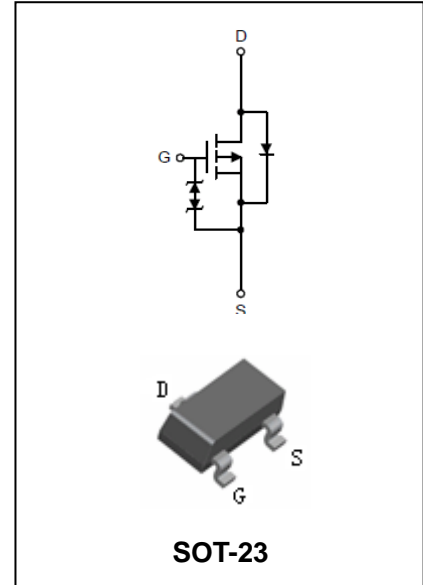


## P-Channel Enhancement Mode Field Effect Transistor BL2303

### FEATURES

- Electrostatic Sensitive Devices.
- $V_{DS} (V) = -30V$
- $I_D = -2.7A (V_{GS} = -10V)$
- $R_{DS(ON)} < 190m\Omega (V_{GS} = -10V)$   
 $R_{DS(ON)} < 330m\Omega (V_{GS} = -4.5V)$



### APPLICATIONS

- P-channel enhancement mode effect transistor.
- Switching application.

### ORDERING INFORMATION

Type No.	Marking	Package Code
BL2303	2303	SOT-23

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

Symbol	Parameter	Value	Units
$V_{DSS}$	Drain-Source voltage	-30	V
$V_{GSS}$	Gate -Source voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	@ $T_C=25^\circ C$ -2.7 @ $T_C=70^\circ C$ -2.2	A
$I_{DM}$	Pulsed Drain Current	-10	A
$P_D$	Power Dissipation	@ $T_C=25^\circ C$ 2.3 @ $T_C=70^\circ C$ 1.5 @ $T_A=25^\circ C$ 1.0 @ $T_A=70^\circ C$ 0.7	W
$R_{\theta JA}$	Thermal resistance, Junction-to-Ambient	120	$^\circ C/W$
$T_J, T_{stg}$	Junction and Storage Temperature	-55 to +150	$^\circ C$

