



# 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 Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		75	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		85	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	340	A
Allowable Power Dissipation	P <sub>D</sub>		1.75	W
		T <sub>c</sub> =25°C	75	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E <sub>AS</sub>		211	mJ
Avalanche Current *2	I <sub>AV</sub>		51	A

Note : \*1 V<sub>DD</sub>=30V, L=100μH, I<sub>AV</sub>=51A

\*2 L≤100μH, Single pulse

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	75			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =75V, V <sub>GS</sub> =0V			1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA

Marking : XL4001

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# BXL4001

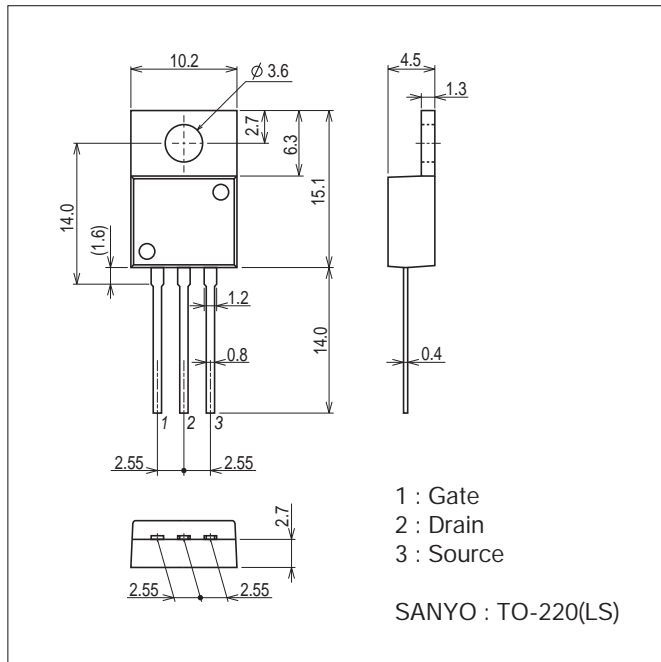
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2		4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=43A$		75		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=43A, V_{GS}=10V$		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

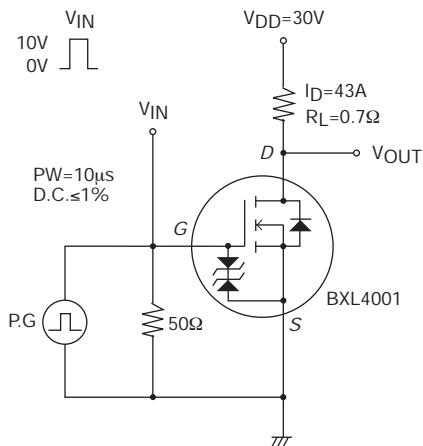
## Package Dimensions

unit : mm (typ)

