



N-Channel Enhancement Mode Field Effect Transistor

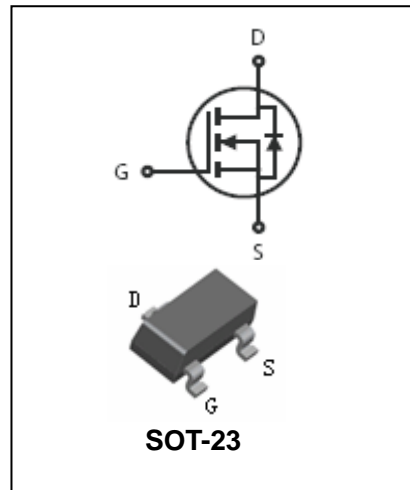
BL2300

FEATURES

- $V_{DS}=20V, R_{DS(ON)}=40m @V_{GS}=4.5V, I_D=5.0A$
- $V_{DS}=20V, R_{DS(ON)}=60m @V_{GS}=2.5V, I_D=4.0A$
- $V_{DS}=20V, R_{DS(ON)}=75m @V_{GS}=1.8V, I_D=1.0A$



Lead-free



APPLICATIONS

- Power Management in Note book.
- Portable Equipment.
- Battery Powered System.
- Load Switch.
- DSC.

ORDERING INFORMATION

Type No.	Marking	Package Code
BL2300	C009T	SOT-23

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

Symbol	Parameter	Value	Units
V_{DSS}	Drain-Source voltage	20	V
V_{GSS}	Gate -Source voltage	± 10	V
I_D	Maximum Drain current $T_A=25^{\circ}C$	3.8	A
I_{DM}	Pulsed Drain current	15	A
P_D	Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	100	$^{\circ}C/W$
T_J, T_{stg}	Operating Junction and Storage Temperature	-55 to 150	$^{\circ}C$

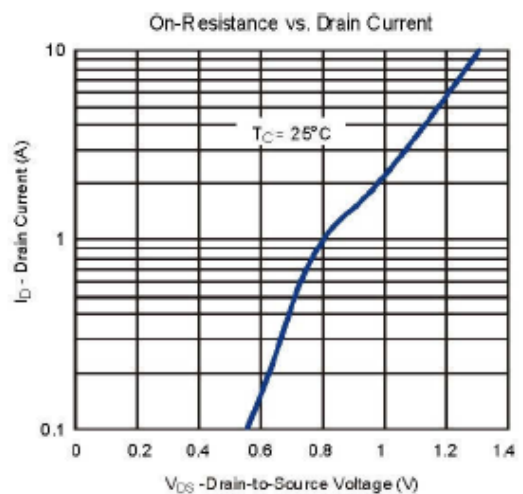
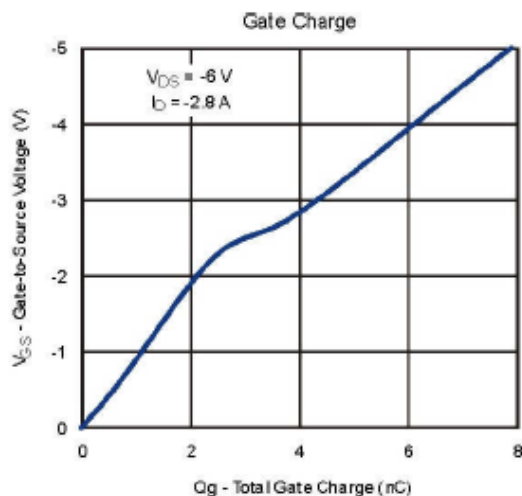


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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6	0.78	1.5	V
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=10V$	-	-	100	nA
		$V_{DS}=0V, V_{GS}=-10V$	-	-	-100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Drain-Source on-resistance	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=5.0A$	-	32	40	m Ω
		$V_{GS}=2.5V, I_D=4.0A$	-	50	60	
		$V_{GS}=1.8V, I_D=1.0A$	-	62	75	
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=1.25A$	-	0.825	1.2	V
On-State Drain Current	$I_{D(ON)}$	$V_{DS}=5V, V_{GS}=4.5V$	18	-	-	A
Forward Transconductance	gF	$V_{DS}=5V, I_D=5A$	5	-	-	S
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=4.5V, I_D=3.5A$	-	16.8	-	nC
Gate-Source Charge	Qgs		-	2.5	-	
Gate-Drain Charge	Qgd		-	5.4	-	
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$	-	7.5	-	Ω
Input capacitance	C_{ISS}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$	-	888	-	pF
Output capacitance	C_{OSS}		-	144	-	
Reverse transfer capacitance	C_{RSS}		-	115	-	
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=10V, R_L=10\Omega, I_D=1A, V_{GS}=4.5V, R_{GEN}=6\Omega$	-	31.8	-	ns
Rise Time	t_R		-	14.5	-	
Turn-Off Delay Time	$t_{D(OFF)}$		-	50.3	-	
Fall Time	t_F		-	31.9	-	





