

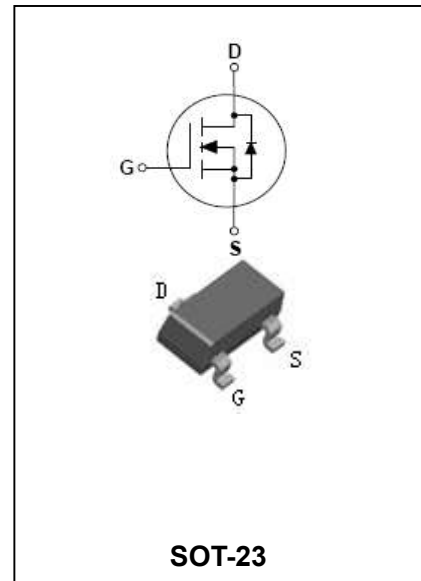


N-Channel Enhancement Mode Field Effect Transistor

BL2302

FEATURES

- 20V/3.6A, RDS(ON)=85m_@VGS=4.5V. 
- 20V/3.1A, RDS(ON)=115m_@VGS=2.5V. Lead-free
- Super high density cell design for extremely low RDS(ON).
- Exceptional on-resistance and maximum DC current capability.
- Electrostatic Sensitive Devices. 
- MSL 1.



APPLICATIONS

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

ORDERING INFORMATION

Type No.	Marking	Package Code
BL2302□	2302	SOT-23

□: none is for Lead Free package;
“G” is for Halogen Free package.

MAXIMUM RATING @ Ta=25°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°C T _A =70°C	2.8 2.2	A
I _{DM}	Pulsed Drain current	10	A
P _D	Power Dissipation	1.25	W
R _{θJA}	Thermal resistance, Junction-to-Ambient	105	°C/W
T _J	Operating Junction Temperature	150	°C

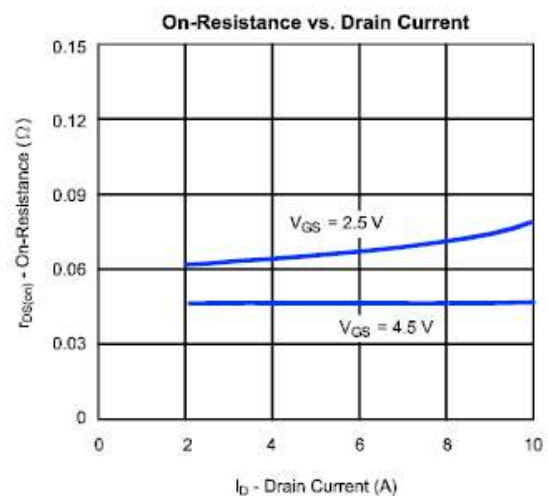
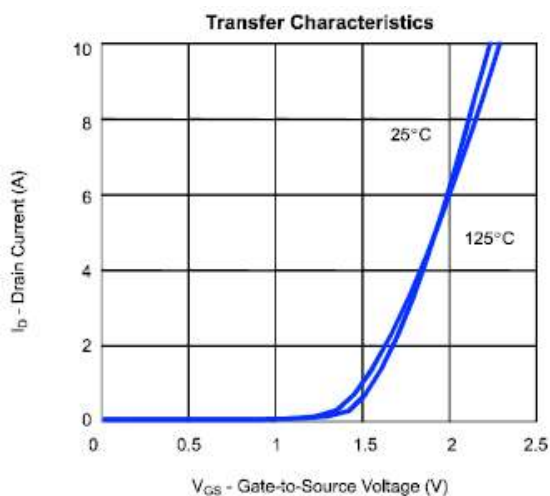
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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

