



# BXL4001 — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Motor drive.
- Avalanche resistance guarantee.
- 10V drive.

### Specifications

Absolute Maximum Ratings at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		75	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		85	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	340	A
Allowable Power Dissipation	$P_D$		1.75	W
		$T_c=25^\circ\text{C}$	75	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) *1	$E_{AS}$		211	mJ
Avalanche Current *2	$I_{AV}$		51	A

Note : \*1  $V_{DD}=30\text{V}$ ,  $L=100\mu\text{H}$ ,  $I_{AV}=51\text{A}$

\*2  $L \leq 100\mu\text{H}$ , Single pulse

Electrical Characteristics at  $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0\text{V}$	75			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=75\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0\text{V}$			$\pm 10$	$\mu\text{A}$

Marking : XL4001

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# BXL4001

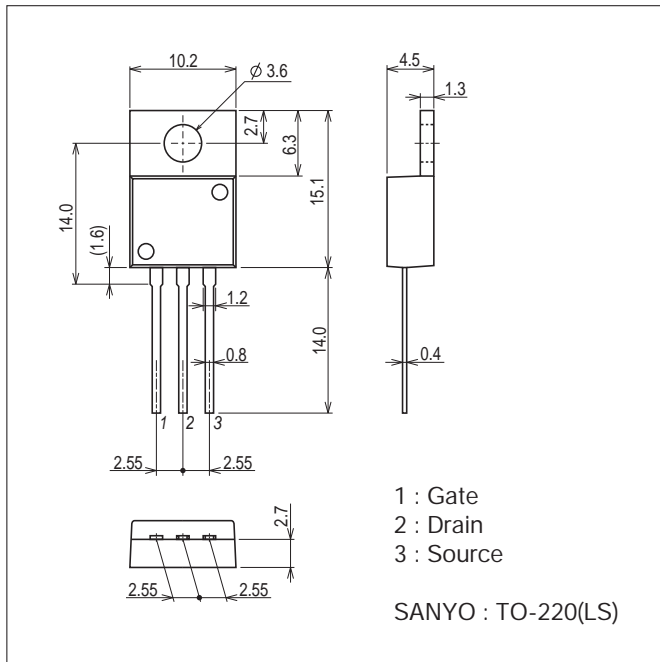
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2		4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=43A$		75		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=43A, V_{GS}=10V$		9.0	12.4	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		6700		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		590		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		440		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		75		ns
Rise Time	$t_r$	See specified Test Circuit.		340		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		260		ns
Fall Time	$t_f$	See specified Test Circuit.		170		ns
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=85A$		115		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=30V, V_{GS}=10V, I_D=85A$		37		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=30V, V_{GS}=10V, I_D=85A$		30		nC
Diode Forward Voltage	$V_{SD}$	$I_S=85A, V_{GS}=0V$		1.0	1.5	V

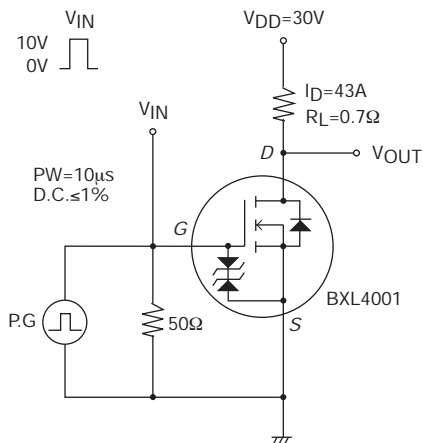
## Package Dimensions

unit : mm (typ)

