



SANYO Semiconductors

DATA SHEET

2SK4198LS — General-Purpose Switching Device Applications

N-Channel Silicon MOSFET

Features

- ON-resistance $R_{DS(on)}=1.8\Omega$ (typ.)
- Input capacitance $C_{iss}=360\text{pF}$ (typ.)
- 10V drive
- Repetitive avalanche guarantee

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

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 $T_{ch}=150^\circ\text{C}$	5	A
	I_{Dpack} *2	$T_c=25^\circ\text{C}$ (SANYO's ideal heat dissipation condition)*3	4	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	18	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c=25^\circ\text{C}$ (SANYO's ideal heat dissipation condition)*3	30	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) *4	E_{AS}		74.6	mJ
Avalanche Current *5	I_{AV}		5	A
Avalanche Energy (Repetition)	E_{AR}	Limited only by maximum temperature $T_{ch}=150^\circ\text{C}$	3	mJ

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 $V_{DD}=99\text{V}$, $L=5\text{mH}$, $I_{AV}=4.5\text{A}$ *5 $L \leq 5\text{mH}$, Single pulse

Marking : K4198

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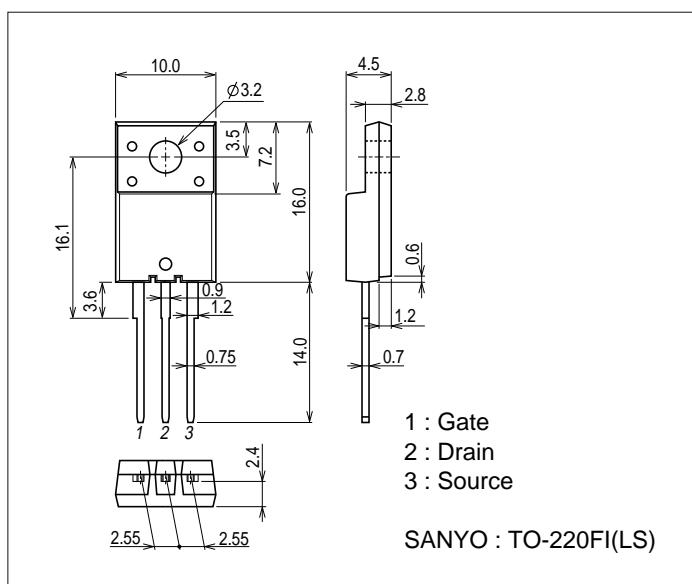
Electrical Characteristics at $T_a=25^\circ\text{C}$

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_{\text{fs}} $	$V_{DS}=10\text{V}$, $I_D=2.5\text{A}$	1.2	2.4		S
Static Drain-to-Source On-State Resistance	$R_{\text{DS(on)}}$	$I_D=2.5\text{A}$, $V_{GS}=10\text{V}$		1.8	2.34	Ω
Input Capacitance	C_{iss}	$V_{DS}=30\text{V}$, $f=1\text{MHz}$	360			pF
Output Capacitance	C_{oss}	$V_{DS}=30\text{V}$, $f=1\text{MHz}$	69			pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=30\text{V}$, $f=1\text{MHz}$	15			pF
Turn-ON Delay Time	$t_{\text{d(on)}}$	See specified Test Circuit.	13			ns
Rise Time	t_r	See specified Test Circuit.	28			ns
Turn-OFF Delay Time	$t_{\text{d(off)}}$	See specified Test Circuit.	39			ns
Fall Time	t_f	See specified Test Circuit.	15			ns
Total Gate Charge	Q_g	$V_{DS}=200\text{V}$, $V_{GS}=10\text{V}$, $I_D=5\text{A}$	14.3			nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=200\text{V}$, $V_{GS}=10\text{V}$, $I_D=5\text{A}$	3.0			nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=200\text{V}$, $V_{GS}=10\text{V}$, $I_D=5\text{A}$	8.2			nC
Diode Forward Voltage	V_{SD}	$I_S=5\text{A}$, $V_{GS}=0\text{V}$		0.9	1.2	V

