

## N-Channel Silicon MOSFET 2SK4192LS — 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 <sub>Dc</sub> *1	Limited only by maximum temperature Tch=150°C	7	А
	IDpack*2	Tc=25°C (SANYO's ideal heat dissipation condition*3)	6.1	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	23	А
Allowable Power Dissipation	PD		2.0	W
		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		161	mJ
Avalanche Current *5	IAV		7	А

Note :\*1 Shows chip capability

\*2 Package limited

\*3 SANYO's condition is radiation from backside.

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

\*4 VDD=99V, L=5mH, IAV=7A

\*5 L≤5mH, single pulse

Marking: K4192

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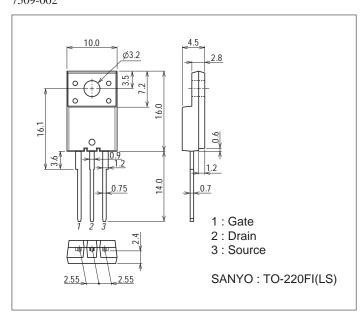
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### Electrical Characteristics at Ta=25°C

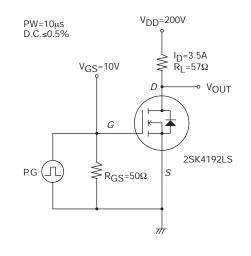
Parameter	Symbol	Conditions	Ratings			11
			min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=10mA, VGS=0V	400			V
Zero-Gate Voltage Drain Current	IDSS	V <sub>DS</sub> =320V, V <sub>GS</sub> =0V			100	μΑ
Gate-to-Source Leakage Current	IGSS	V <sub>GS</sub> =±30V, V <sub>DS</sub> =0V			±100	nA
Cutoff Voltage	VGS(off)	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	3		5	V
Forward Transfer Admittance	yfs	VDS=10V, ID=3.5A	1.6	3.1		S
Static Drain-to-Source On-State Resistance	R <sub>DS</sub> (on)	ID=3.5A, VGS=10V		0.8	1.04	Ω
Input Capacitance	Ciss	V <sub>DS</sub> =30V, f=1MHz		360		pF
Output Capacitance	Coss	V <sub>DS</sub> =30V, f=1MHz		90		pF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =30V, f=1MHz		19		рF
Turn-ON Delay Time	t <sub>d</sub> (on)	See specified Test Circuit.		13		ns
Rise Time	tr	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	t <sub>d</sub> (off)	See specified Test Circuit.		39		ns
Fall Time	tf	See specified Test Circuit.		17		ns
Total Gate Charge	Qg	V <sub>DS</sub> =200V, V <sub>GS</sub> =10V, I <sub>D</sub> =7A		15		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =200V, V <sub>GS</sub> =10V, I <sub>D</sub> =7A		3.5		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =200V, V <sub>GS</sub> =10V, I <sub>D</sub> =7A		8.9		nC
Diode Forward Voltage	V <sub>SD</sub>	IS=7A, VGS=0V		0.9	1.2	V

#### Package Dimensions

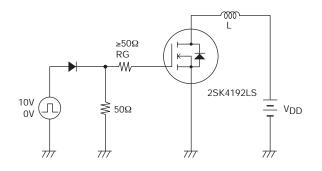
unit : mm (typ) 7509-002

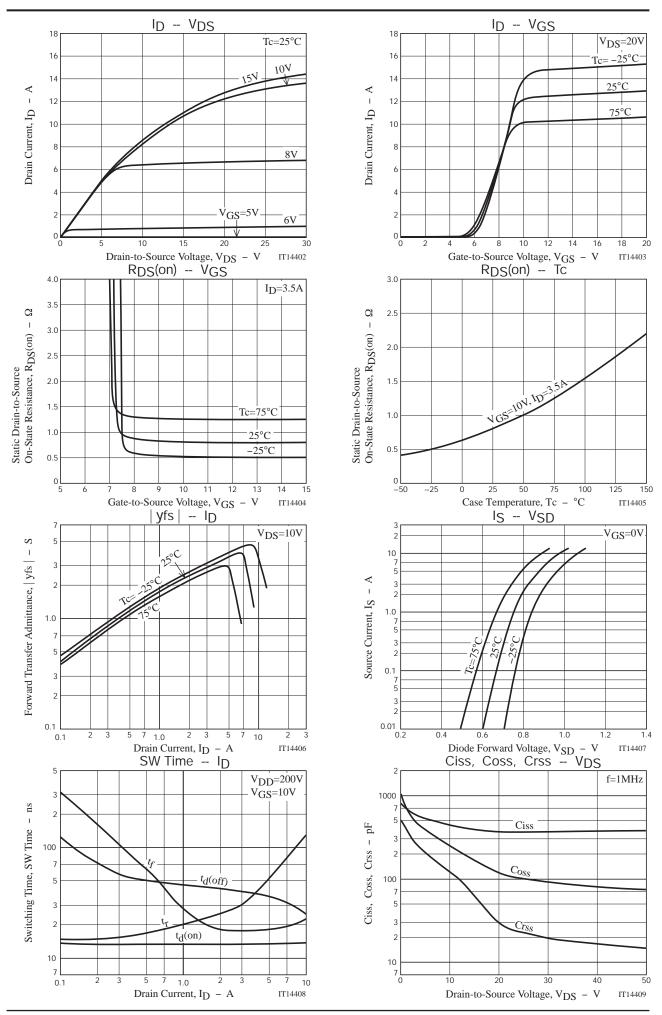


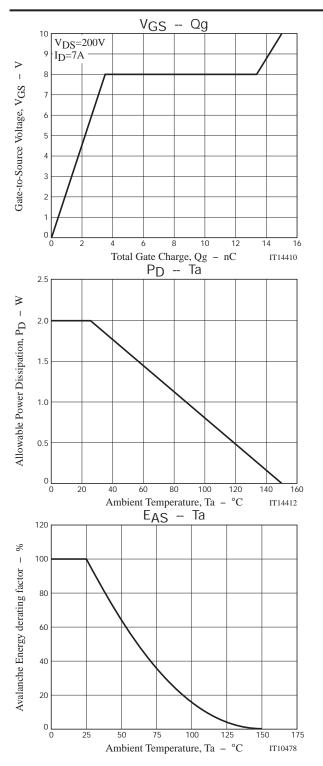
#### Switching Time Test Circuit

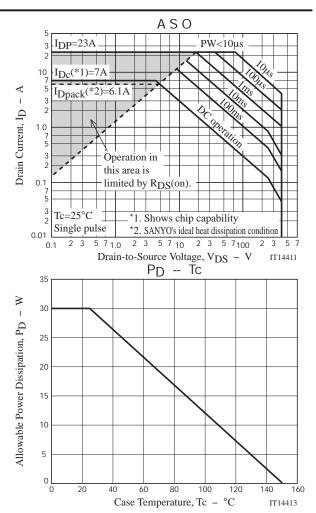


#### Avalanche Resistance Test Circuit









# Note on usage : Since the 2SK4192LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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