

N-Channel Enhancement Mode Field Effect Transistor

BL2302

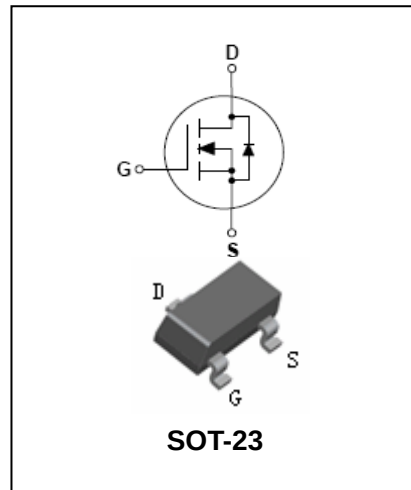
FEATURES

- 20V/3.6A, $R_{DS(ON)}=85m_{\Omega}$ @ $V_{GS}=4.5V$.
- 20V/3.1A, $R_{DS(ON)}=115m_{\Omega}$ @ $V_{GS}=2.5V$. Lead-free
- Super high density cell design for extremely low $R_{DS(ON)}$.
- Exceptional on-resistance and maximum DC current capability.



APPLICATIONS

- Power Management in Notebook.
- Portable Equipment.
- DC/DC Converter.



ORDERING INFORMATION

Type No.	Marking	Package Code
BL2302	A2T	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	± 8	V
I_D	Maximum Drain current $T_A=25^{\circ}C$ $T_A=70^{\circ}C$	2.8 2.2	A
I_{DM}	Pulsed Drain current	10	A
P_D	Power Dissipation	1.25	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	105	$^{\circ}C/W$
T_J	Operating Junction Temperature	150	$^{\circ}C$



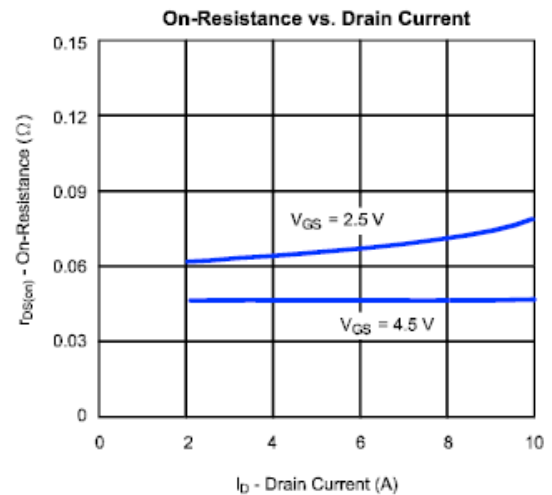
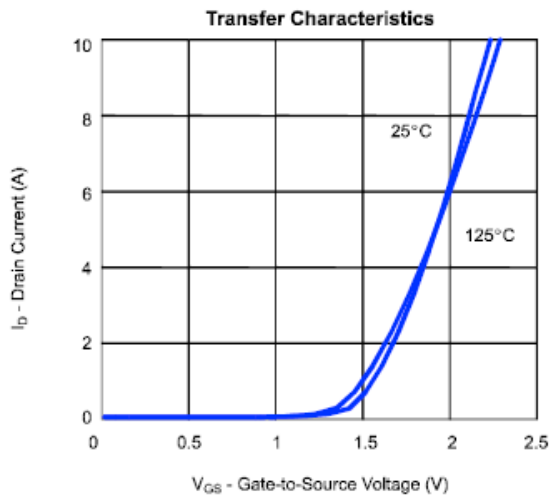
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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