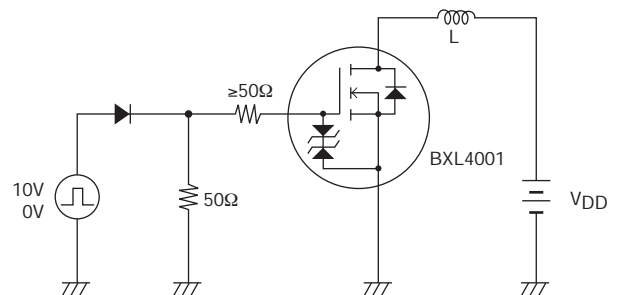
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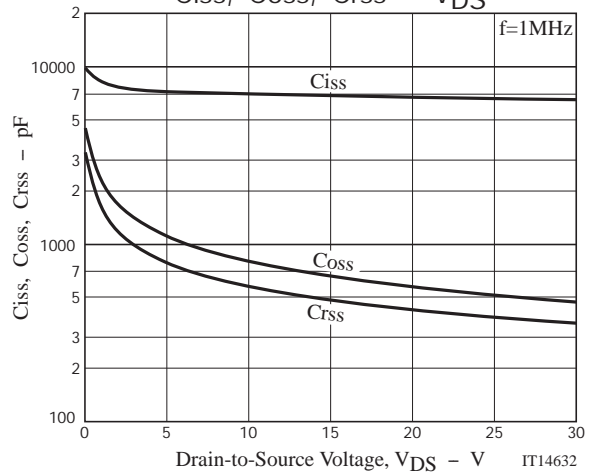
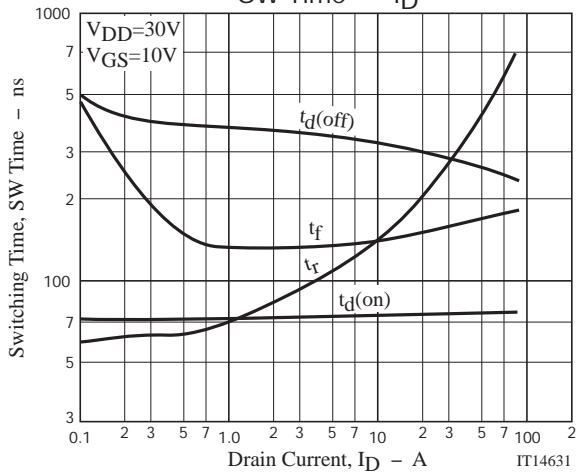
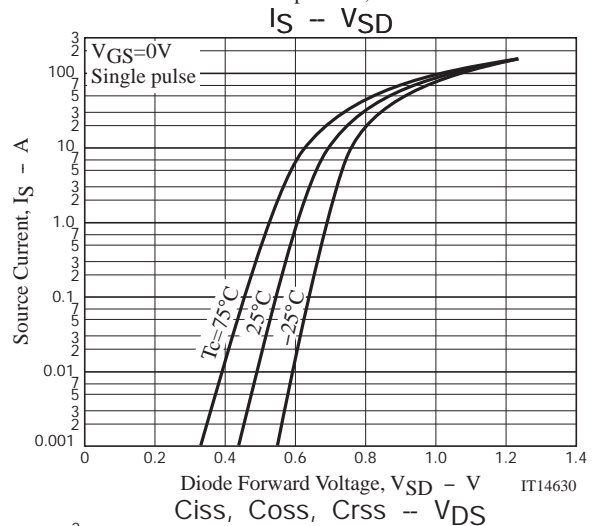