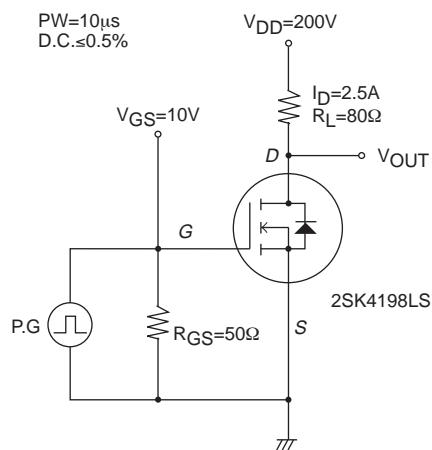
Package Dimensions

unit : mm (typ)

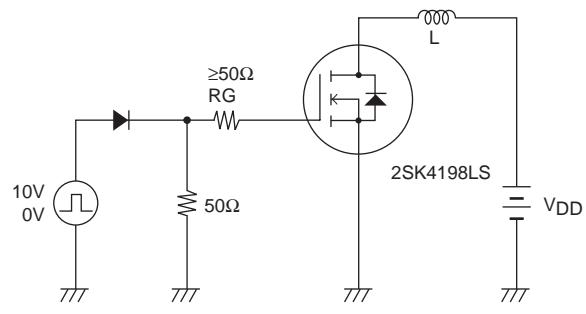
