



2SK3101LS — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-Speed Switching Applications.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		400	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _D		11	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	44	A
Allowable Power Dissipation	P _D		2.0	W
		T _c =25°C	40	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E _{AS}		69.1	mJ
Avalanche Current *2	I _{AV}		11	A

*1 V_{DD}=50V, L=1mH, I_{AV}=11A

*2 L≤1mH, 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 _D =1mA, V _{GS} =0	400			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =320V, V _{GS} =0			1.0	mA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0			±100	nA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	3.0		4.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =8A	4.0	8.0		S
Static Drain-to-Source On-State Resistance	R _{DS(on)}	I _D =8A, V _{GS} =15V		0.32	0.4	Ω

Marking : K3101

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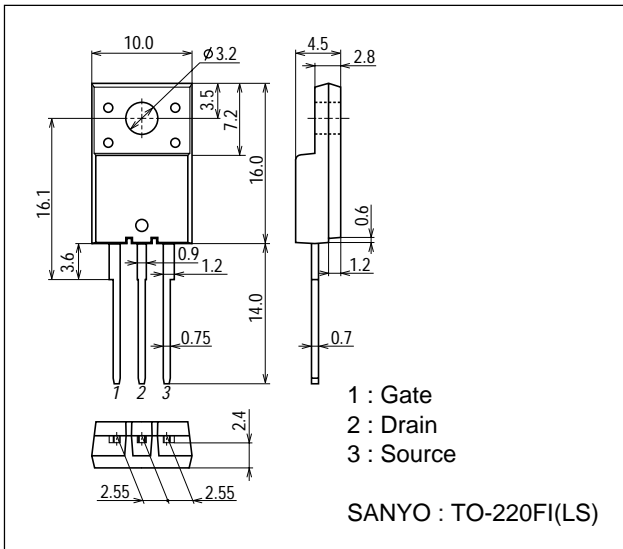
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		1850		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		480		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		240		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		19		ns
Rise Time	t_r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		140		ns
Fall Time	t_f	See specified Test Circuit.		41		ns
Total Gate Charge	Qg	$V_{DS}=200V, V_{GS}=10V, I_D=11A$		58		nC
Diode Forward Voltage	VSD	$I_S=11A, V_{GS}=0$		0.9	1.2	V