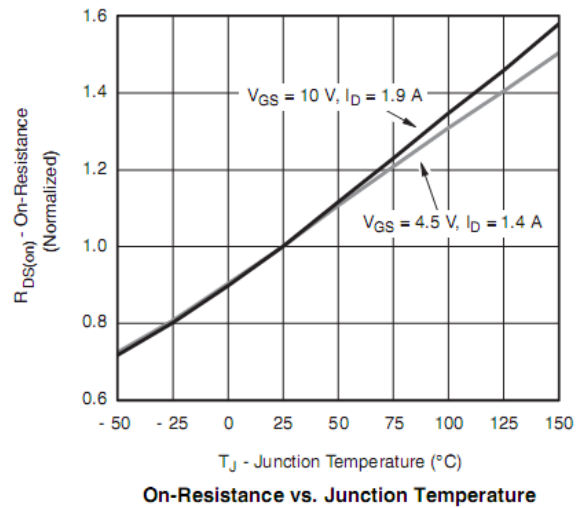
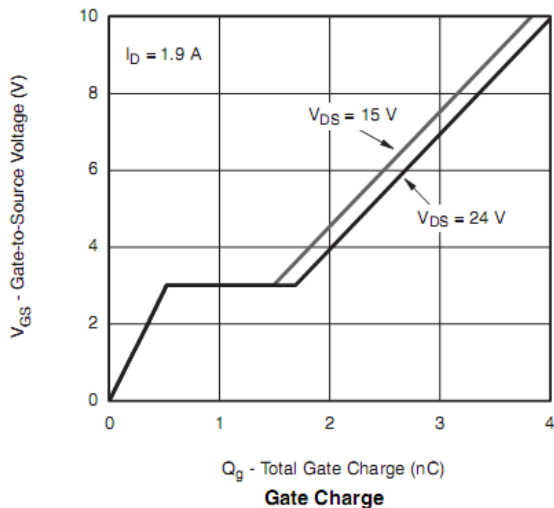
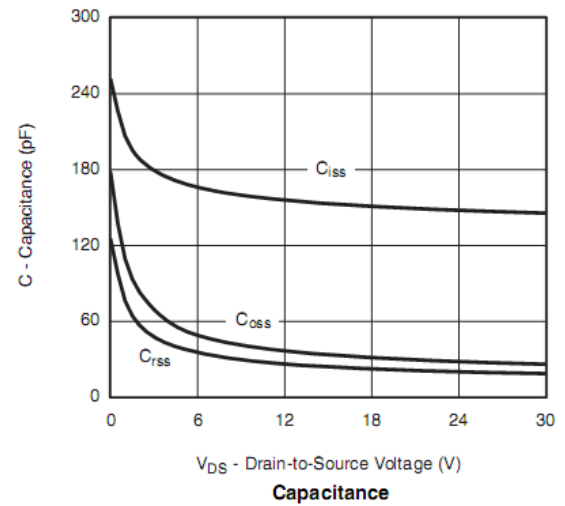
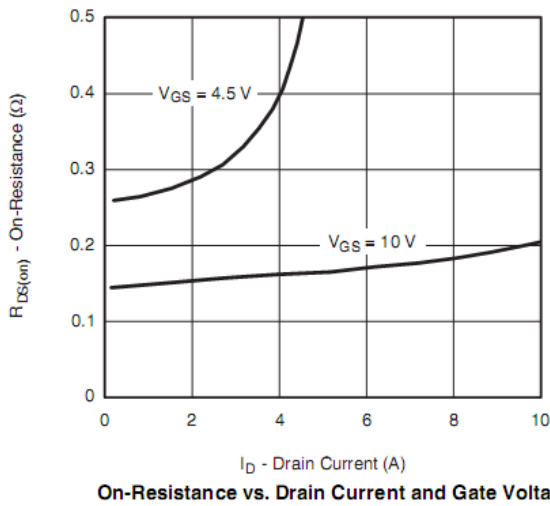
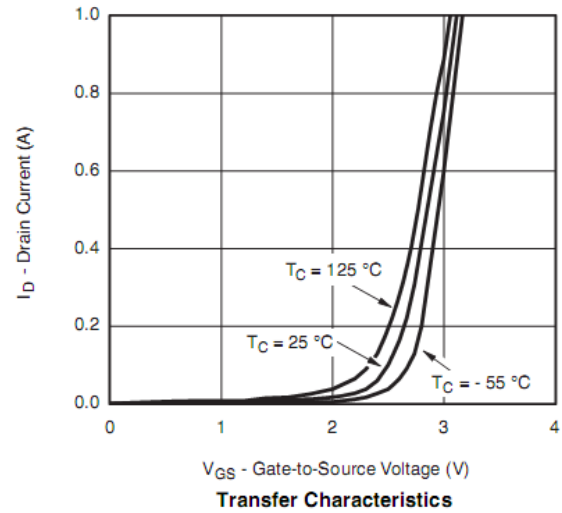
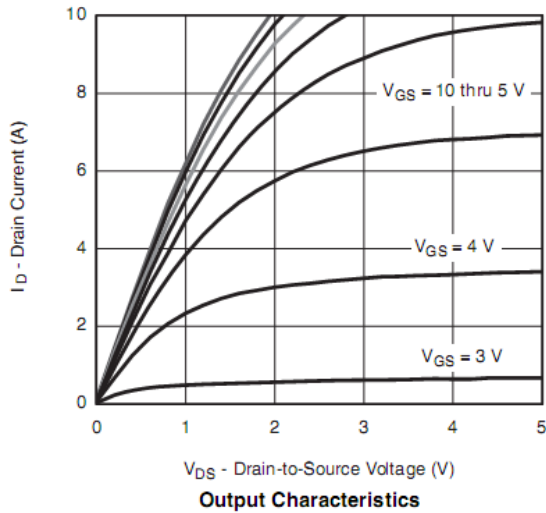
## P-Channel Enhancement Mode Field Effect Transistor BL2303

