



SANYO Semiconductors

DATA SHEET

2SK4118LS — General-Purpose Switching Device Applications

N-Channel Silicon MOSFET

Features

- Low ON-resistance, low input capacitance, ultrahigh-speed switching.
- Adoption of high reliability HVP process.
- Attachment workability is good by Mica-less package.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		400	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	IDc ^{*1}	Limited only by maximum temperature	18	A
	IDpack ^{*2}	SANYO's ideal heat dissipation condition	11.9	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	PD		2.0	W
		Tc=25°C (SANYO's ideal heat dissipation condition)	37	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) ^{*3}	EAS		427	mJ
Avalanche Current ^{*4}	IAV		18	A

^{*1} Shows chip capability^{*2} Package limited^{*3} VDD=99V, L=2mH, IAV=18A^{*4} L≤2mH, single pulse

Marking : K4118

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2SK4118LS

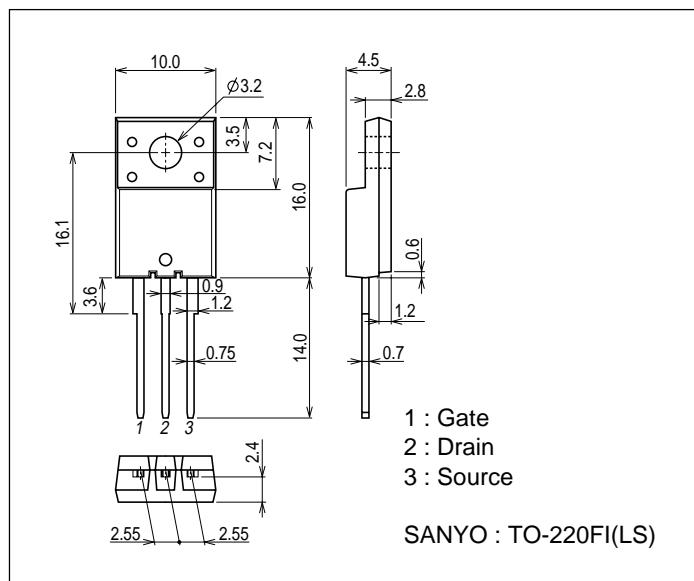
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$I_D=10\text{mA}, V_{GS}=0\text{V}$	400			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=320\text{V}, V_{GS}=0\text{V}$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30\text{V}, V_{DS}=0\text{V}$			± 100	nA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	3		5	V
Forward Transfer Admittance	$ y_{\text{fs}} $	$V_{DS}=10\text{V}, I_D=9\text{A}$	4	8		S
Static Drain-to-Source On-State Resistance	$R_{\text{DS(on)}}$	$I_D=9\text{A}, V_{GS}=10\text{V}$		0.26	0.34	Ω
Input Capacitance	C_{iss}	$V_{DS}=30\text{V}, f=1\text{MHz}$		1000		pF
Output Capacitance	C_{oss}	$V_{DS}=30\text{V}, f=1\text{MHz}$		240		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=30\text{V}, f=1\text{MHz}$		52		pF
Turn-ON Delay Time	$t_{\text{d(on)}}$	See specified Test Circuit.		25		ns
Rise Time	t_r	See specified Test Circuit.		100		ns
Turn-OFF Delay Time	$t_{\text{d(off)}}$	See specified Test Circuit.		108		ns
Fall Time	t_f	See specified Test Circuit.		49		ns
Total Gate Charge	Q_g	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=18\text{A}$		38.8		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=18\text{A}$		6.7		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=18\text{A}$		25		nC
Diode Forward Voltage	V_{SD}	$I_S=18\text{A}, V_{GS}=0\text{V}$		0.9	1.2	V

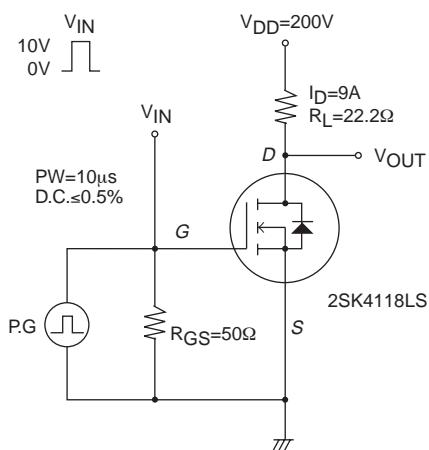
Package Dimensions

unit : mm (typ)

