

SANYO Semiconductors DATA SHEET

N-Channel Silicon MOSFET

2SK4117LS— General-Purpose Switching Device **Applications**

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)	I _{Dc} *1	Limited only by maximum temperature	15	Α
	I _{Dpack} *2	Tc=25°C (SANYO's ideal heat dissipation condition)*3	10.4	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	47	Α
Allowable Power Dissipation	D-		2.0	W
	PD	Tc=25°C (SANYO's ideal heat dissipation condition)*3	35	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *4	EAS		296	mJ
Avalanche Current *5	IAV		15	А

^{*1} Shows chip capability

The method is applying silicone grease to the backside of the device and attaching the device to water-cooled radiator made of aluminium.

Marking: K4117

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^{*2} Package limited

^{*3} SANYO's condition is radiation from backside.

^{*4} VDD=99V, L=2mH, IAV=15A

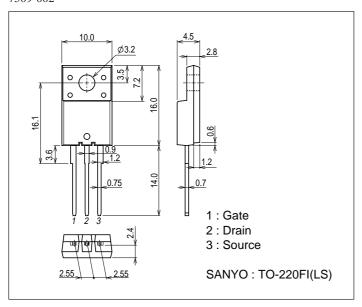
^{*5} L≤2mH, single pulse

Electrical Characteristics at Ta=25°C

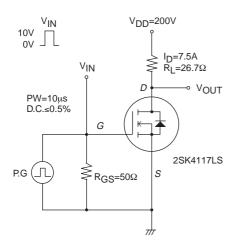
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	400			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =320V, V _{GS} =0V			100	μΑ
Gate-to-Source Leakage Current	IGSS	V _{GS} =±30V, V _{DS} =0V			±100	nA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	3		5	V
Forward Transfer Admittance	yfs	V _{DS} =10V, I _D =7.5A	3.6	7.2		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)	I _D =7.5A, V _{GS} =10V		0.32	0.42	Ω
Input Capacitance	Ciss	V _{DS} =30V, f=1MHz		755		pF
Output Capacitance	Coss	V _{DS} =30V, f=1MHz		180		pF
Reverse Transfer Capacitance	Crss	V _{DS} =30V, f=1MHz		42		pF
Turn-ON Delay Time	t _d (on)	See specified Test Circuit.		16		ns
Rise Time	t _r	See specified Test Circuit.		62		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		101		ns
Fall Time	tf	See specified Test Circuit.		56		ns
Total Gate Charge	Qg	V _{DS} =200V, V _{GS} =10V, I _D =15A		30.6		nC
Gate-to-Source Charge	Qgs	V _{DS} =200V, V _{GS} =10V, I _D =15A		5.2		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =200V, V _{GS} =10V, I _D =15A		19.5		nC
Diode Forward Voltage	V _{SD}	IS=15A, VGS=0V		0.9	1.2	V

Package Dimensions

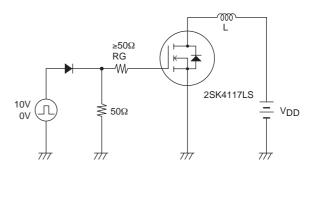
unit : mm (typ) 7509-002

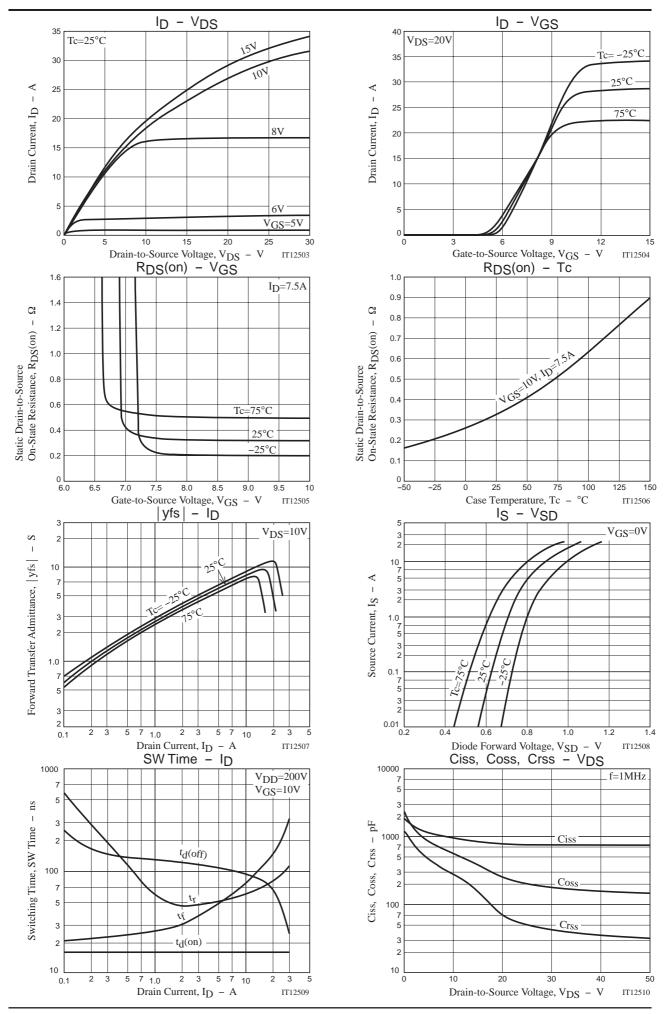


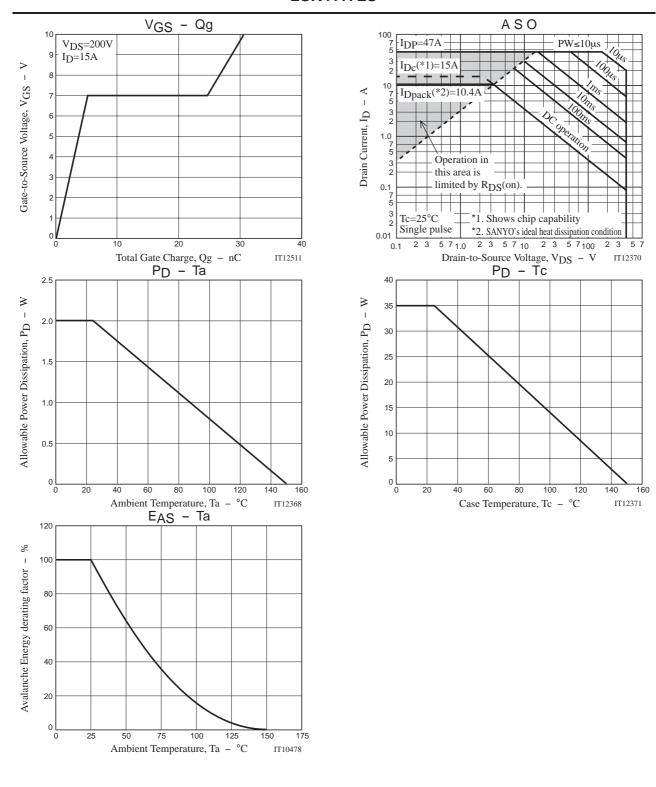
Switching Time Test Circuit



Avalanche Resistance Test Circuit







Note on usage: Since the 2SK4117LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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