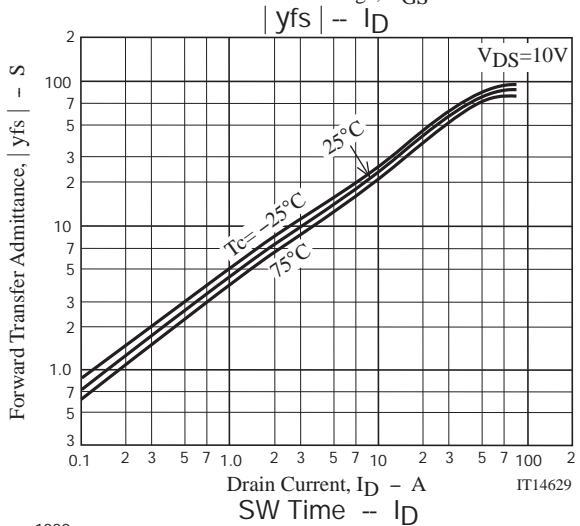
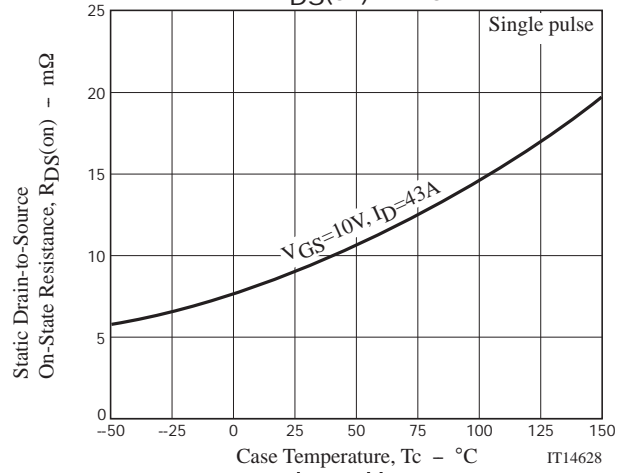
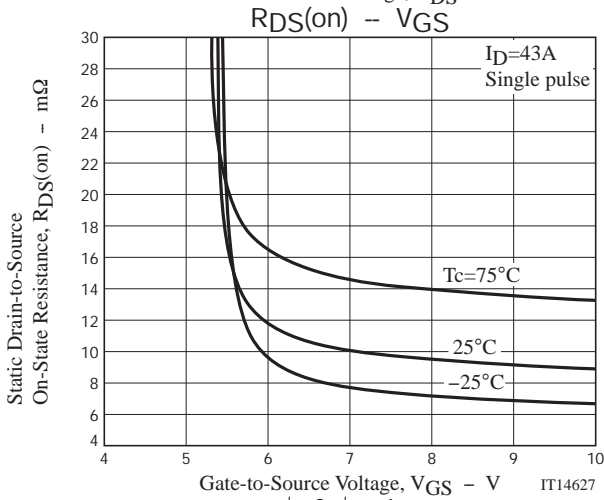
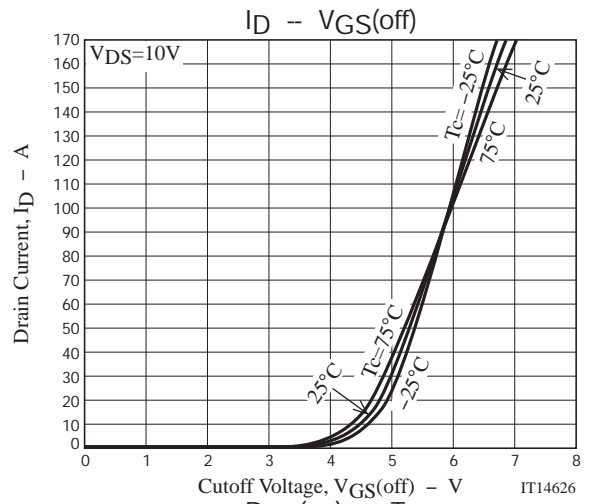
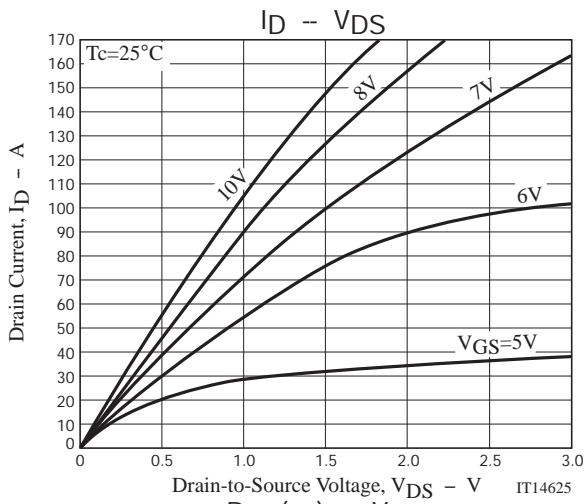


