



# 2SK1412LS

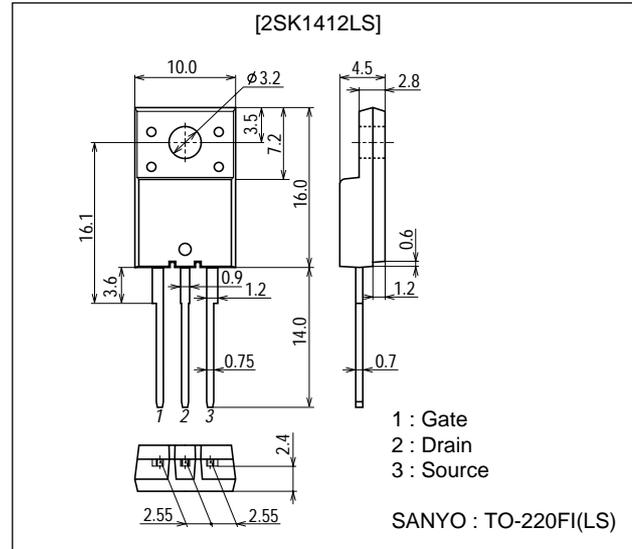
## Ultrahigh-Speed Switching Applications

### Features

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

### Package Dimensions

unit : mm  
2078C



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		1500	V
Gate-to-Source Voltage	V <sub>GS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		0.1	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	0.2	A
Allowable Power Dissipation	P <sub>D</sub>		2.0	W
		T <sub>c</sub> =25°C	20	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =1mA, V <sub>GS</sub> =0	1500			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =1200V, V <sub>GS</sub> =0			100	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0			±100	nA

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

Continued on next page.