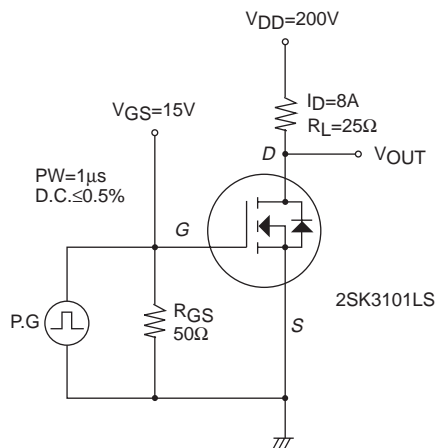
Package Dimensions

unit : mm

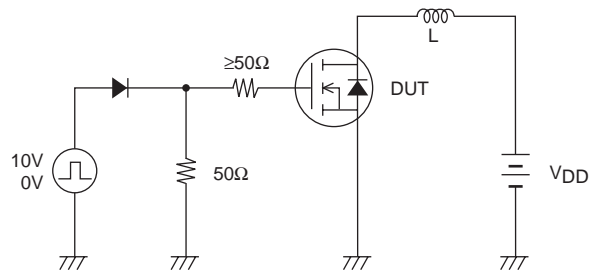
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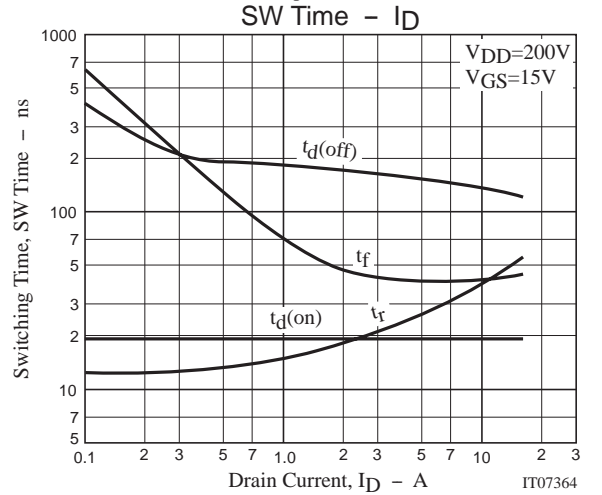
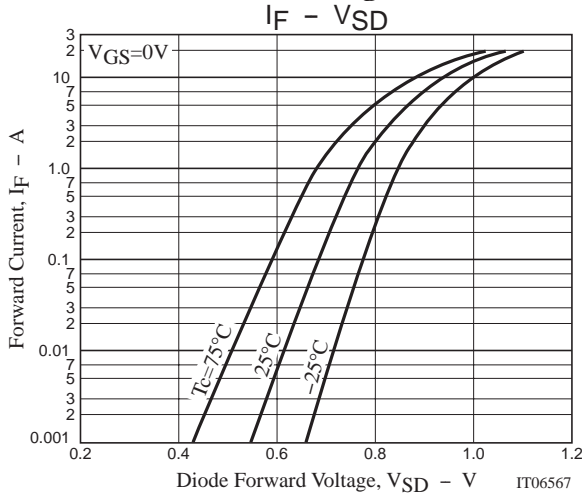
