



2SK1412LS — N-Channel Silicon MOSFET

High-Voltage, High-Speed Switching Applications

Features

- Low ON-resistance, low input capacitance.
- Ultrahigh-speed switching.
- High reliability (Adoption of HVP process).
- Micaless package facilitating mounting.

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		1500	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		0.1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	0.2	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c=25^\circ\text{C}$	20	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	1500			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=1200\text{V}$, $V_{GS}=0\text{V}$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.5		3.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=20\text{V}$, $I_D=50\text{mA}$	50	100		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=50\text{mA}$, $V_{GS}=10\text{V}$		140	200	Ω
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		40		pF
Output Capacitance	C_{oss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		12		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		3.0		pF

Marking : K1412

Continued on next page.

(Note) Be careful in handling the 2SK1412LS because it has no protection diode between gate and source.

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8250QB MS IM TC-0000089 / N1501 TS IM TA-3431 / 51099TH (KT) / 41293TH (KOTO) AX-9637 No.4228-1/4

2SK1412LS

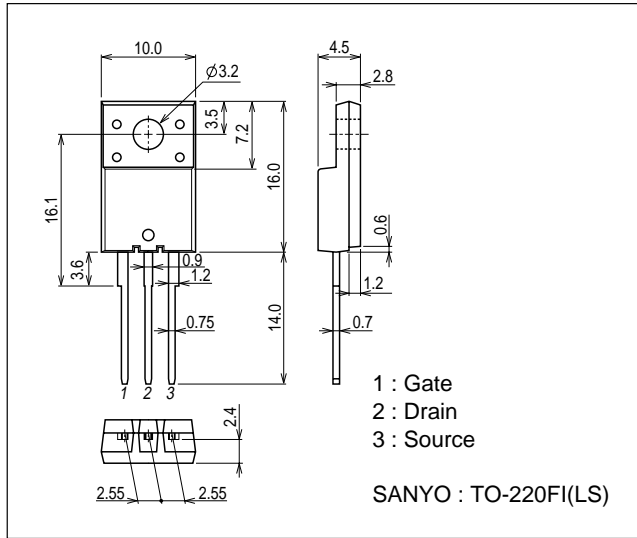
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		15		ns
Rise Time	t_r	See specified Test Circuit.		25		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		50		ns
Fall Time	t_f	See specified Test Circuit.		350		ns
Diode Forward Voltage	V_{SD}	$I_S=0.1A, V_{GS}=0V$		1.0	1.5	V

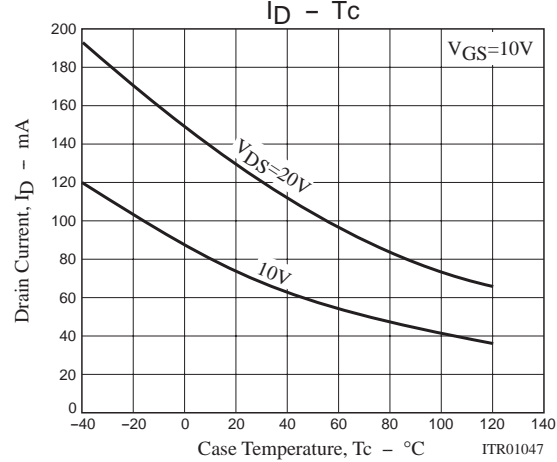
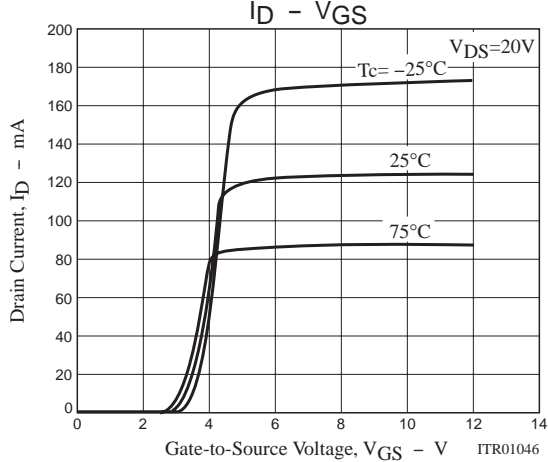
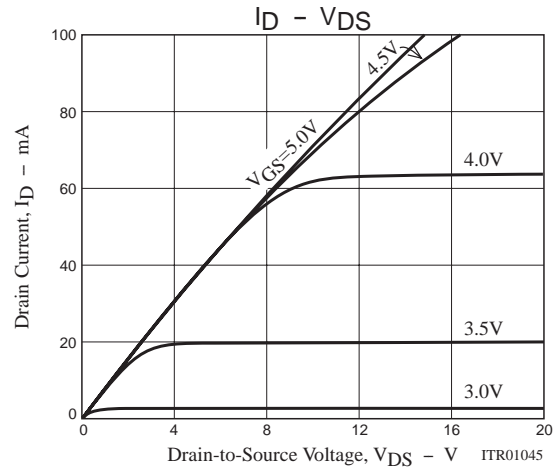
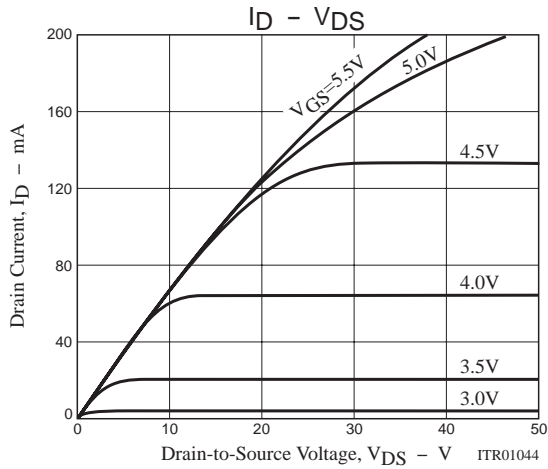
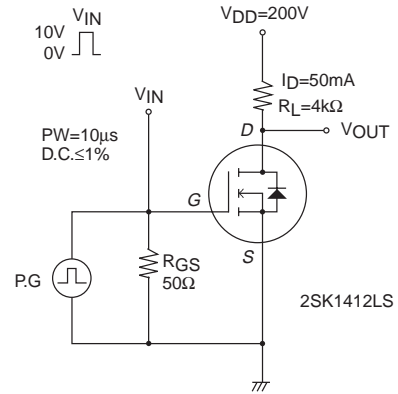
Package Dimensions

