



SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

2SK4197LS — 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}		600	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _{Dc} ^{*1}	Limited only by maximum temperature T _{ch} =150°C	3.5	A
	I _{Dpack} ^{*2}	T _c =25°C (SANYO's ideal heat dissipation condition) ^{*3}	3.3	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	13	A
Allowable Power Dissipation	P _D		2.0	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single Pulse) ^{*4}	E _{AS}		36.6	mJ
Avalanche Current ^{*5}	I _{AV}		3.5	A

^{*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} V_{DD}=99V, L=5mH, I_{AV}=3.5A^{*5} L≤5mH, single pulse

Marking : K4197

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2SK4197LS

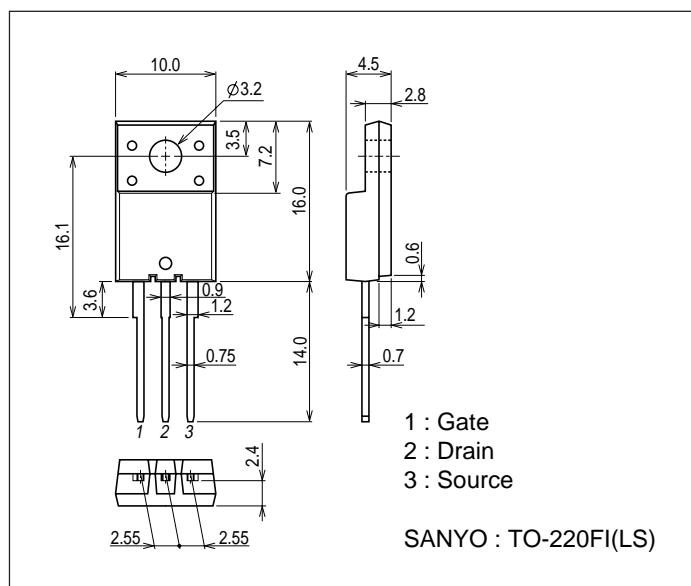
Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V(\text{BR})\text{DSS}$	$I_D=10\text{mA}, V_{GS}=0\text{V}$	600			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=480\text{V}, V_{GS}=0\text{V}$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30\text{V}, V_{DS}=0\text{V}$			± 100	nA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	3		5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}, I_D=1.8\text{A}$	0.8	1.6		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})}$	$I_D=1.8\text{A}, V_{GS}=10\text{V}$		2.5	3.25	Ω
Input Capacitance	C_{iss}	$V_{DS}=30\text{V}, f=1\text{MHz}$	260			pF
Output Capacitance	C_{oss}	$V_{DS}=30\text{V}, f=1\text{MHz}$	50			pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=30\text{V}, f=1\text{MHz}$	9.7			pF
Turn-ON Delay Time	$t_{\text{d}(\text{on})}$	See specified Test Circuit.		12		ns
Rise Time	t_r	See specified Test Circuit.		20		ns
Turn-OFF Delay Time	$t_{\text{d}(\text{off})}$	See specified Test Circuit.		28		ns
Fall Time	t_f	See specified Test Circuit.		12		ns
Total Gate Charge	Q_g	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=3.5\text{A}$	11			nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=3.5\text{A}$	2.6			nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=200\text{V}, V_{GS}=10\text{V}, I_D=3.5\text{A}$	5.8			nC
Diode Forward Voltage	V_{SD}	$I_S=3.5\text{A}, V_{GS}=0\text{V}$	0.9	1.2		V

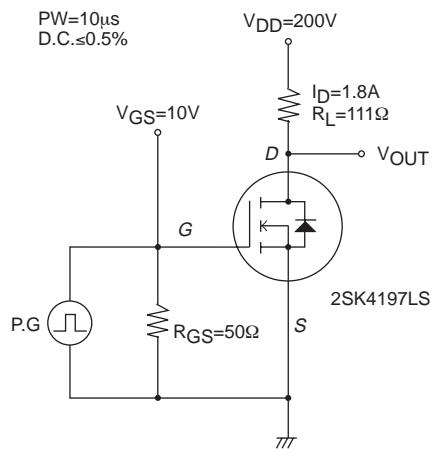
Package Dimensions

unit : mm (typ)