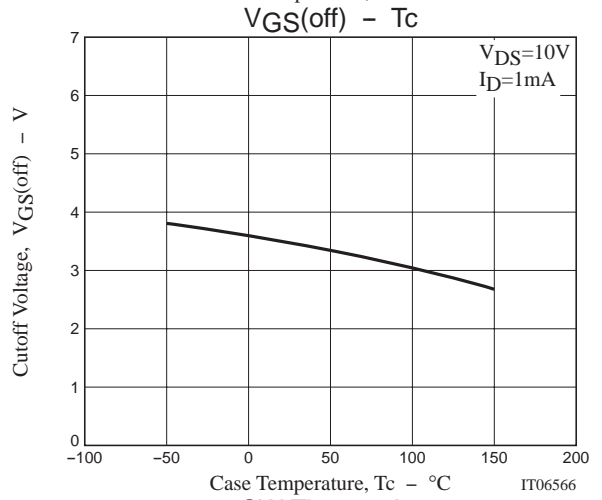
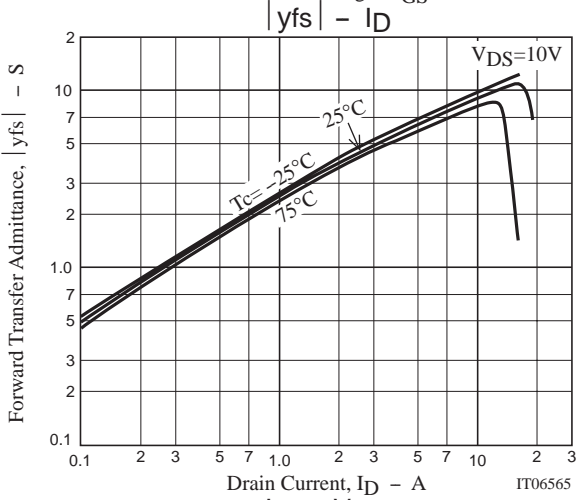
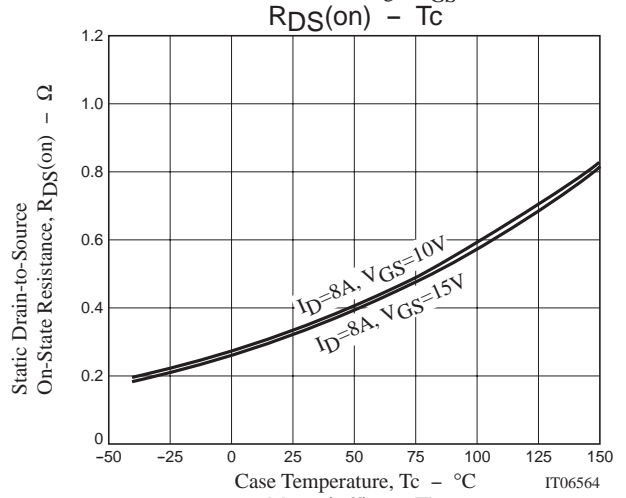
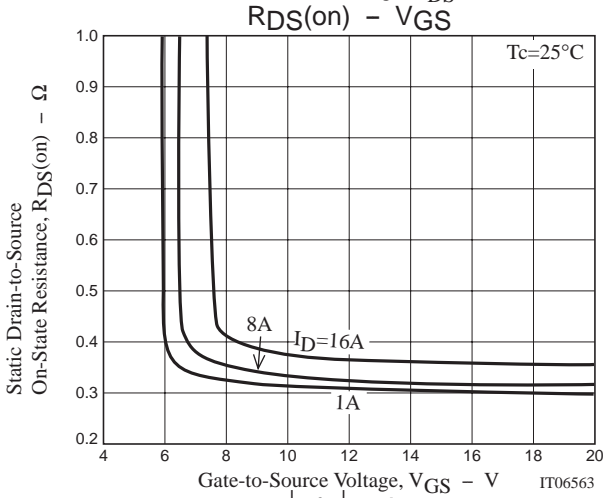
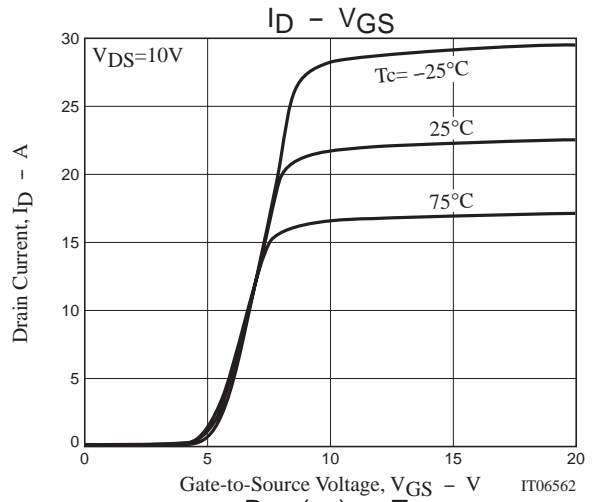
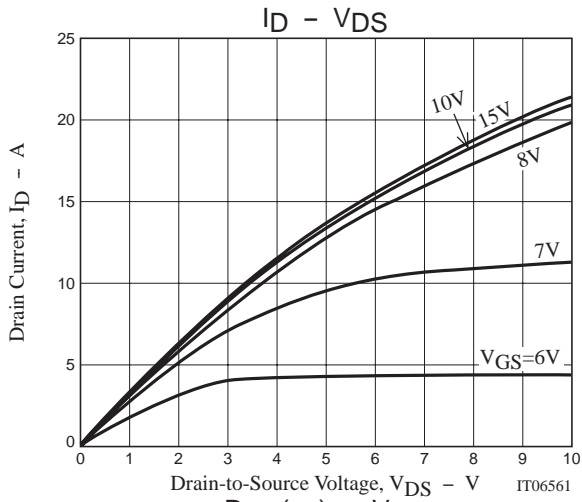
Switching Time Test Circuit