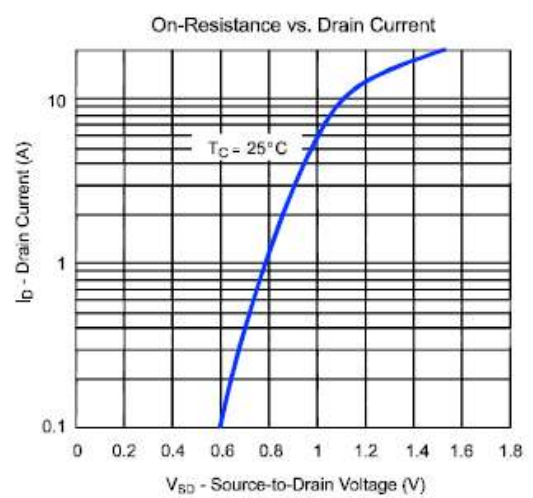
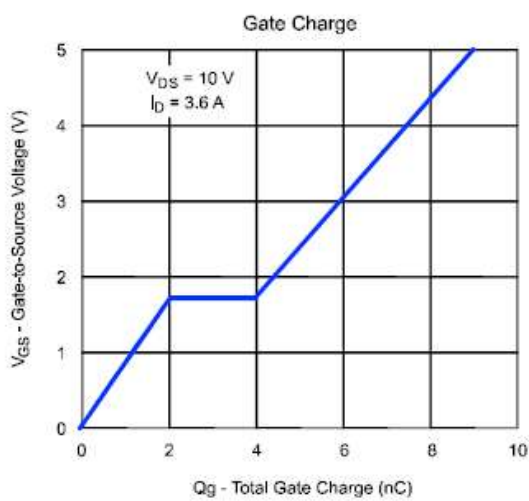
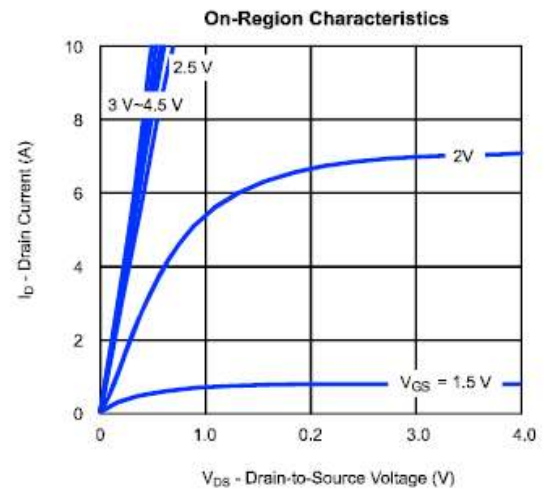
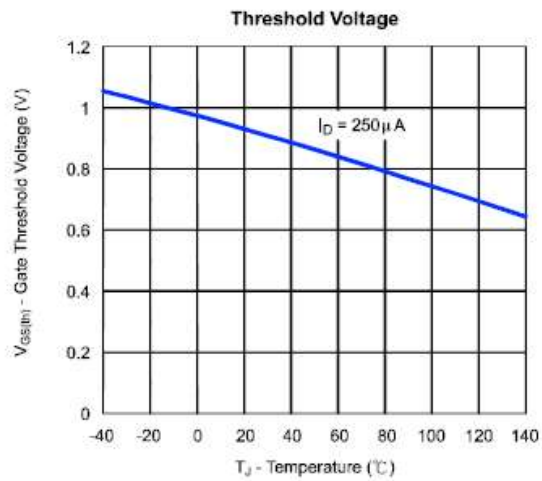
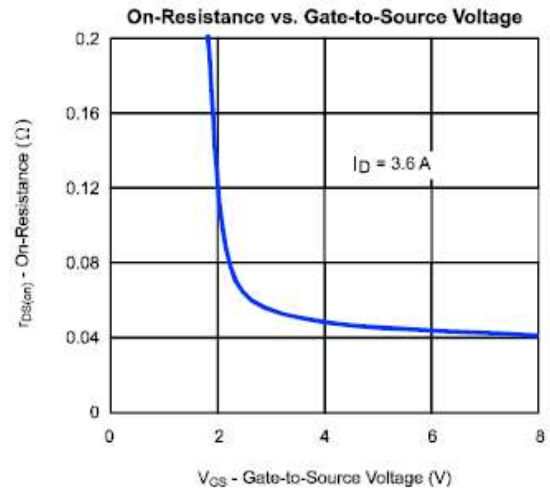
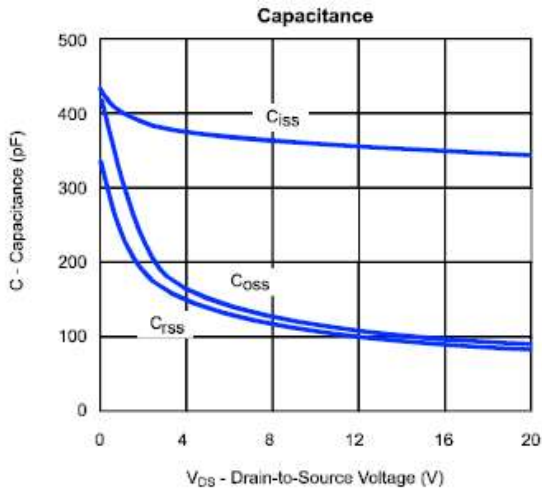
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.6	0.9	1.2	V
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=8V$	-	-	100	nA
		$V_{DS}=0V, V_{GS}=-8V$	-	-	-100	
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	$R_{DS(on)}$	$V_{GS}=4.5V, I_D=2.9A$	-	-	45	m Ω
		$V_{GS}=2.5V, I_D=2.5A$	-	-	59	