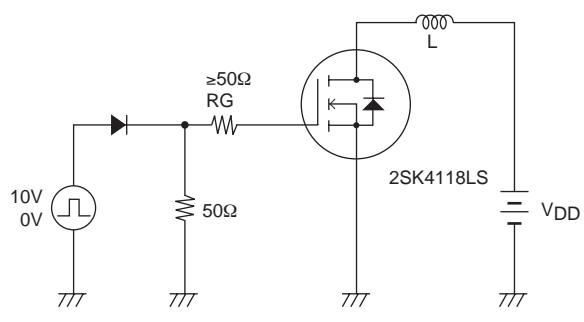
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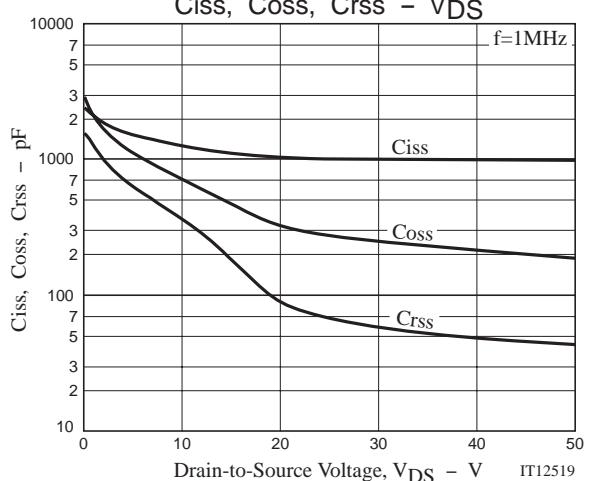
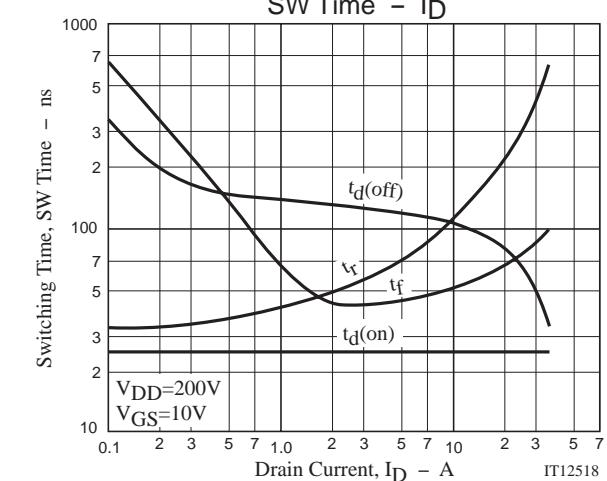
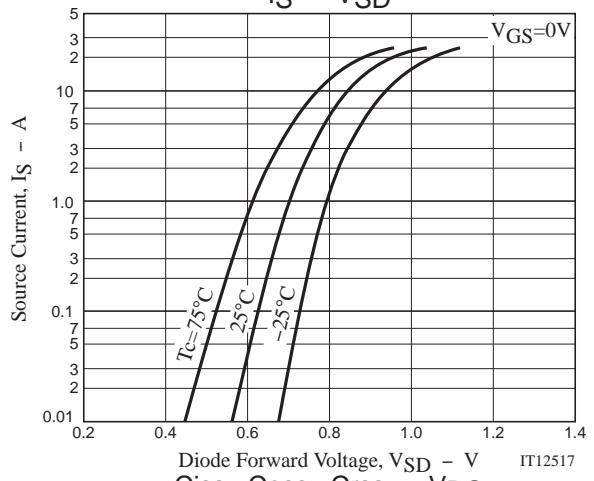