unit : mm (typ)

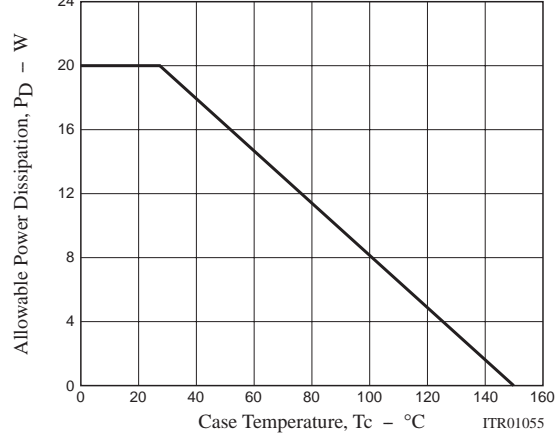
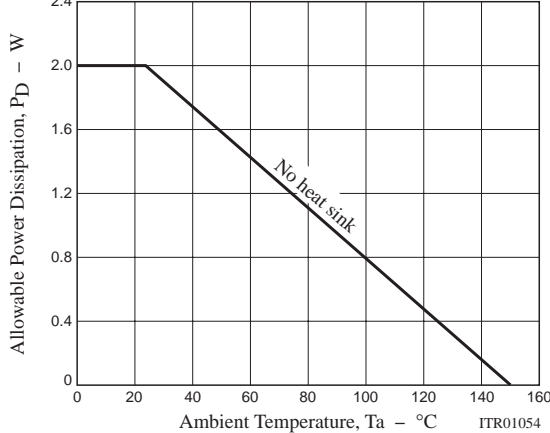
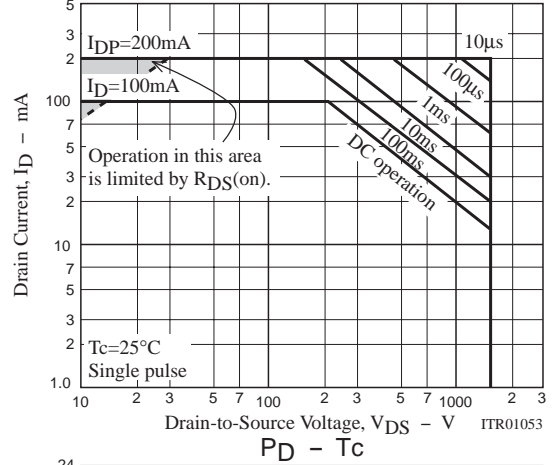
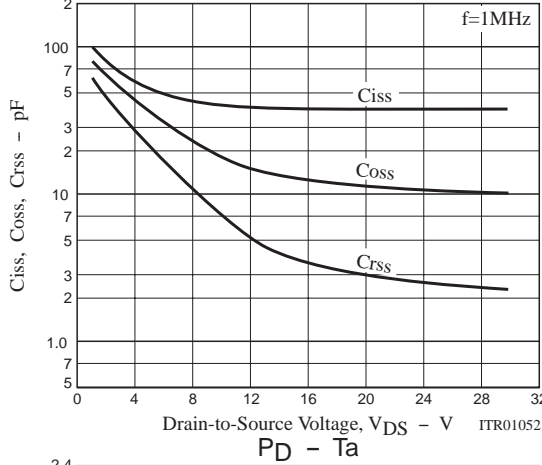
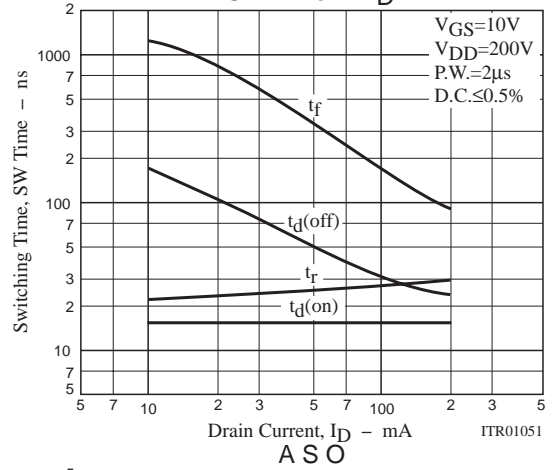