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

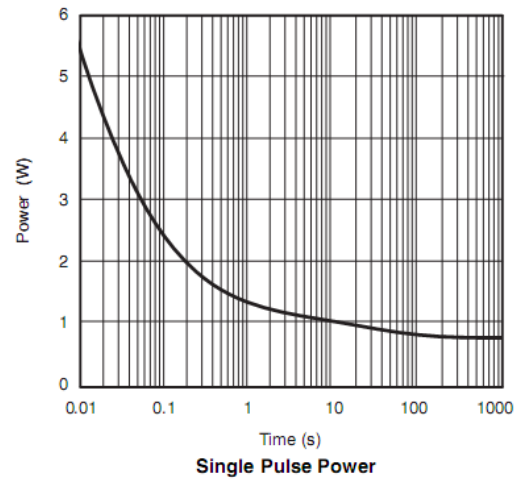
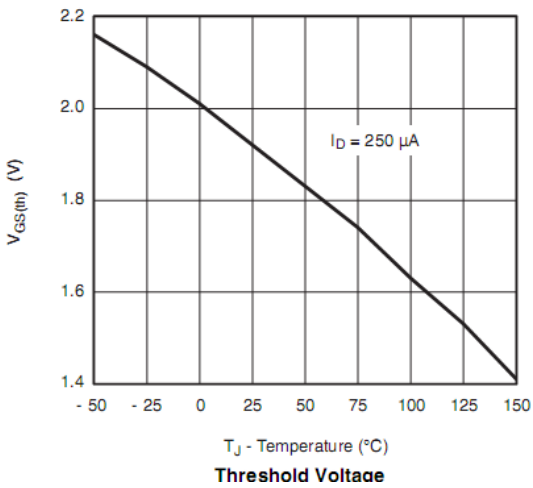
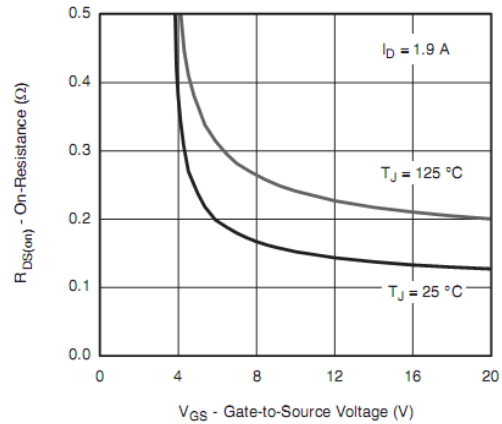
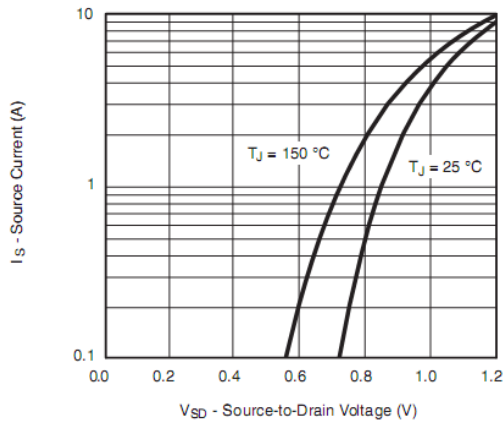
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>STATIC PARAMETERS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D = -250\mu A$	-30	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	$\mu A$
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D = -250\mu A$	-1	-	-3	V
On-State Drain Current	$I_{D(on)}$	$V_{DS}=-5V, V_{GS}=-10V$	-10	-	-	A
Static drain-Source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -1.9A$	-	158	190	m $\Omega$
		$V_{GS} = -4.5V, I_D = -1.4A$	-	275	330	
Drain-Source diode forward voltage	$V_{SD}$	$I_S = -1.5A, V_{GS}=0V$	-	-0.8	-1.2	V
Forward Transconductance	$g_{FS}$	$V_{DS} = -5V, I_D = -1.9A$	-	2	-	S
Maximum Body-Diode Continuous Current	$I_S$		-	-	-1.75	A
<b>DYNAMIC CHARACTERISTICS<sup>C</sup></b>						
Input capacitance	$C_{ISS}$	$V_{GS}=0V, V_{DS}=-15V, f=1MHz$	-	155	-	pF
Output capacitance	$C_{OSS}$		-	35	-	
Reverse transfer capacitance	$C_{RSS}$		-	25	-	
Gate Resistance	$R_G$	$V_{GS}=0V, V_{DS}=0V, f=1MHz$	-	4	8	$\Omega$
<b>SWITCHING CHARACTERISTICS<sup>C</sup></b>						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD}=-15V, R_L=10\Omega, I_{DS}=-1.5A, V_{GEN}=-10V, R_G=1\Omega$	-	4	8	ns
Rise Time	$t_r$		-	11	18	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	11	18	ns
Fall Time	$t_f$		-	8	18	ns
Total Gate Charge	Qg	$V_{GS}=-15V, V_{DS} = -10V, I_D = -1.9A$	-	15.5	22	nC
		$V_{GS}=-15V, V_{DS} = -4.5V, I_D = -1.9A$	-	2	4	
Gate-Source Charge	Qgs	$V_{GS}=-15V, V_{DS} = -4.5V, I_D = -1.9A$	-	0.6	-	nC
Gate-Drain Charge	Qgd		-	1	-	nC
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F = -1.5A, dI/dt=100A/\mu s$	-	17	26	ns
Body Diode Reverse Recovery Charge	Qrr		-	7	-	nC