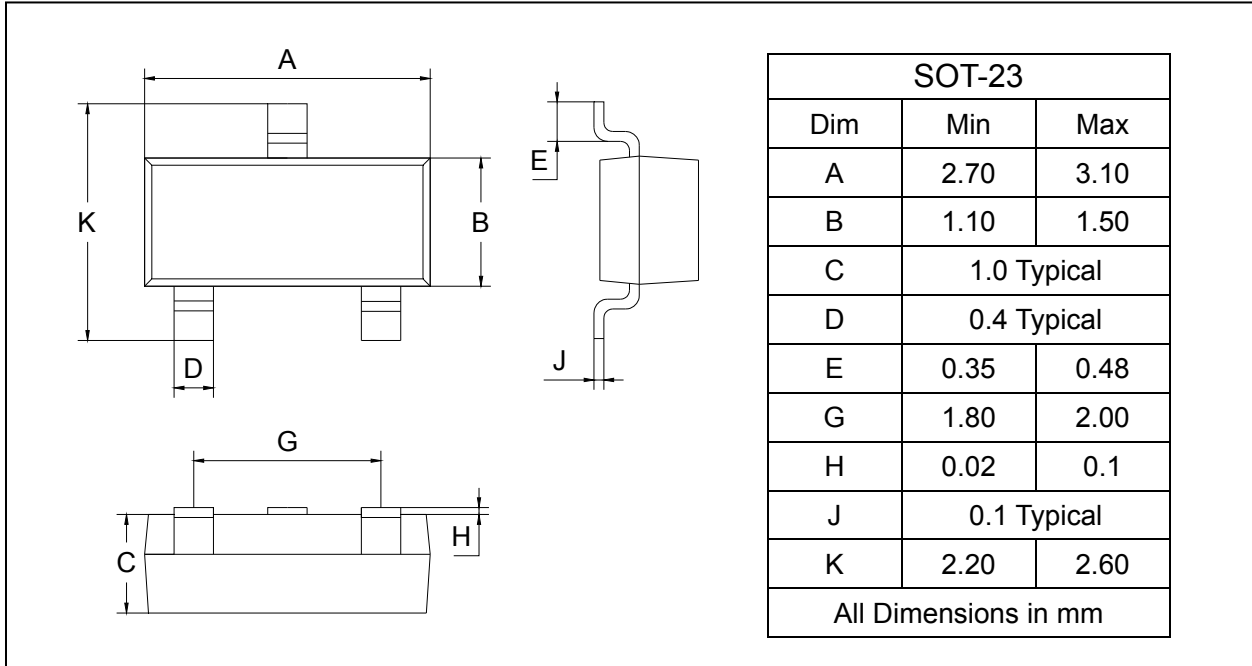
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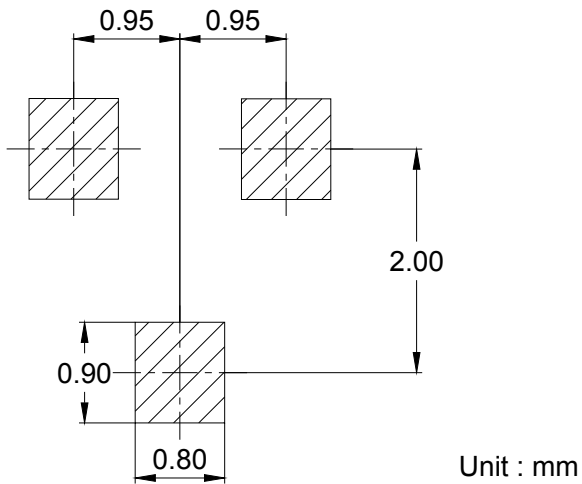
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BL2300	SOT-23	3000/Tape&Reel