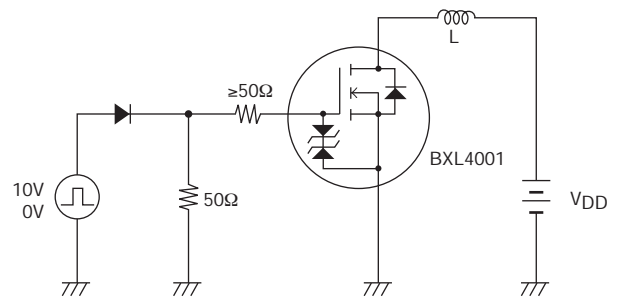
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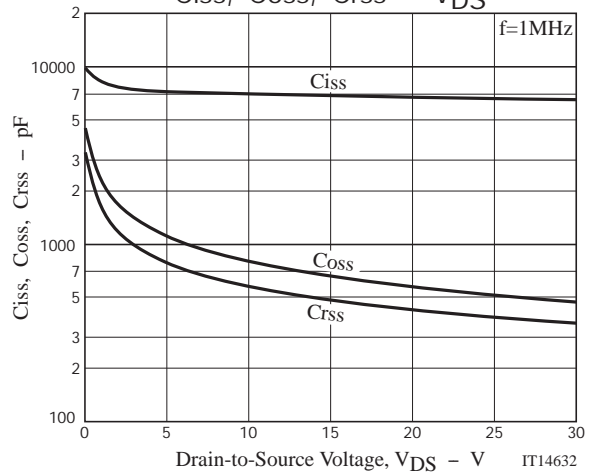
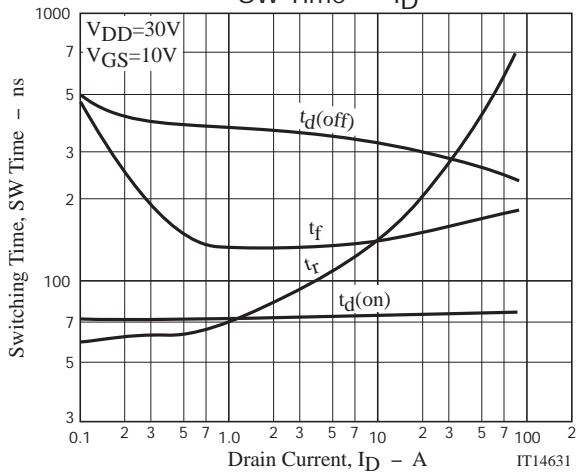
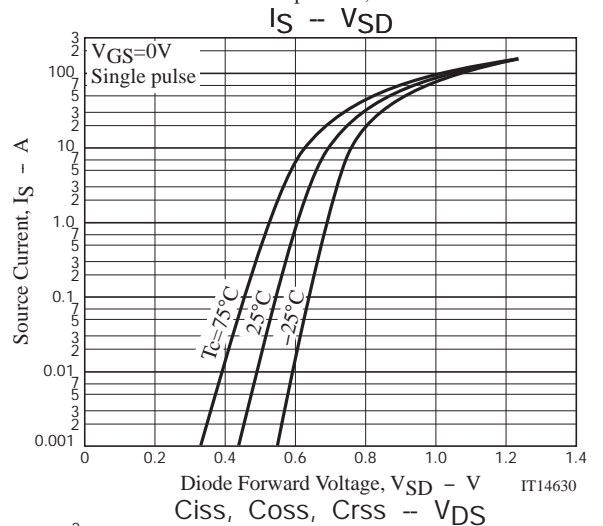