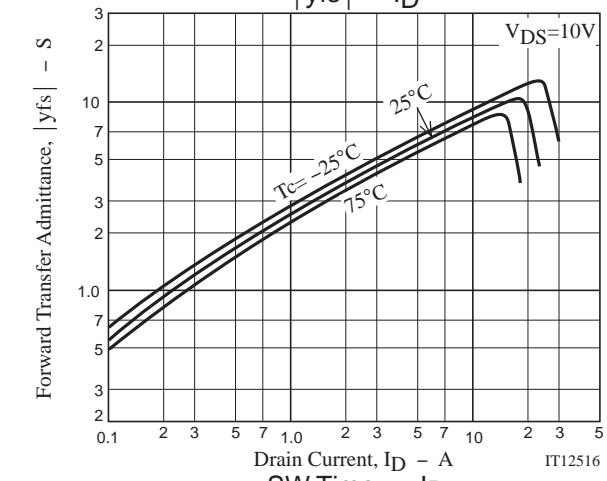
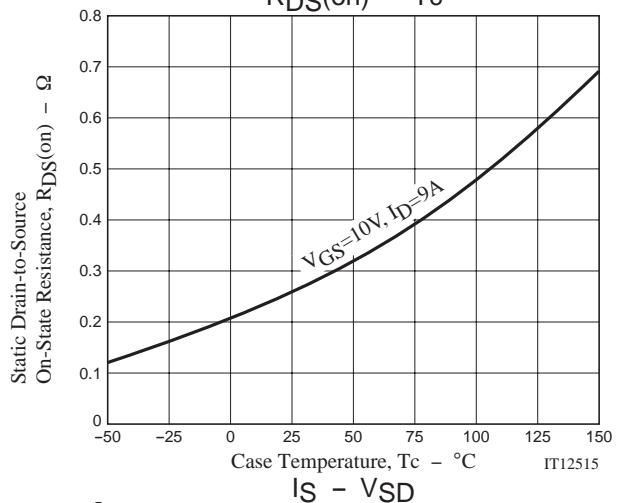
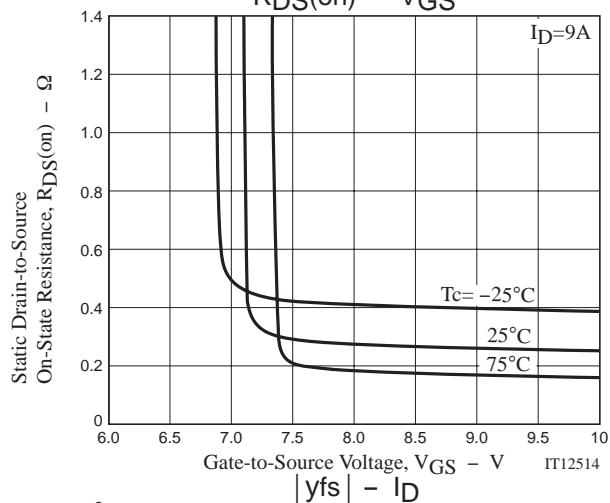
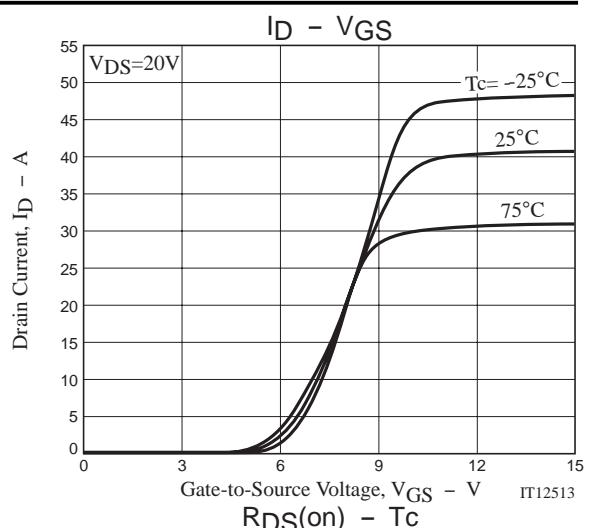
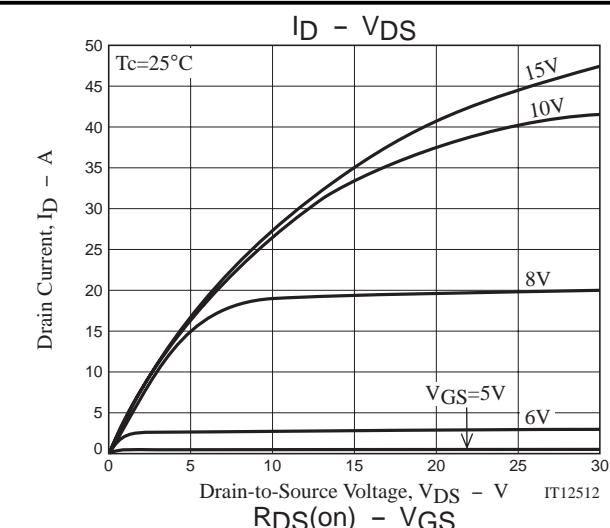
Switching Time Test Circuit