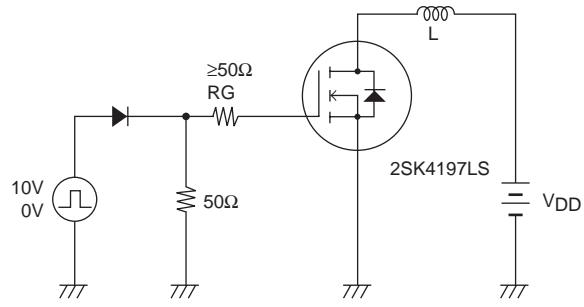
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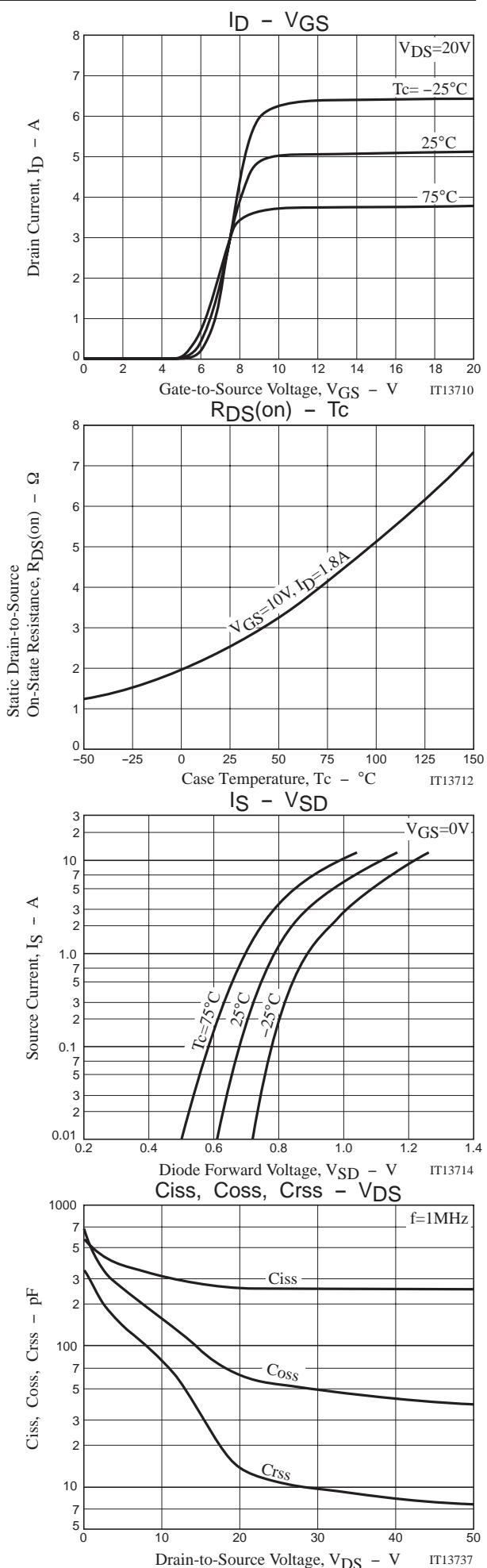
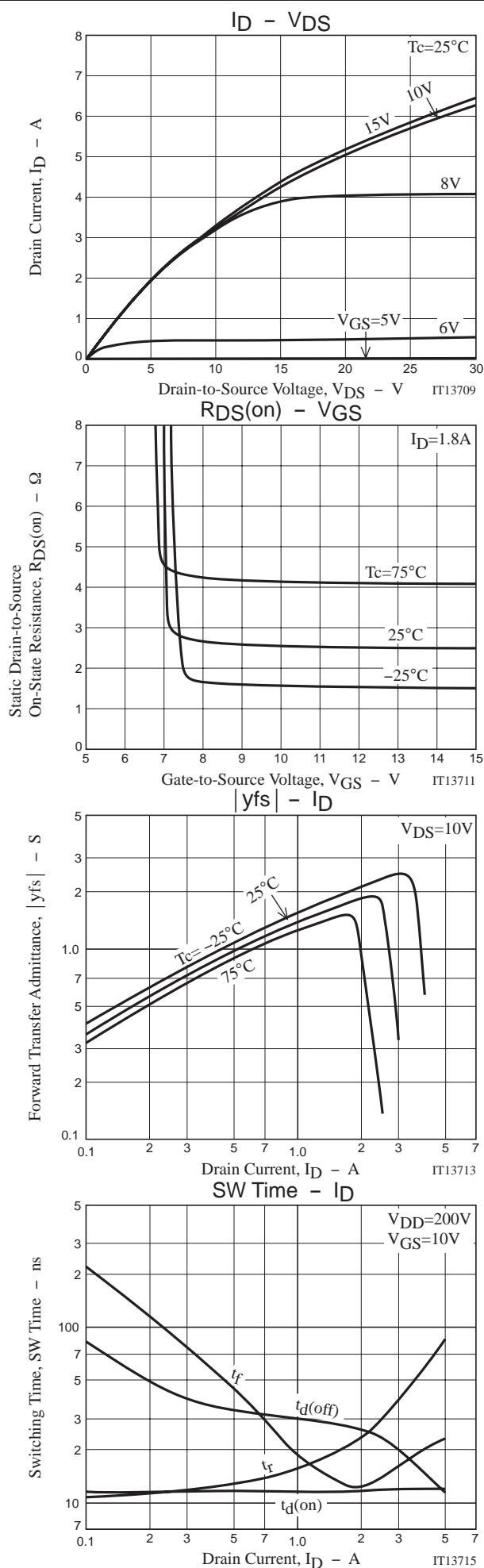
Switching Time Test Circuit