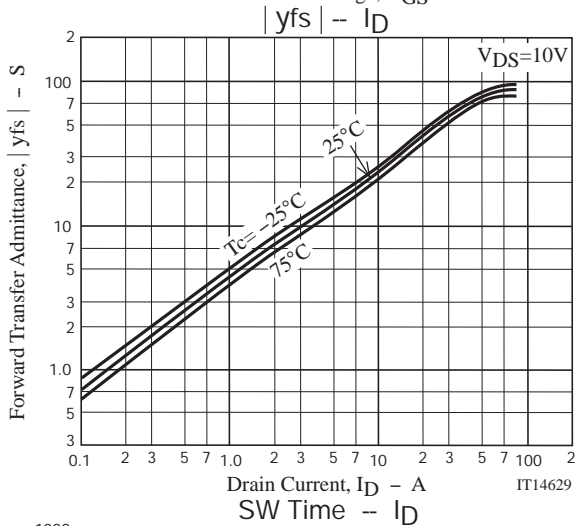
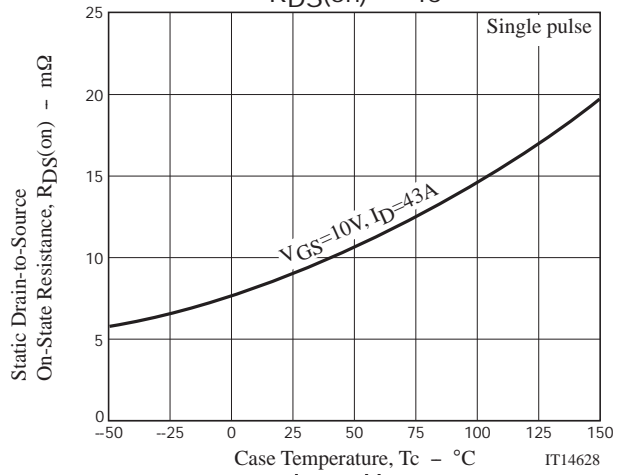
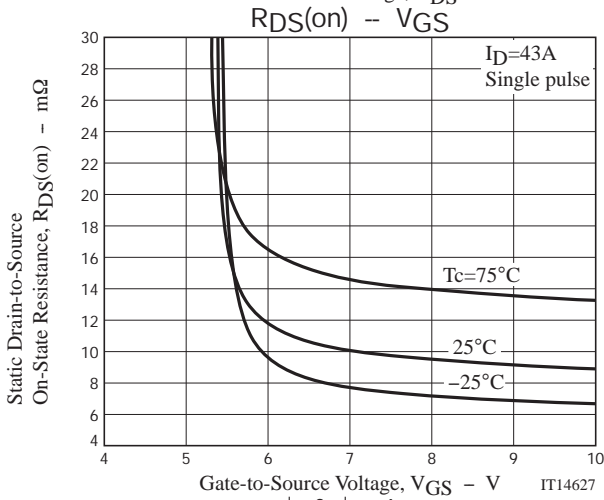
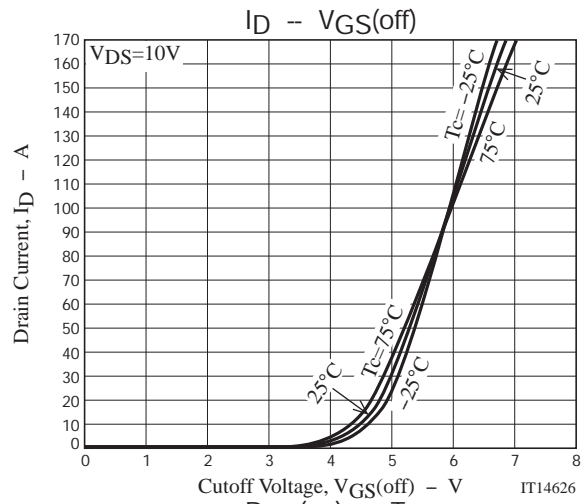
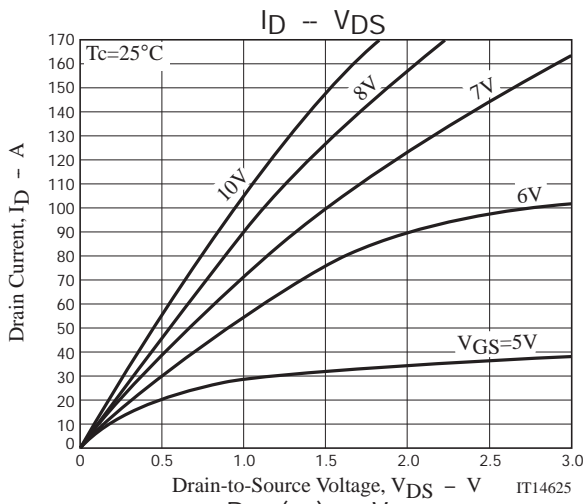