## P-Channel Enhancement Mode Field Effect Transistor BL2303

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



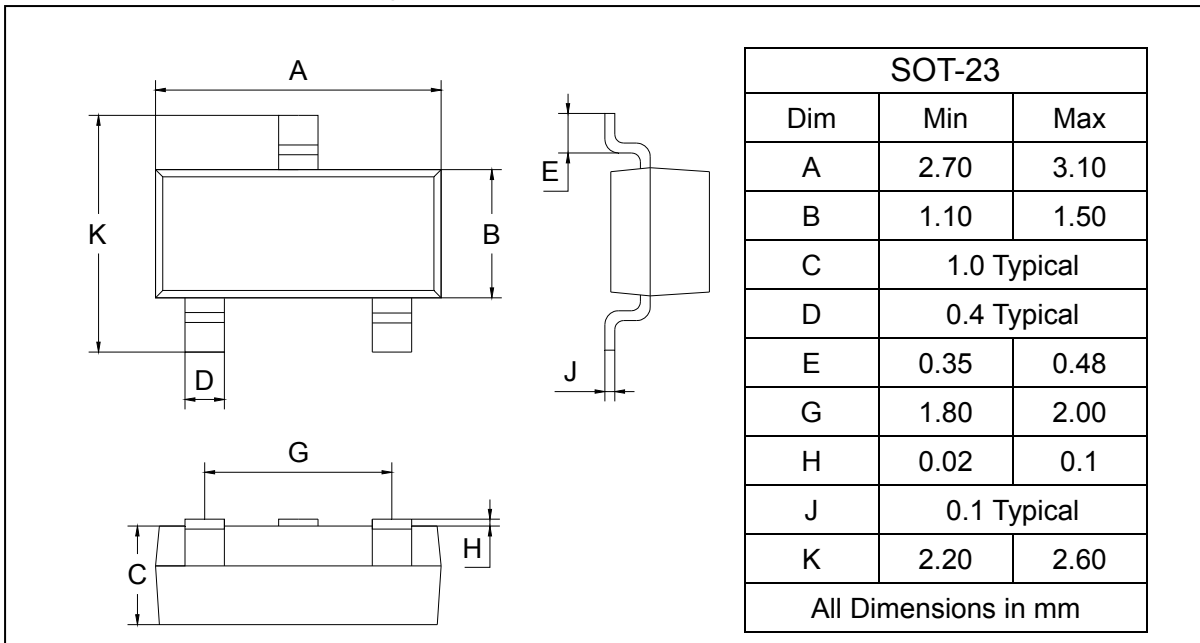
## P-Channel Enhancement Mode Field Effect Transistor BL2303



### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23

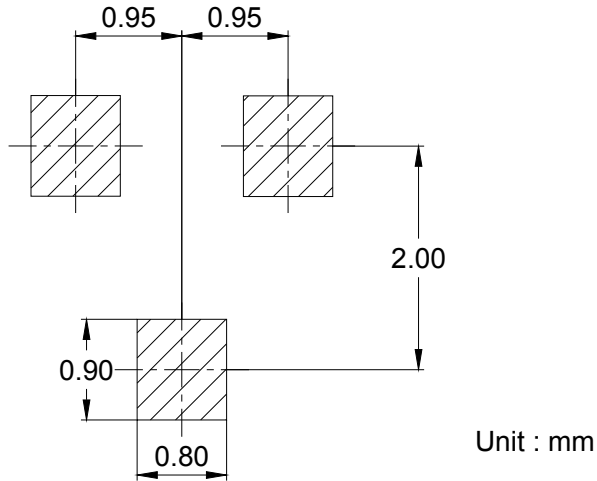


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P-Channel Enhancement Mode Field Effect Transistor BL2303

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SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BL2303	SOT-23	3000/Tape&Reel