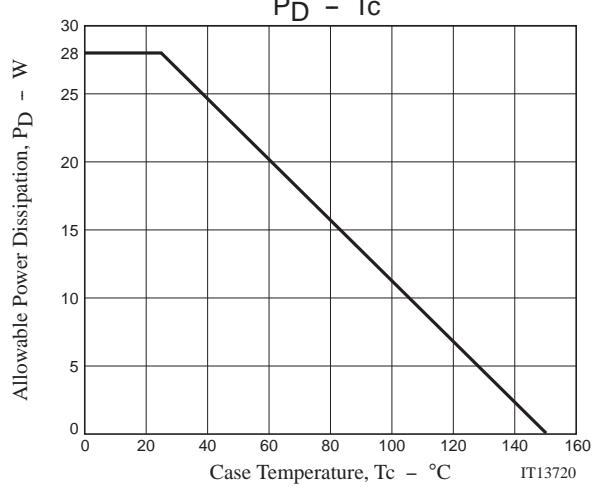
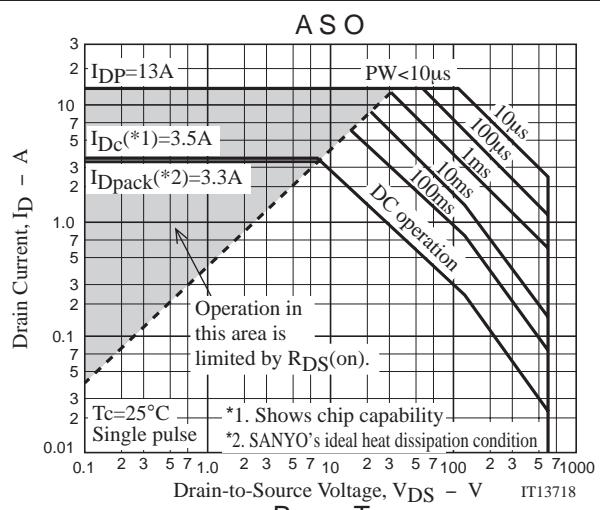
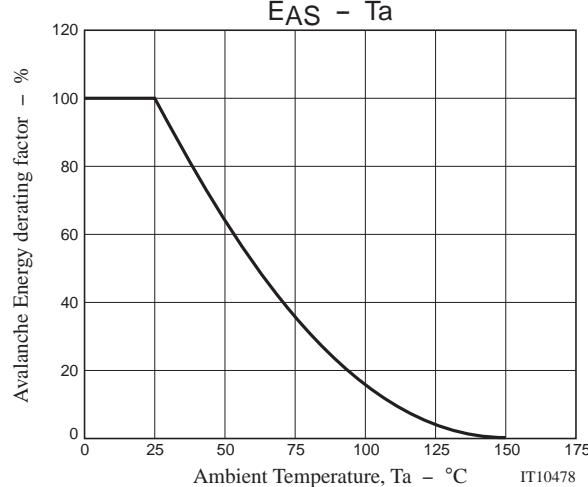
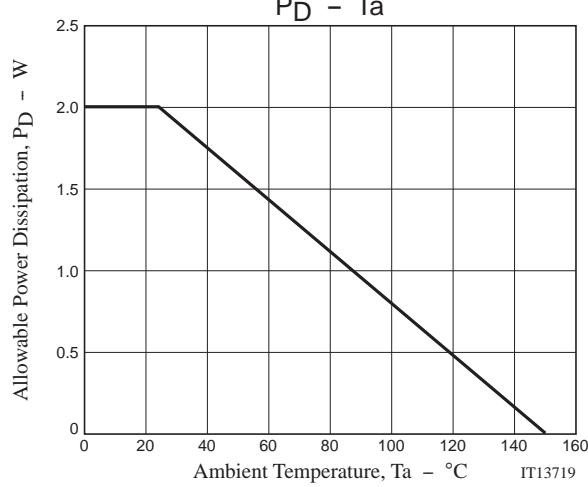
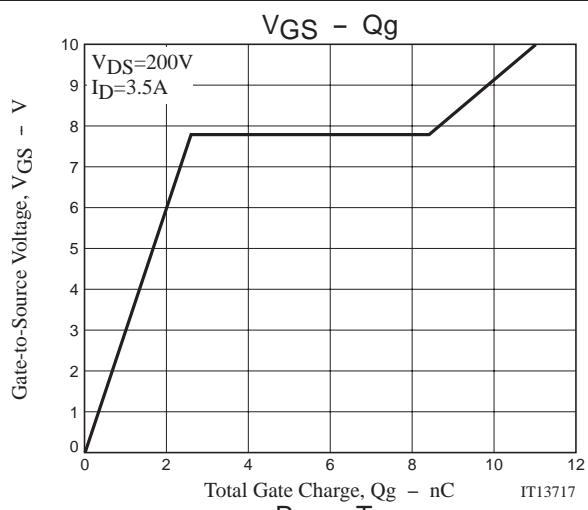
Avalanche Resistance Test Circuit



2SK4197LS



2SK4197LS



Note on usage : Since the 2SK4197LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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