

SANYO Semiconductors DATA SHEET

N-Channel Silicon MOSFET

2SK4096LS — 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)	IDc*1	Limited only by maximum temperature	8	Α
	I _{Dpack} *2	Tc=25°C (SANYO's ideal heat dissipation condition)*3	7.1	Α
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	32	А
Allowable Power Dissipation	D-		2.0	W
	PD	Tc=25°C (SANYO's ideal heat dissipation condition)*3	33	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *4	EAS		397	mJ
Avalanche Current *5	IAV		8	Α

^{*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: K4096

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^{*2} Package limited

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

^{*4} VDD=99V, L=10mH, IAV=8A

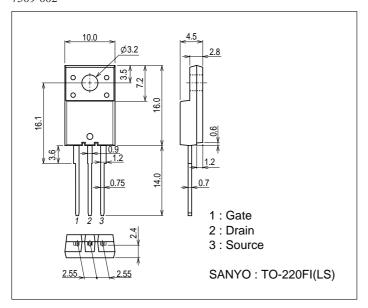
^{*5} L≤10mH, single pulse

Electrical Characteristics at Ta=25°C

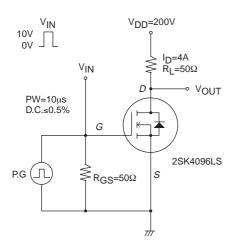
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	500			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =400V, V _{GS} =0V			100	μΑ
Gate-to-Source Leakage Current	IGSS	V _{GS} =±30V, V _{DS} =0V			±100	nA
Cutoff Voltage	VGS(off)	VDS=10V, ID=1mA	3		5	V
Forward Transfer Admittance	yfs	V _{DS} =10V, I _D =4A	2.2	4.5		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)	I _D =4A, V _{GS} =10V		0.65	0.85	Ω
Input Capacitance	Ciss	V _{DS} =30V, f=1MHz		600		pF
Output Capacitance	Coss	V _{DS} =30V, f=1MHz		130		pF
Reverse Transfer Capacitance	Crss	V _{DS} =30V, f=1MHz		28		pF
Turn-ON Delay Time	t _d (on)	See specified Test Circuit.		18.5		ns
Rise Time	t _r	See specified Test Circuit.		46		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		75		ns
Fall Time	tf	See specified Test Circuit.		33		ns
Total Gate Charge	Qg	V _{DS} =200V, V _{GS} =10V, I _D =8A		24		nC
Gate-to-Source Charge	Qgs	V _{DS} =200V, V _{GS} =10V, I _D =8A		4.5		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =200V, V _{GS} =10V, I _D =8A		14		nC
Diode Forward Voltage	V _{SD}	IS=8A, VGS=0V		0.9	1.2	V

Package Dimensions

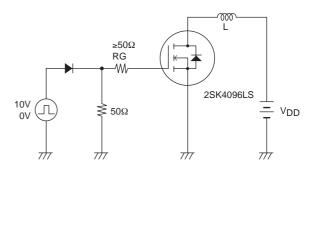
unit : mm (typ) 7509-002

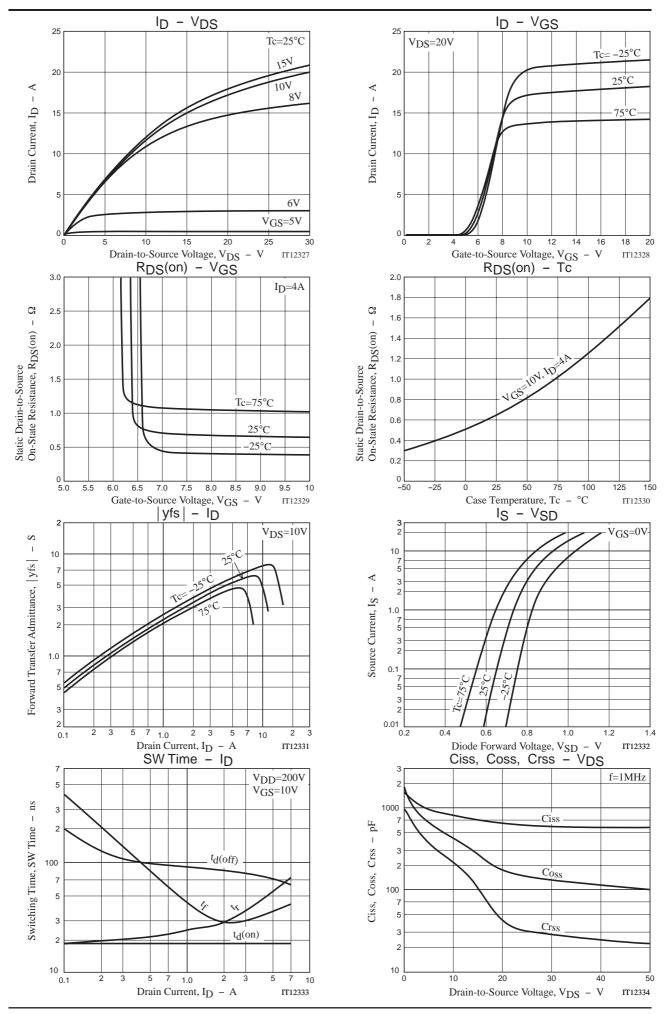


Switching Time Test Circuit

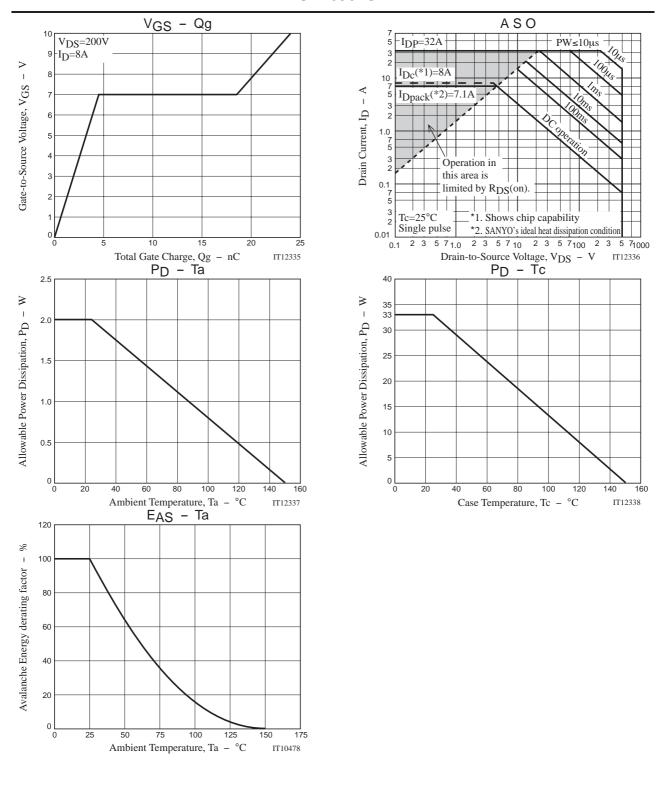


Avalanche Resistance Test Circuit





2SK4096LS



Note on usage : Since the 2SK4096LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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