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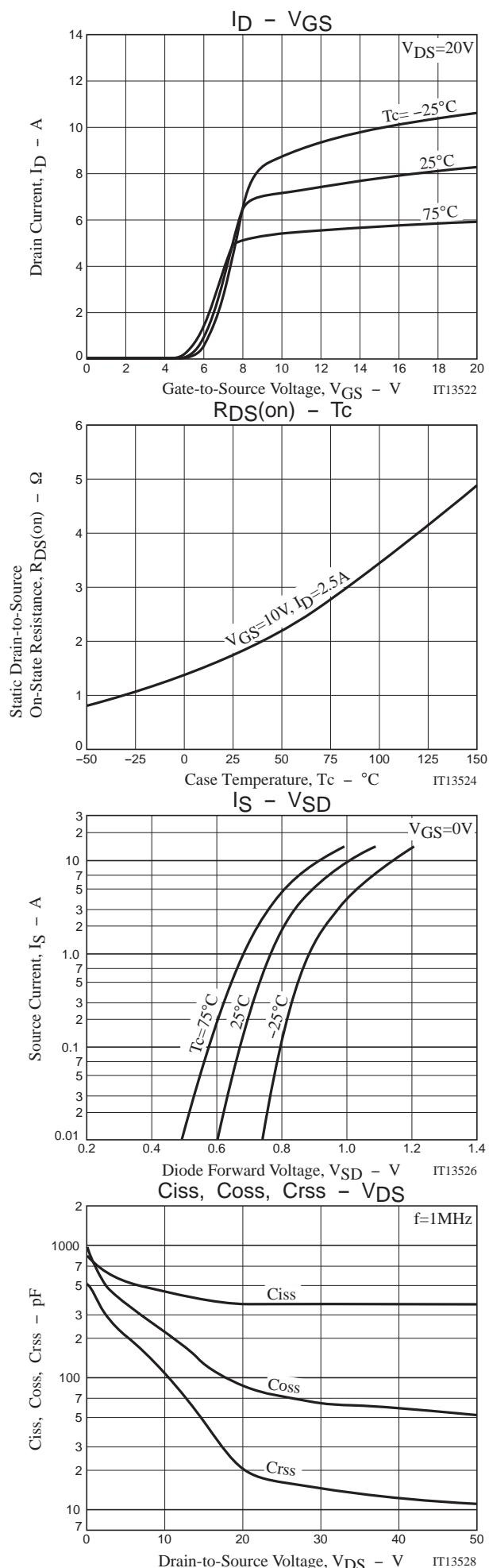
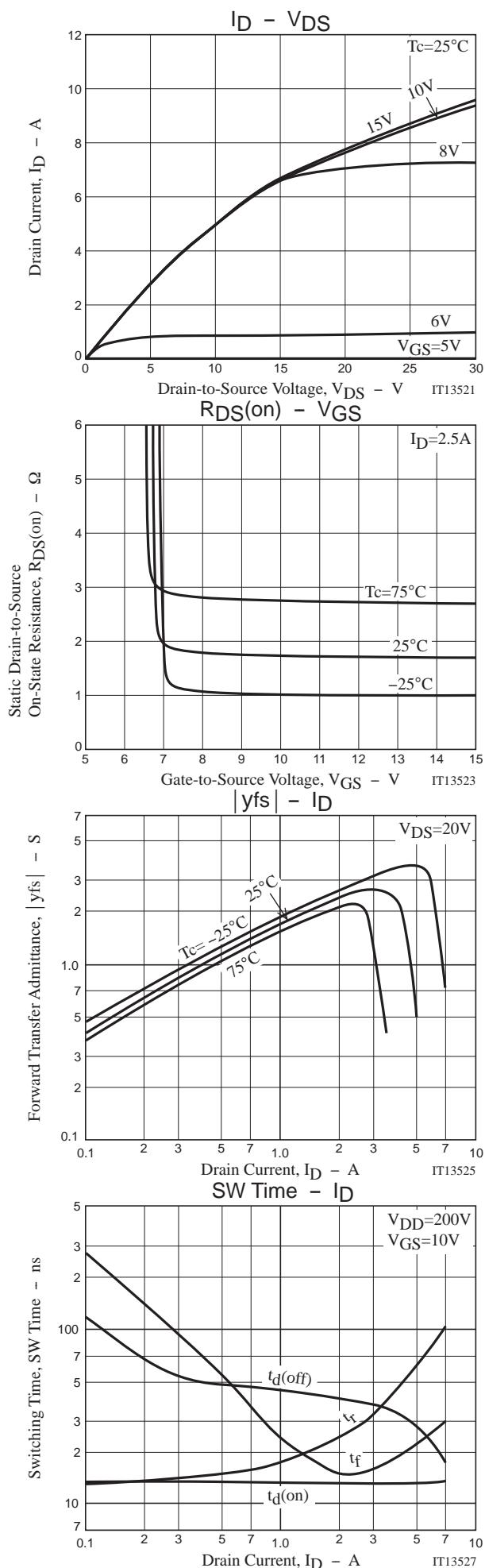
Switching Time Test Circuit