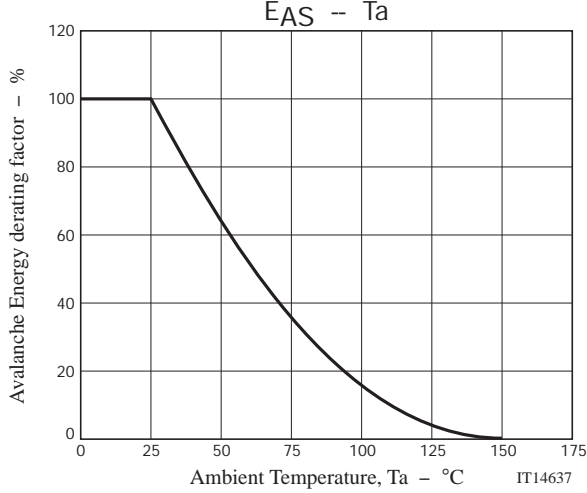
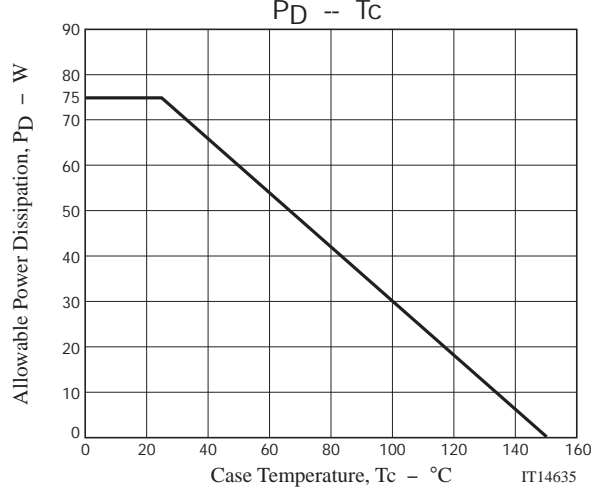
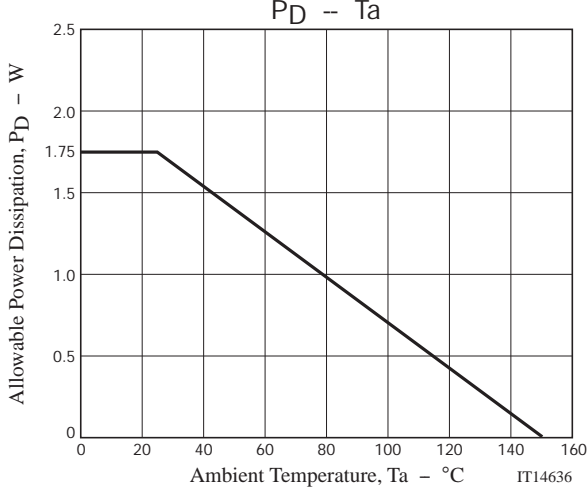
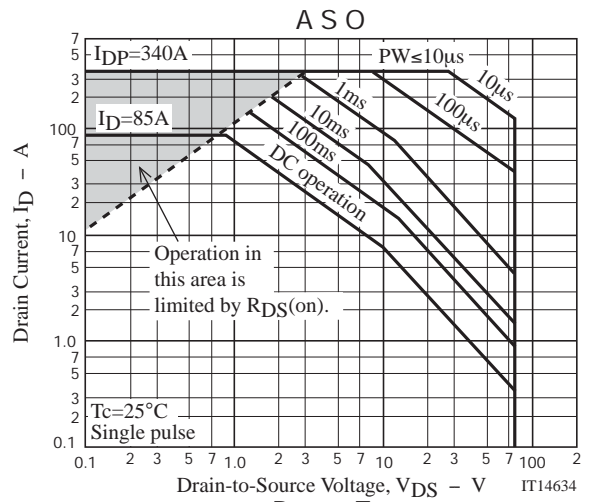
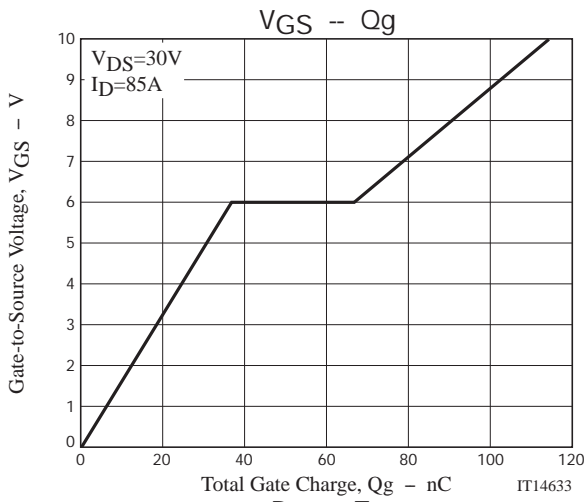
## Switching Time Test Circuit



## Avalanche Resistance Test Circuit







Note on usage : Since the BXL4001 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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