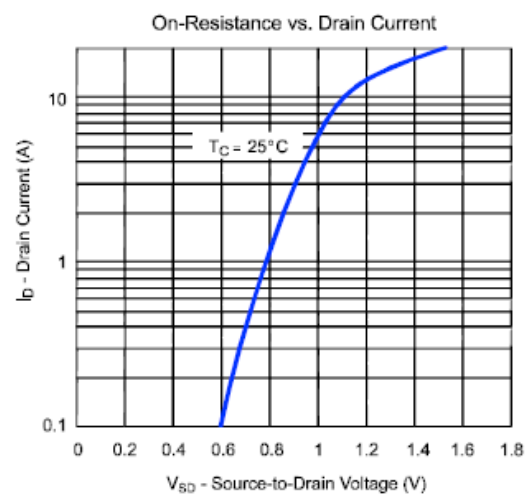
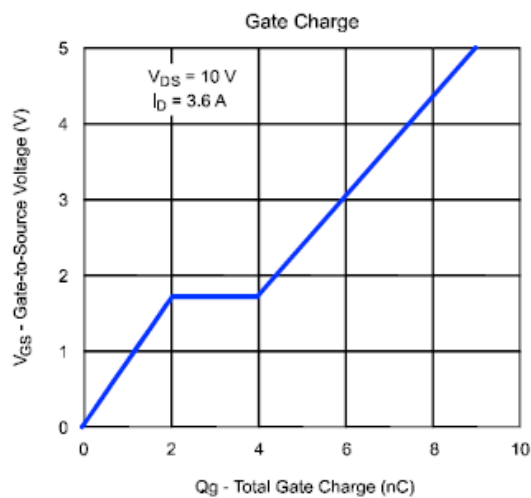
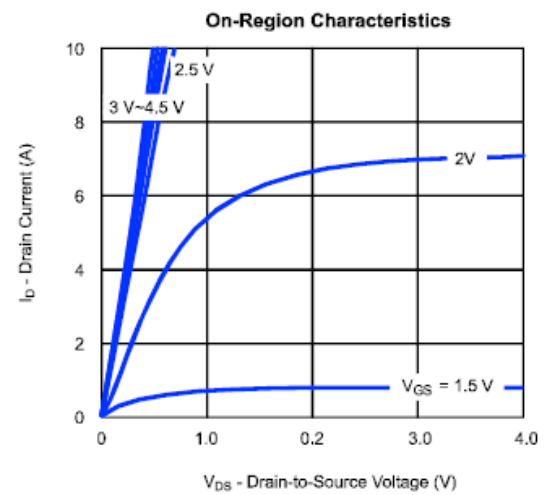
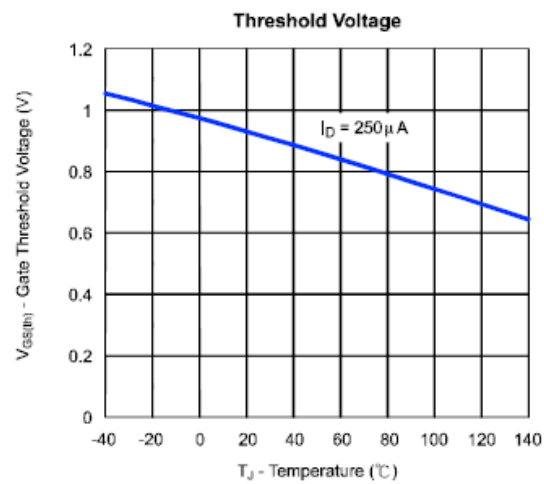
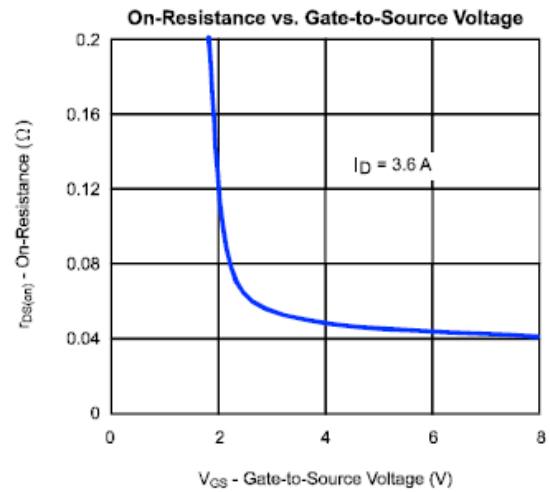
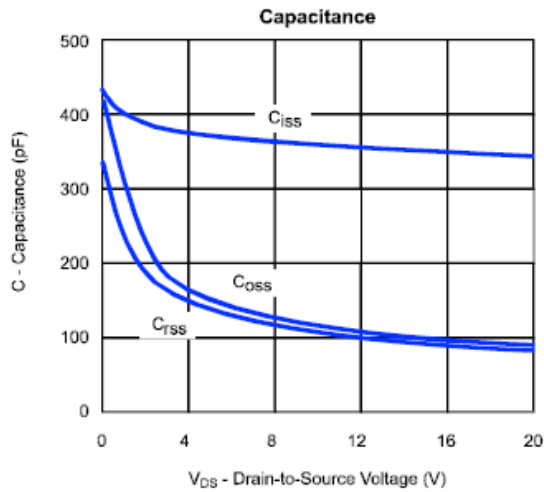
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6	0.9	1.2	
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=8V$	-	-	100	nA
		$V_{DS}=0V, V_{GS}=-8V$	-	-	-100	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=20V, V_{GS}=0V, T_j=55^\circ C$	-	-	10	
On-state Drain Current	$I_{D(on)}$	$V_{GS}=4.5V, V_{DS}\geq 5.0V$	6			A
		$V_{GS}=2.5V, V_{DS}\geq 5.0V$	4			
Drain-Source on-resistance	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=3.6A$	-	55	85	m Ω
		$V_{GS}=2.5V, I_D=3.1A$	-	65	115	
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=1A$	-	0.75	1.2	V
Total Gate Charge	Qg	$V_{DS}=10V, V_{GS}=4.5V, I_D=3.6A$	-	9	-	nC
Gate-Source Charge	Qgs		-	2.2	-	
Gate-Drain Charge	Qgd		-	3	-	
Input capacitance	C_{ISS}	$V_{DS}=10V, V_{GS}=0V, f=1.0MHz$	-	350	-	pF
Output capacitance	C_{OSS}		-	100	-	
Reverse transfer capacitance	C_{RSS}		-	90	-	
Turn-On Delay Time	$t_{D(on)}$	$V_{DD} = 10V, I_D = 3.6A,$ $R_L = 2.8\Omega, V_{GEN} = 4.5V,$ $R_{GEN} = 6\Omega$	-	9	-	ns
Rise Time	t_R		-	23	-	
Turn-Off Delay Time	$t_{D(off)}$		-	38	-	
Fall Time	t_F		-	3	-	