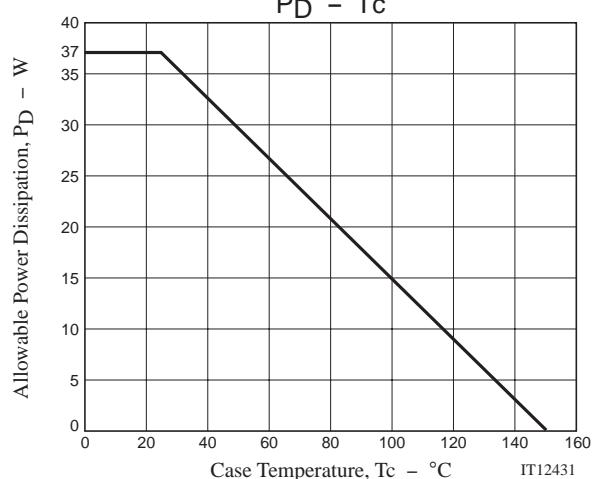
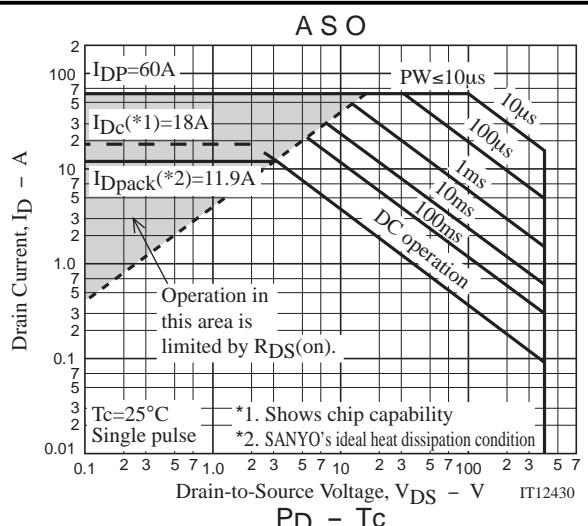
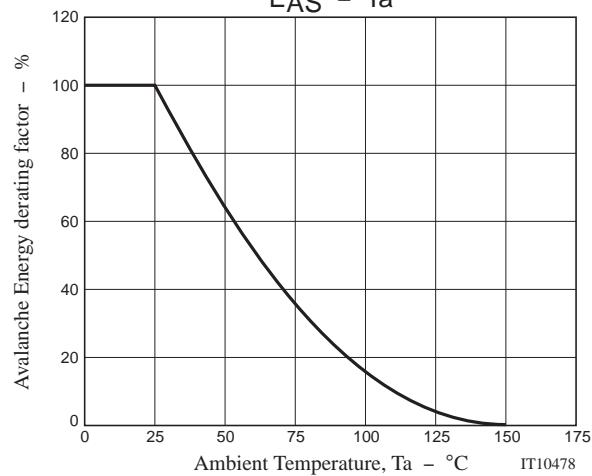
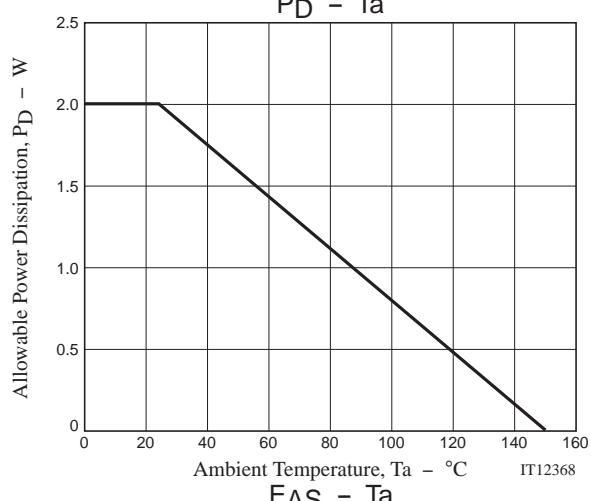
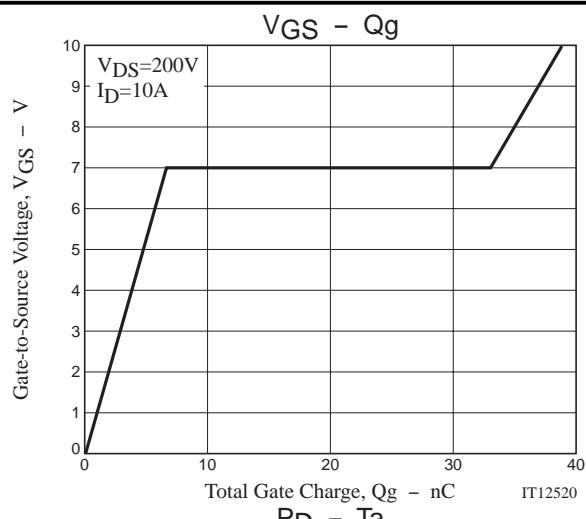
Avalanche Resistance Test Circuit



2SK4118LS



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Note on usage : Since the 2SK4118LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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