

SANYO Semiconductors DATA SHEET

2SK4193LS — 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	V _{DSS}		450	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _{Dc} *1	Limited only by maximum temperature Tch=150°C	4.5	А
	IDpack*2	Tc=25°C (SANYO's ideal heat dissipation condition*3)	4.3	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	16	Α
Allowable Power Dissipation	D-		2.0	W
	PD	Tc=25°C (SANYO's ideal heat dissipation condition*3)	28	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *4	EAS		64.5	mJ
Avalanche Current *5	IAV		4.5	Α

Note:*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: K4193

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^{*2} Package limited

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

^{*4} V_{DD}=99V, L=5mH, I_{AV}=4.5A

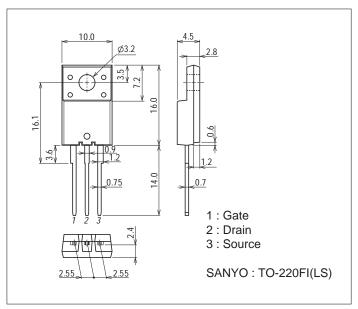
^{*5} L≤5mH, single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Linit
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	450			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =360V, V _{GS} =0V			100	μΑ
Gate-to-Source Leakage Current	IGSS	V _{GS} =±30V, V _{DS} =0V			±100	nA
Cutoff Voltage	VGS(off)	V _{DS} =10V, I _D =1mA	3		5	V
Forward Transfer Admittance	yfs	VDS=10V, ID=2.3A	1.0	2.0		S
Static Drain-to-Source On-State Resistance	R _{DS} (on)	I _D =2.3A, V _G S=10V		1.5	1.95	Ω
Input Capacitance	Ciss	V _{DS} =30V, f=1MHz		260		pF
Output Capacitance	Coss	V _{DS} =30V, f=1MHz		60		pF
Reverse Transfer Capacitance	Crss	V _{DS} =30V, f=1MHz		12		pF
Turn-ON Delay Time	t _d (on)	See specified Test Circuit.		11		ns
Rise Time	t _r	See specified Test Circuit.		26		ns
Turn-OFF Delay Time	t _d (off)	See specified Test Circuit.		29		ns
Fall Time	tf	See specified Test Circuit.		13		ns
Total Gate Charge	Qg	V _{DS} =200V, V _{GS} =10V, I _D =4.5A		10		nC
Gate-to-Source Charge	Qgs	V _{DS} =200V, V _{GS} =10V, I _D =4.5A		2.6		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =200V, V _{GS} =10V, I _D =4.5A		6.1		nC
Diode Forward Voltage	V _{SD}	I _S =4.5A, V _{GS} =0V		0.9	1.2	V

Package Dimensions

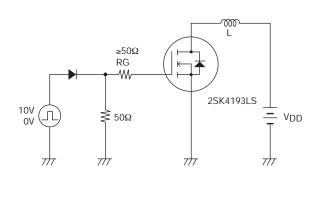
unit : mm (typ) 7509-002

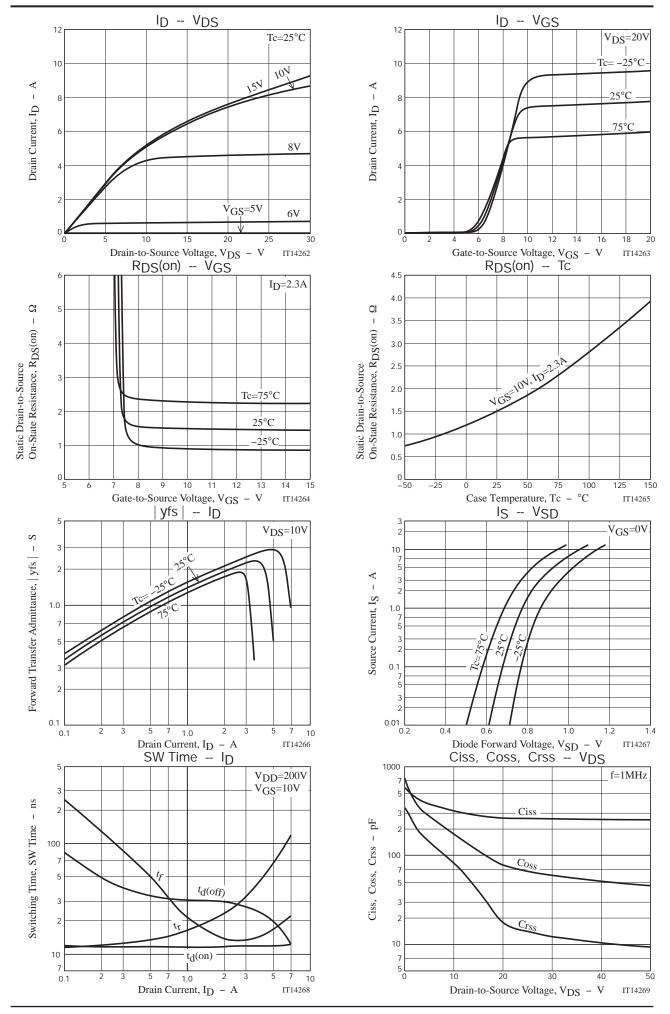


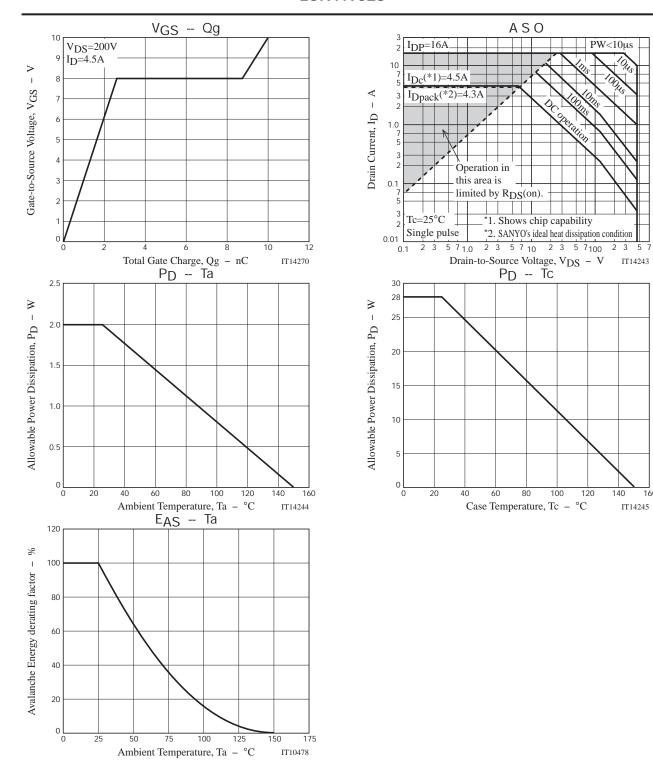
Switching Time Test Circuit

PW=10µS $D.C. \le 0.5\%$ $V_{DD} = 200V$ V_{DD

Avalanche Resistance Test Circuit







PW<10μs

140

160

IT14245

Note on usage: Since the 2SK4193LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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