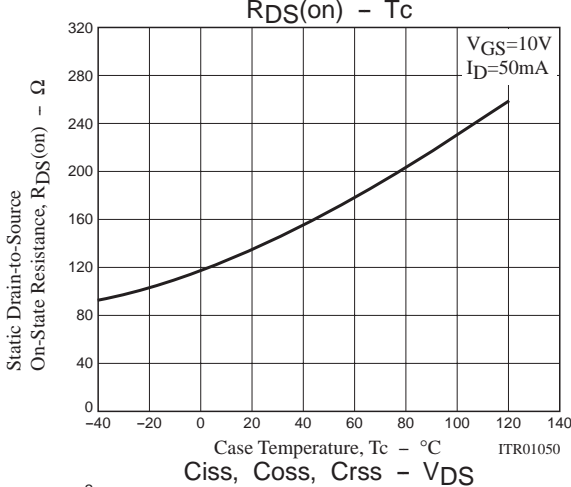
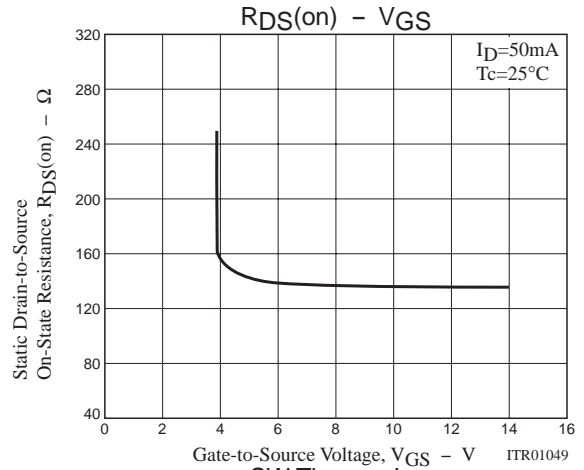
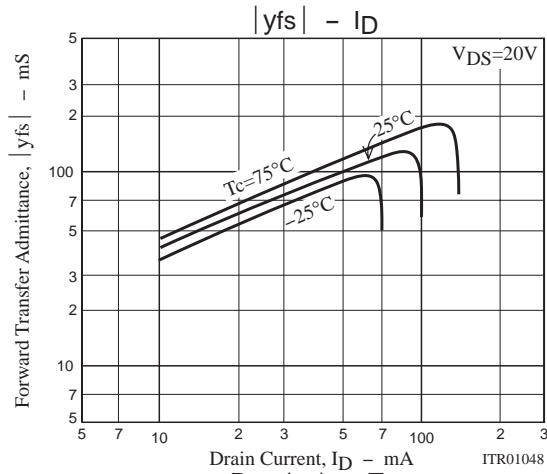
7509-002



Switching Time Test Circuit



2SK1412LS



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