Diode forward voltage	V_{SD}	$V_{GS}=0V, I_S=1A$	-	0.75	1.2	V
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=3.6A$	-	9	-	nC
Gate-Source Charge	Q_{gs}		-	2.2	-	
Gate-Drain Charge	Q_{gd}		-	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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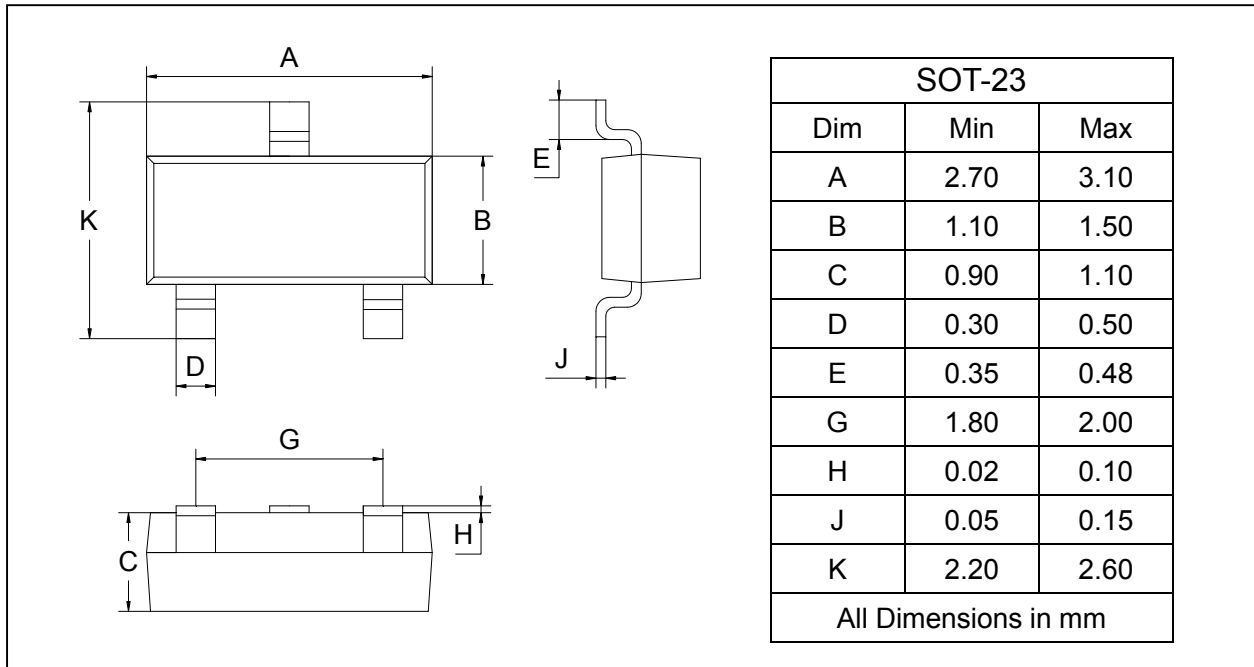
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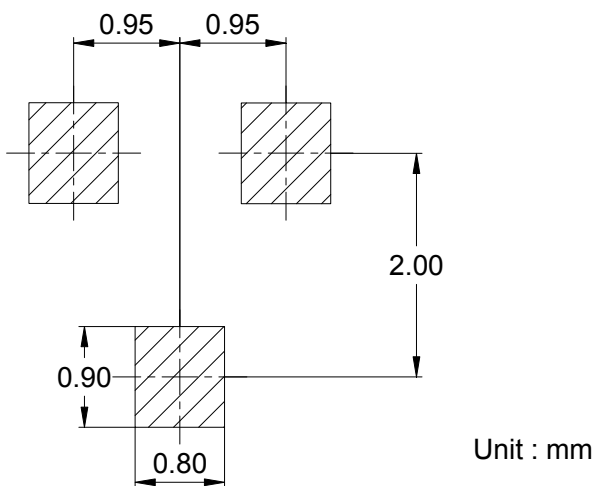
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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