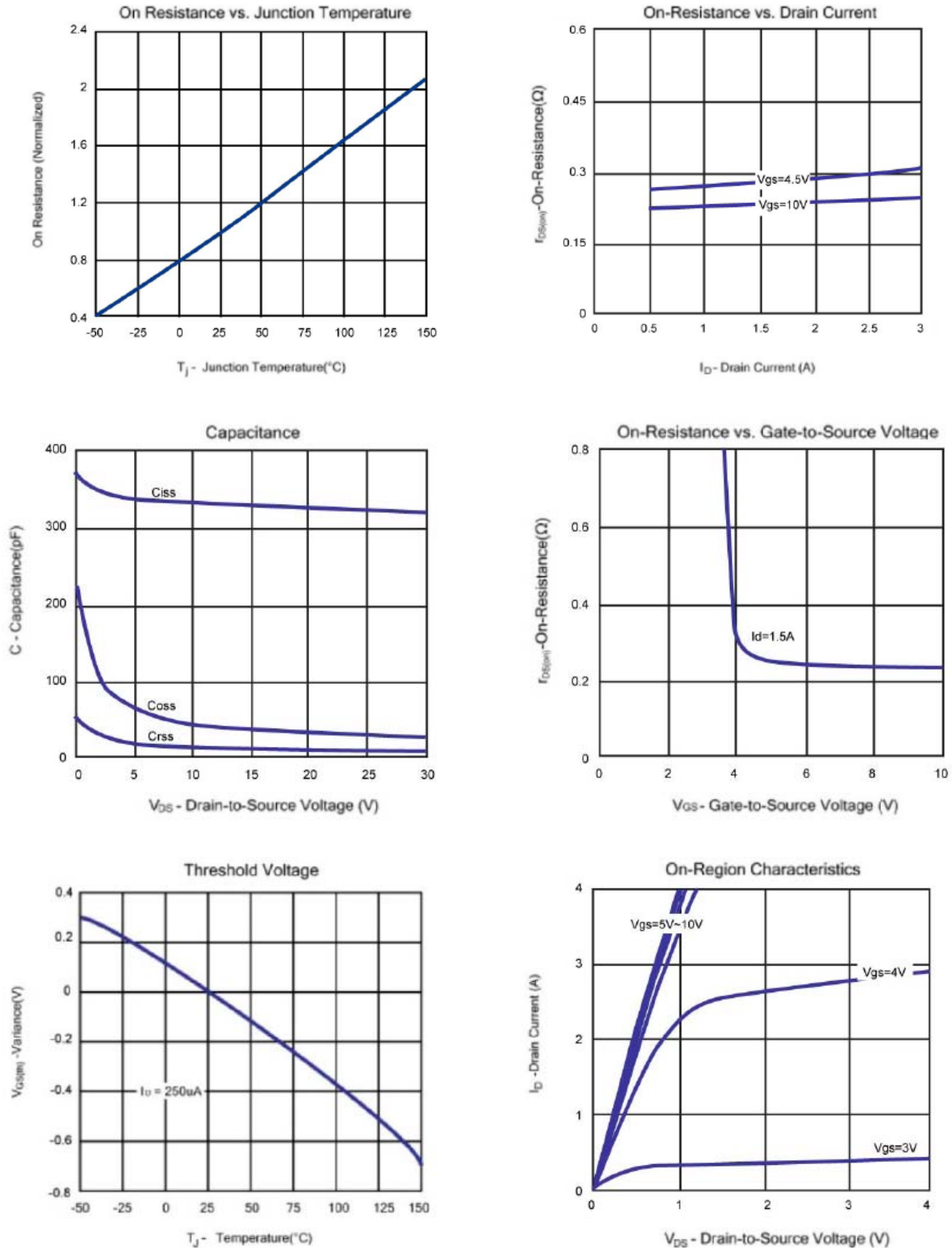
2. Matsuki reserves the right to improve product design, functions and reliability without notice.

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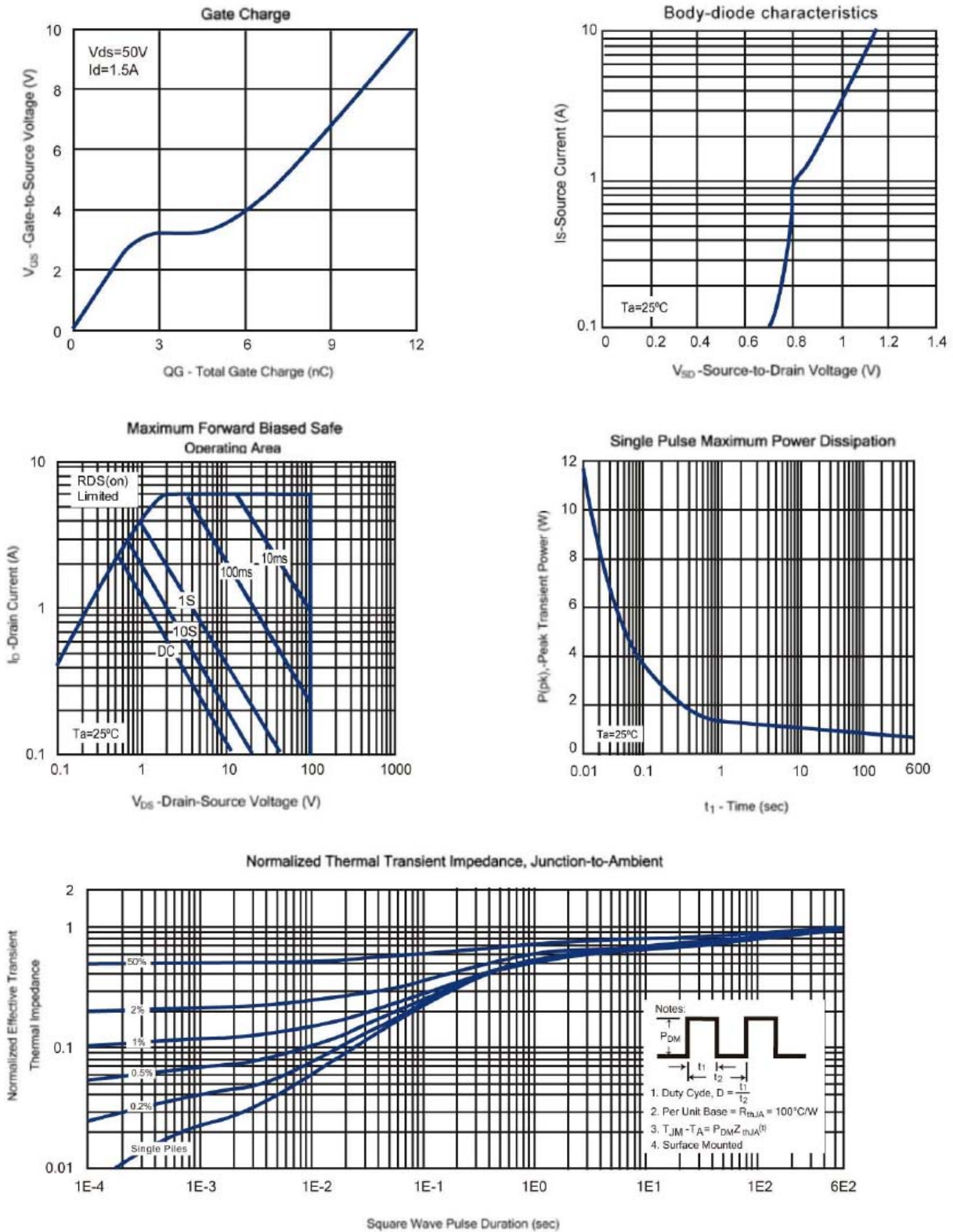
TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

Typical Characteristics ($T_J=25^\circ\text{C}$ Noted)



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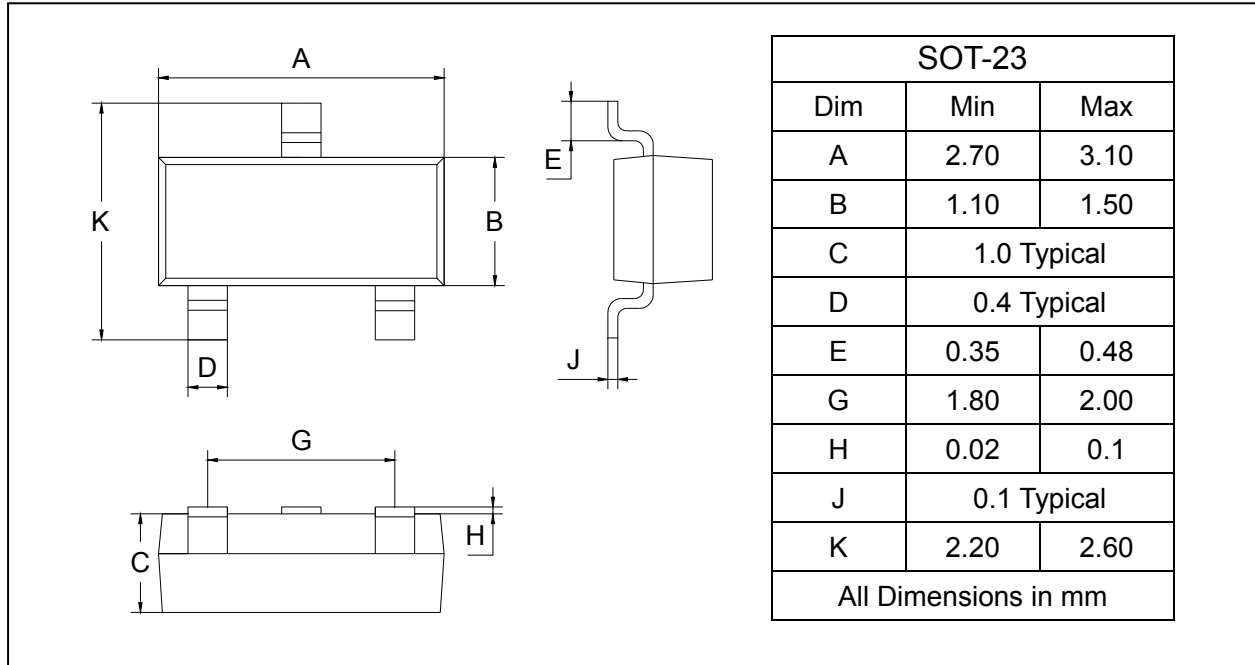
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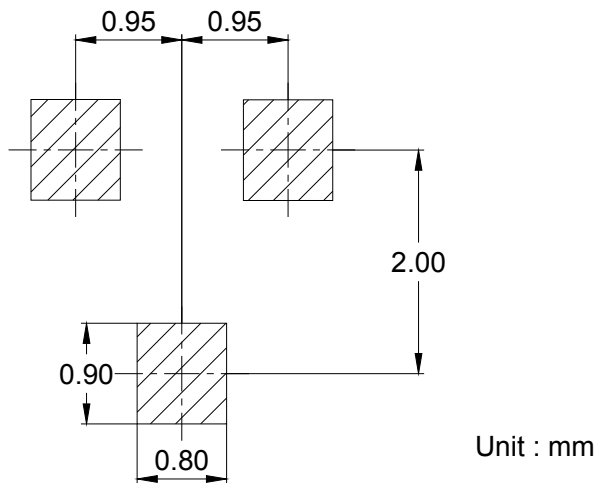
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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