

SANYO Semiconductors DATA SHEET

2SK4196LS—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		500	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	I _{Dc} *1	Limited only maximum temperature Tch=150°C	5.5	А
	I _{Dpack} *2	Tc=25°C (SANYO's ideal heat dissipation condition)*3	5.0	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	21	А
Allowable Power Dissipation	D-		2.0	W
	PD	Tc=25°C (SANYO's ideal heat dissipation condition)*3	30	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *4	EAS		93.8	mJ
Avalanche Current *5	I _{AV}		5.5	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: K4196

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^{*2} Package limited

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

^{*4} V_{DD}=99V, L=5mH, I_{AV}=5.5A

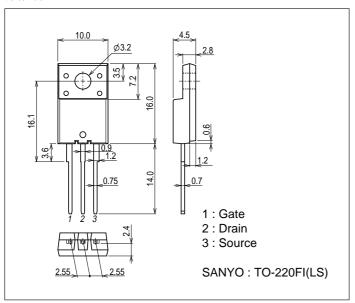
^{*5} L≤5mH, single pulse

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	500			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =400V, 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 =2.8A	1.3	2.5		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)	I _D =2.8A, V _{GS} =10V		1.2	1.56	Ω
Input Capacitance	Ciss	V _{DS} =30V, f=1MHz		360		pF
Output Capacitance	Coss	V _{DS} =30V, f=1MHz		77		pF
Reverse Transfer Capacitance	Crss	V _{DS} =30V, f=1MHz		17		pF
Turn-ON Delay Time	t _d (on)	See specified Test Circuit.		13		ns
Rise Time	t _r	See specified Test Circuit.		32		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		39		ns
Fall Time	tf	See specified Test Circuit.		18		ns
Total Gate Charge	Qg	V _{DS} =200V, V _{GS} =10V, I _D =5.5A		14.6		nC
Gate-to-Source Charge	Qgs	V _{DS} =200V, V _{GS} =10V, I _D =5.5A		3.2		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =200V, V _{GS} =10V, I _D =5.5A		8.8		nC
Diode Forward Voltage	V _{SD}	I _S =5.5A, V _G S=0V		0.9	1.2	V

Package Dimensions

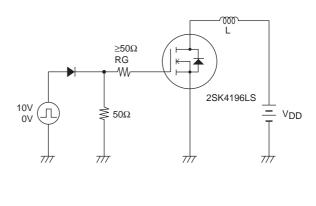
unit : mm (typ) 7509-002

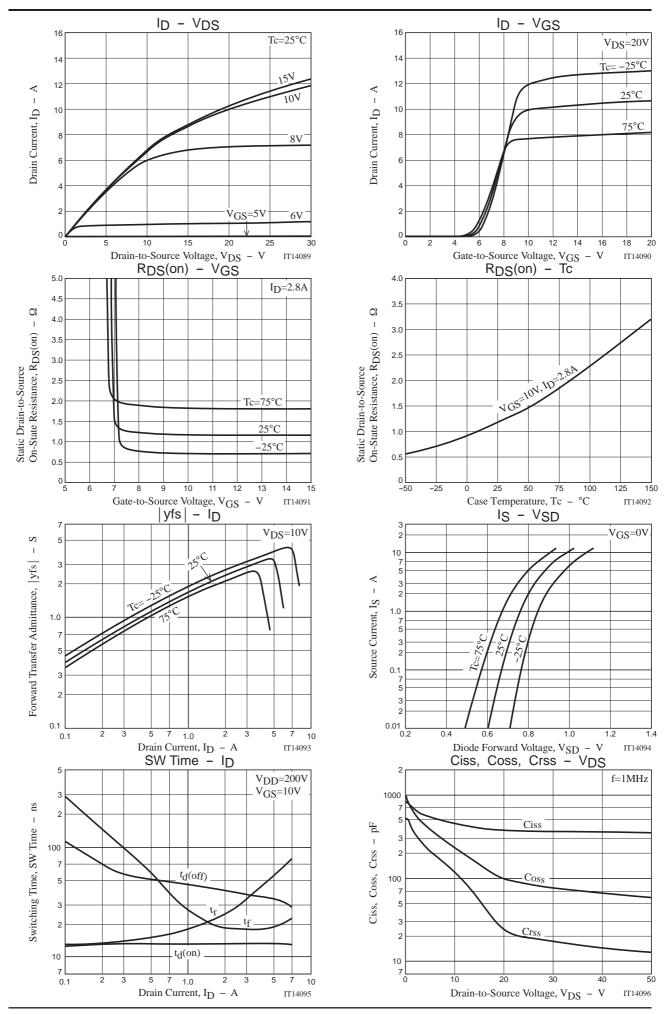


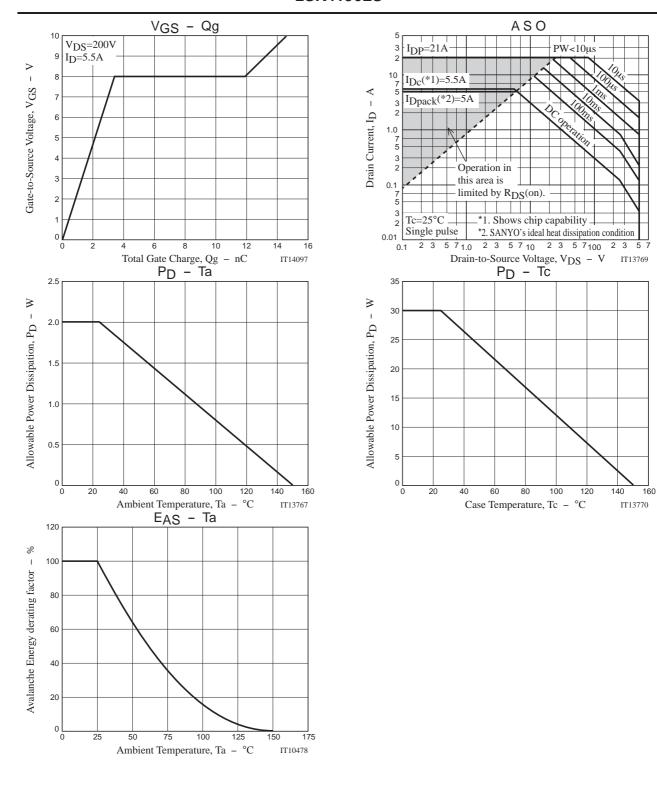
Switching Time Test Circuit

PW=10μs D.C.≤0.5% V_{GS}=10V V_{GS}=10V P.G R_{GS}=50Ω

Avalanche Resistance Test Circuit







Note on usage : Since the 2SK4196LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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