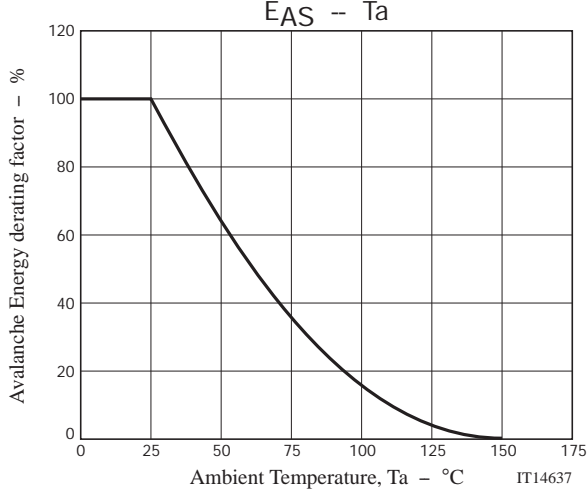
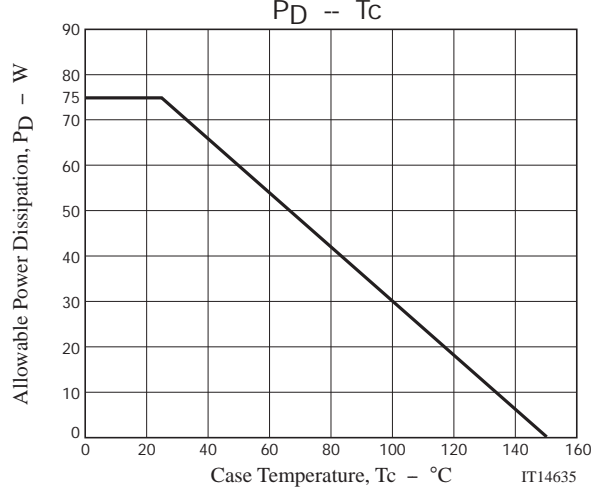
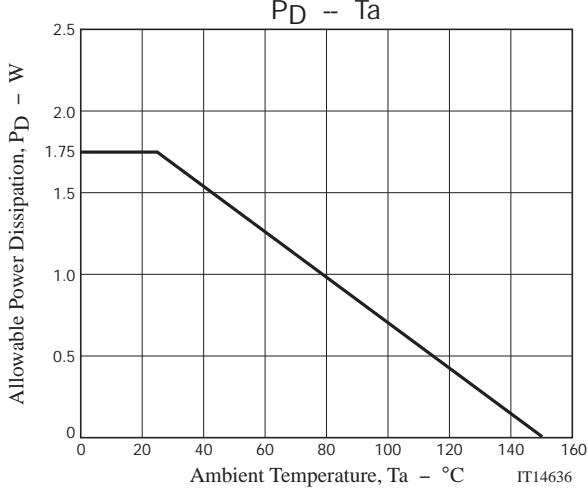
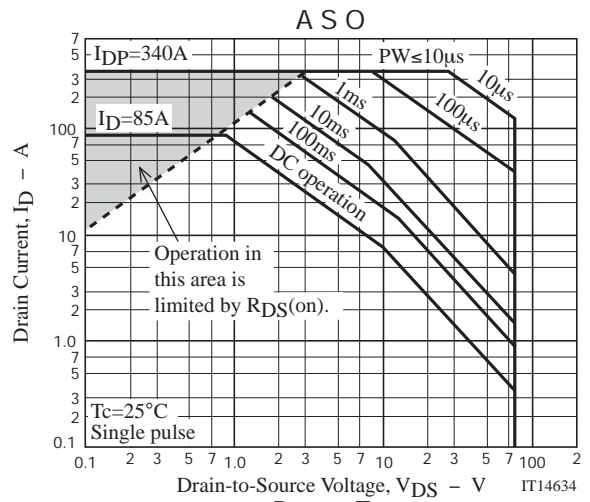
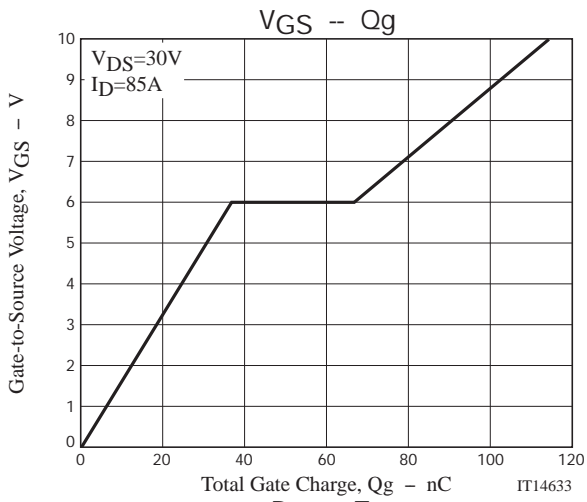
## Switching Time Test Circuit



## 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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