Marking : K1412

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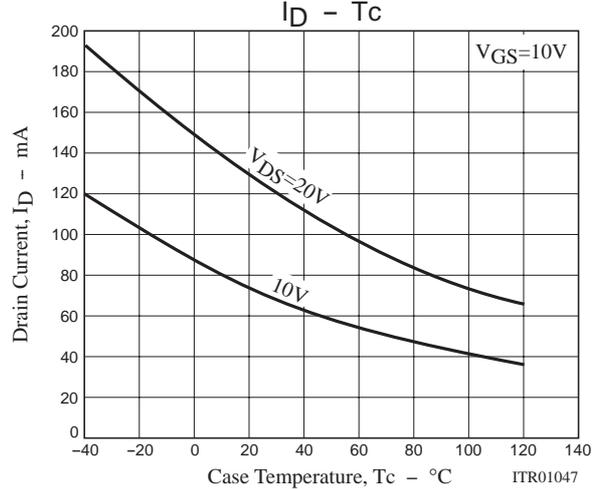
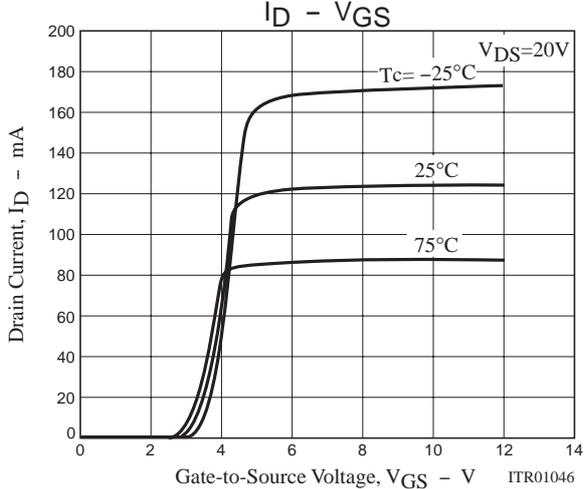
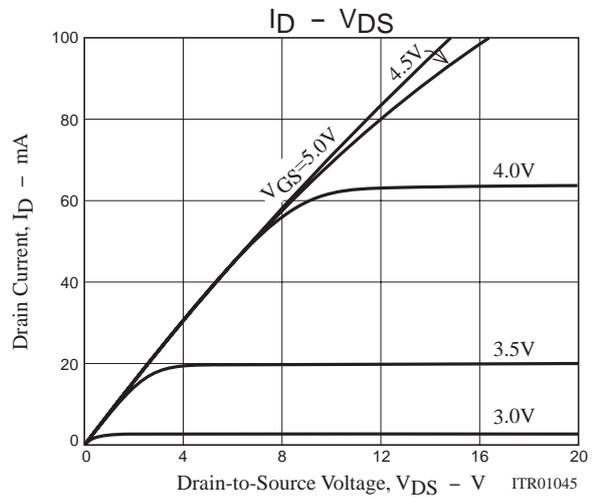
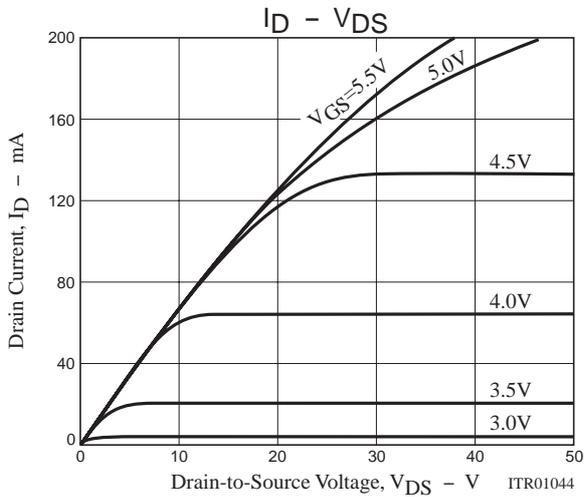
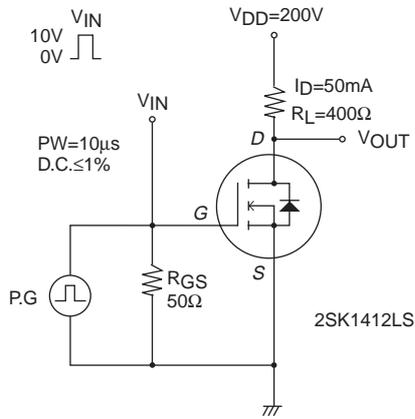
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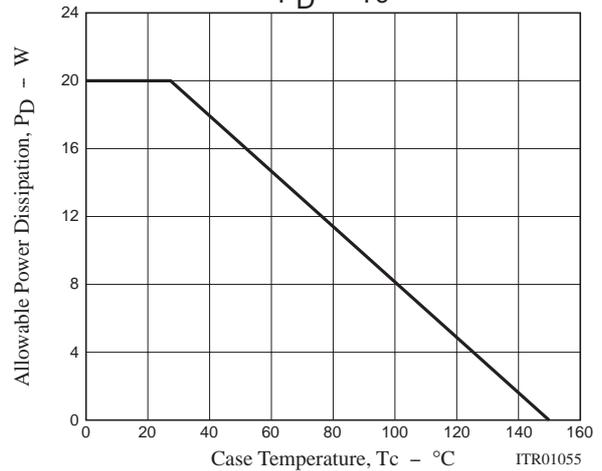
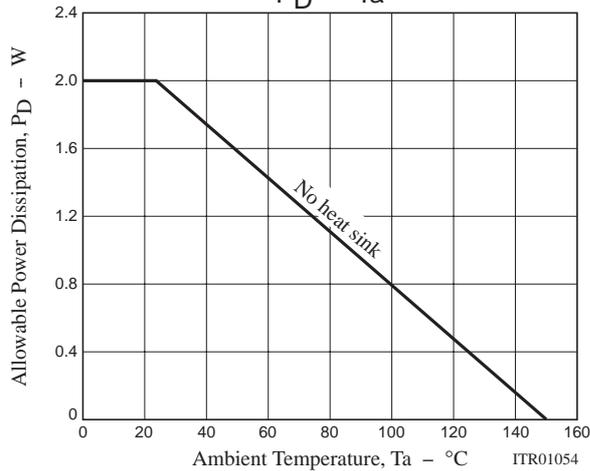
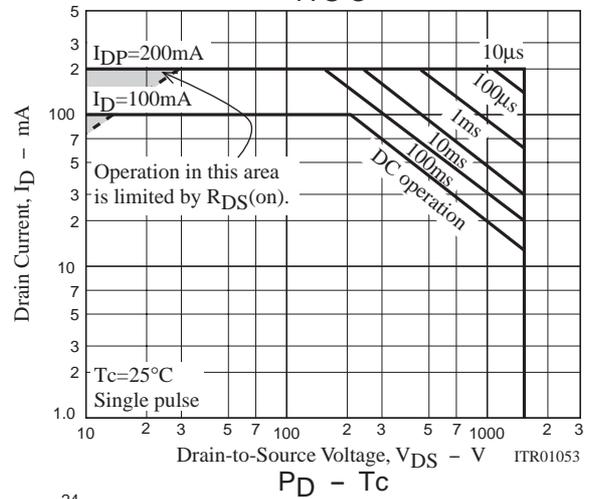
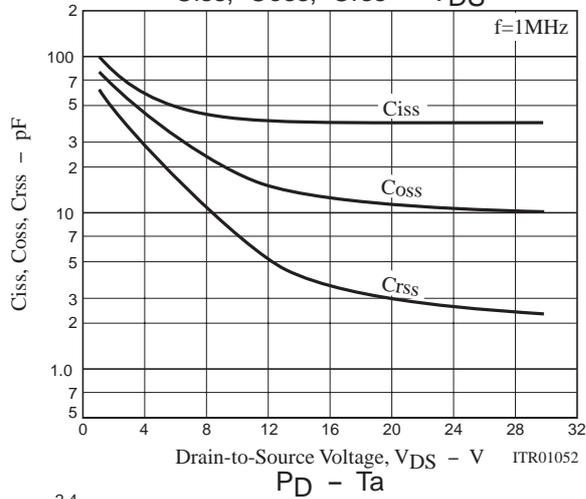
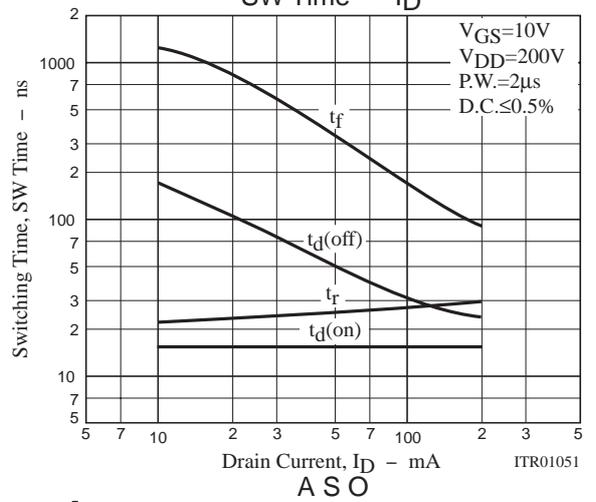
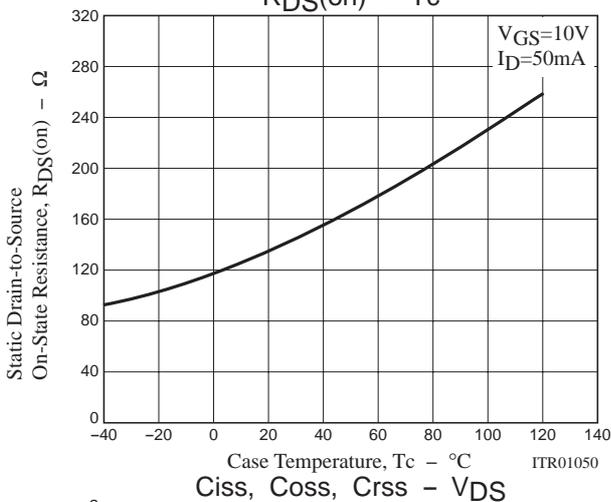
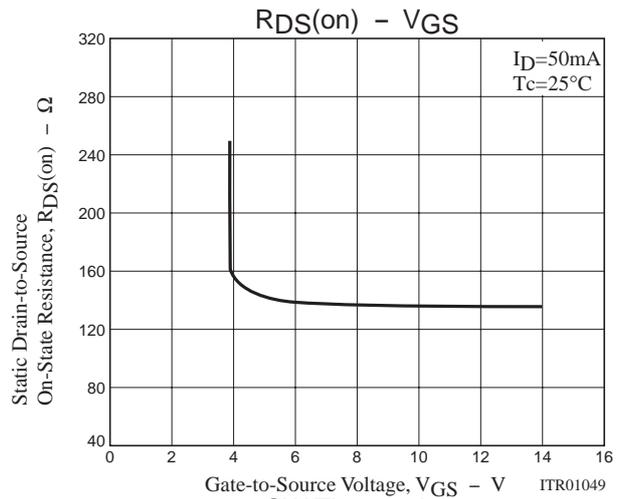
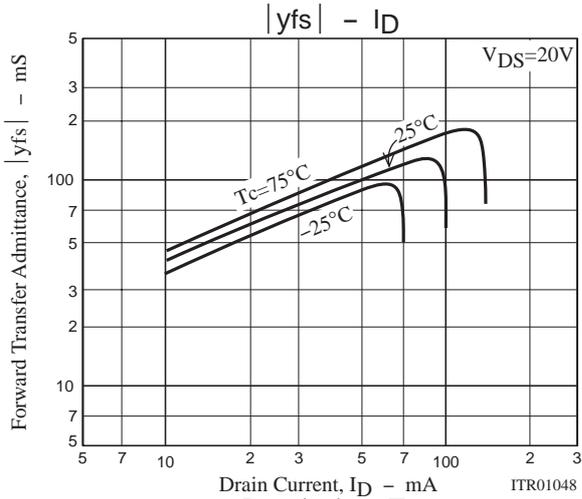
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.5		3.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=20V, I_D=50mA$	50	100		mS
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=50mA, V_{GS}=10V$		140	200	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		40		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		12		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		3.0		pF
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	$V_{SD}$	$I_S=0.1A, V_{GS}=0$		1.0	1.5	V

## Switching Time Test Circuit



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