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



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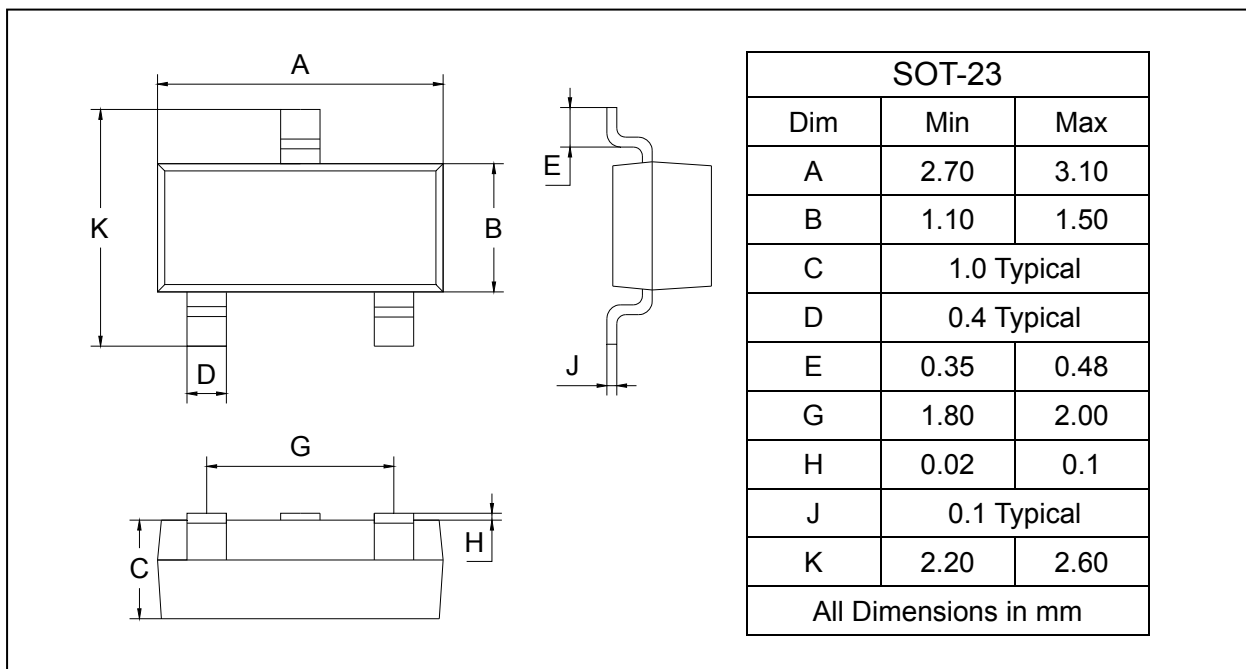
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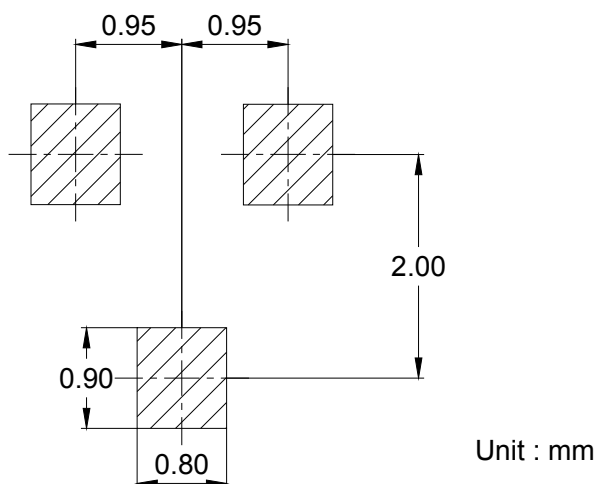
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BL2302	SOT-23	3000/Tape&Reel