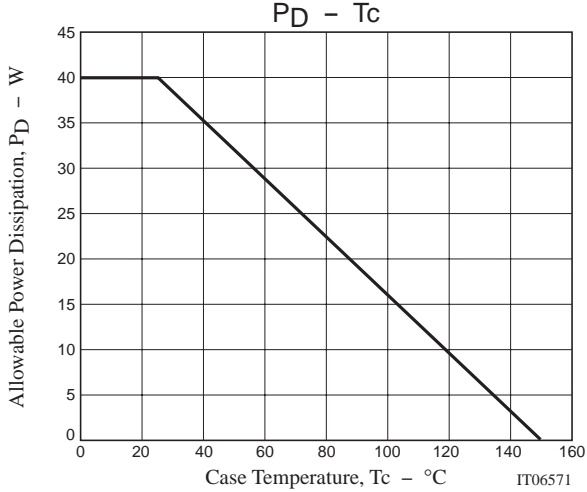
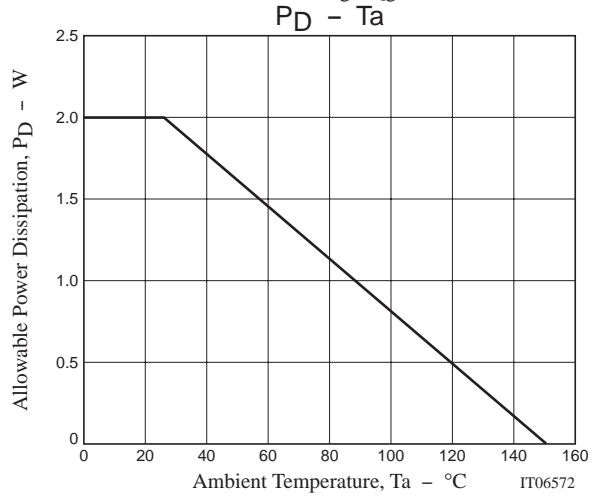
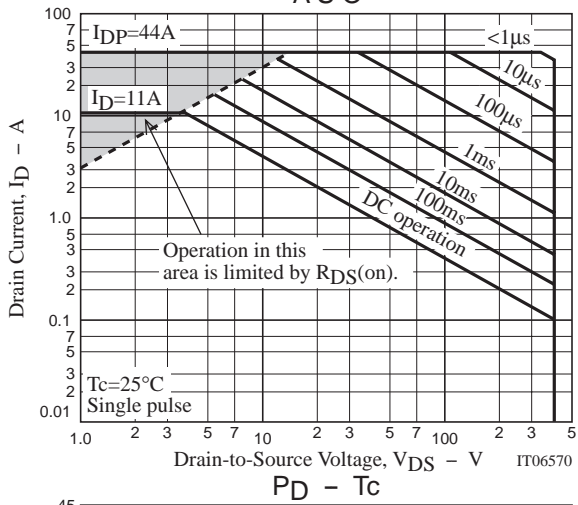
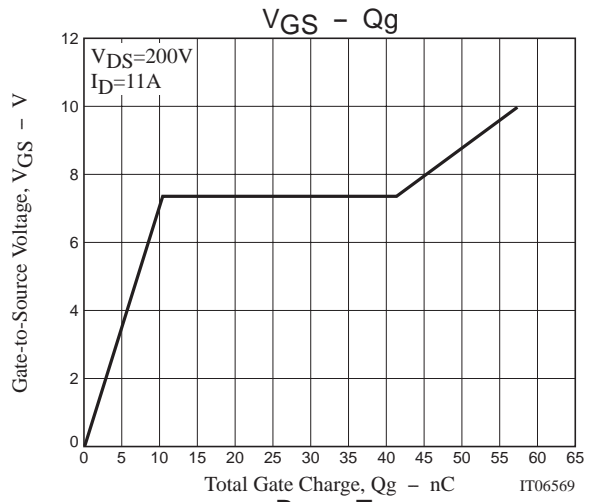
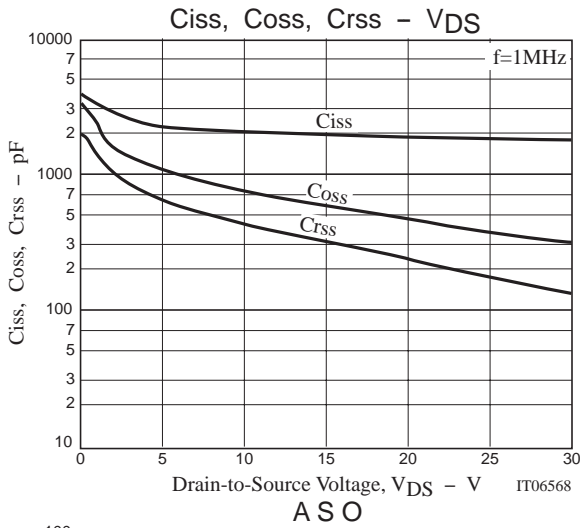
Unclamped Inductive Test Circuit



2SK3101LS



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Note on usage : Be careful in handling the 2SK3101LS because it has no protection diode between gate and source.

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