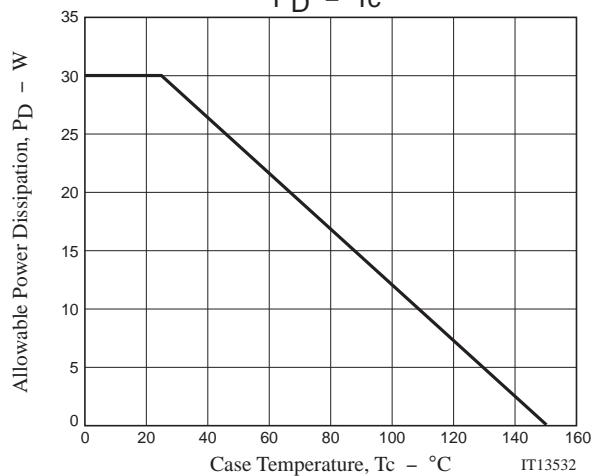
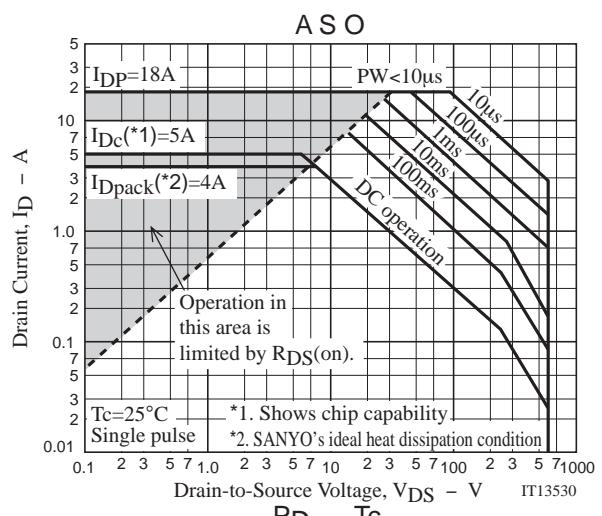
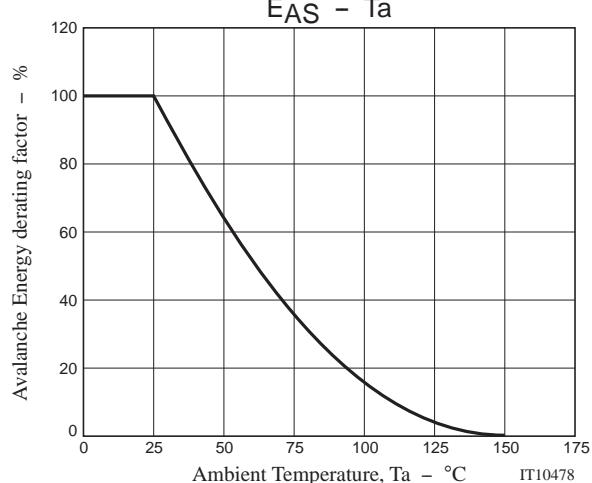
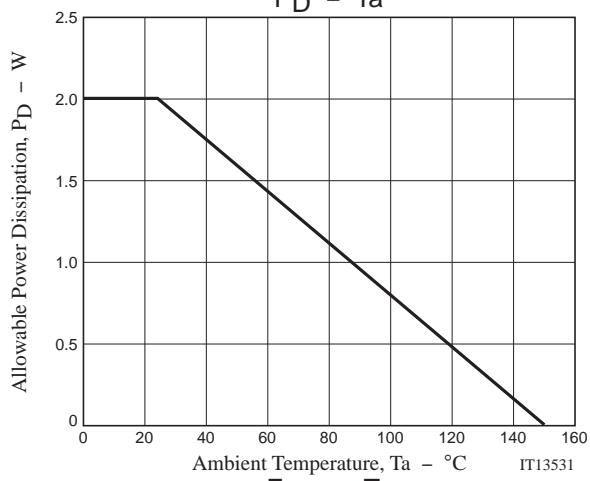
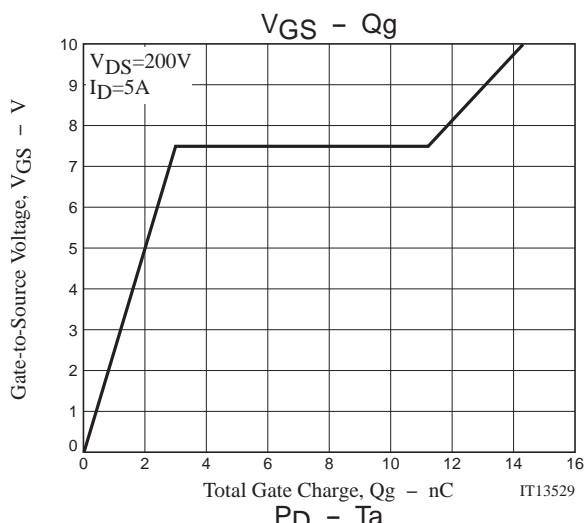


Avalanche Resistance Test Circuit



2SK4198LS





Note on usage : Since the 2SK4198LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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