



N-Channel Silicon MOSFET  
**2SK4064LS — General-Purpose Switching Device Applications**

### Features

- Low ON-resistance, low input capacitance, ultrahigh-speed switching.
- High reliability (Adoption of HVP process).
- Attachment workability is good by Mica-less package.
- Avalanche resistance 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	$V_{GSS}$		$\pm 30$	V
Drain Current (DC)	$I_{Dc}^*$ <sup>1</sup>	Limited only by maximum temperature	14	A
	$I_{Dpack}^*$ <sup>2</sup>	$T_c=25^\circ\text{C}$ (SANYO's ideal heat dissipation condition) <sup>*3</sup>	10	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	56	A
Allowable Power Dissipation	$P_D$		2.0	W
		$T_c=25^\circ\text{C}$ (SANYO's ideal heat dissipation condition) <sup>*3</sup>	45	W
Channel Temperature	$T_{ch}$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$
Avalanche Energy (Single Pulse) <sup>*4</sup>	$E_{AS}$		586	mJ
Avalanche Current <sup>*5</sup>	$I_{AV}$		14	A

<sup>\*1</sup> Shows chip capability

<sup>\*2</sup> Package limited

<sup>\*3</sup> 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.

<sup>\*4</sup>  $V_{DD}=99\text{V}$ ,  $L=5\text{mH}$ ,  $I_{AV}=14\text{A}$

<sup>\*5</sup>  $L \leq 5\text{mH}$ , single pulse

Marking : K4064

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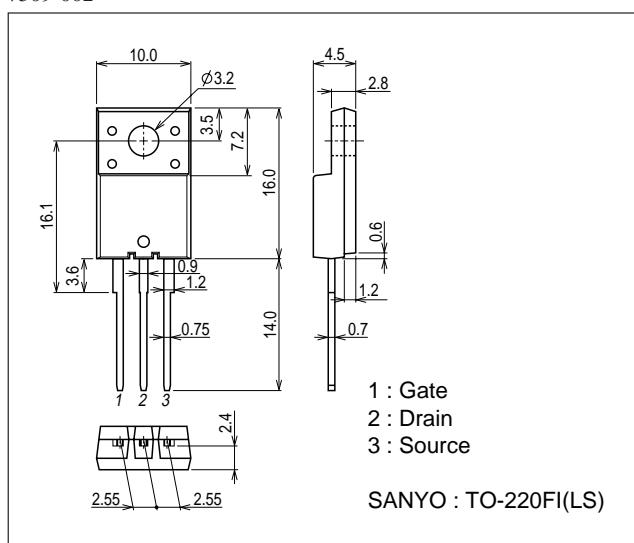
Electrical Characteristics at  $T_a=25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$I_D=1\text{mA}$ , $V_{GS}=0\text{V}$	600			V
Zero-Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{DS}=600\text{V}$ , $V_{GS}=0\text{V}$			100	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{\text{GSS}}$	$V_{GS}=\pm 30\text{V}$ , $V_{DS}=0\text{V}$			$\pm 100$	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}} $	$V_{DS}=10\text{V}$ , $I_D=6\text{A}$	5	10		S
Static Drain-to-Source On-State Resistance	$R_{DS(\text{on})}$	$I_D=6\text{A}$ , $V_{GS}=15\text{V}$		0.45	0.58	$\Omega$
Input Capacitance	$C_{\text{iss}}$	$V_{DS}=30\text{V}$ , $f=1\text{MHz}$	2000			pF
Output Capacitance	$C_{\text{oss}}$	$V_{DS}=30\text{V}$ , $f=1\text{MHz}$	210			pF
Reverse Transfer Capacitance	$C_{\text{rss}}$	$V_{DS}=30\text{V}$ , $f=1\text{MHz}$	12			pF
		$V_{DS}=5\text{V}$ , $f=1\text{MHz}$	25			pF
Turn-ON Delay Time	$t_{\text{d}(\text{on})}$	See specified Test Circuit.	52			ns
Rise Time	$t_r$	See specified Test Circuit.	84			ns
Turn-OFF Delay Time	$t_{\text{d}(\text{off})}$	See specified Test Circuit.	78			ns
Fall Time	$t_f$	See specified Test Circuit.	58			ns
Total Gate Charge	$Q_g$	$V_{DS}=200\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=12\text{A}$	37			nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=200\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=12\text{A}$	14			nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=200\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=12\text{A}$	12.5			nC
Diode Forward Voltage	$V_{SD}$	$I_S=12\text{A}$ , $V_{GS}=0\text{V}$		0.9	1.2	V

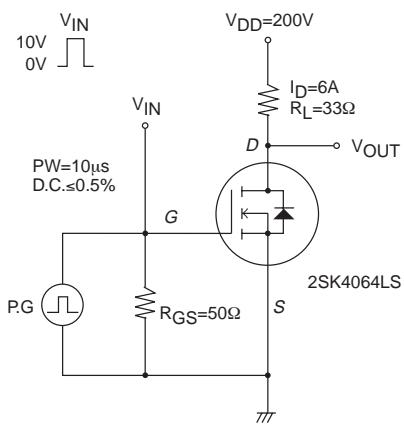
## Package Dimensions

unit : mm (typ)

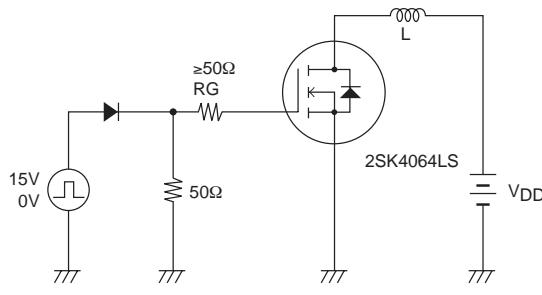
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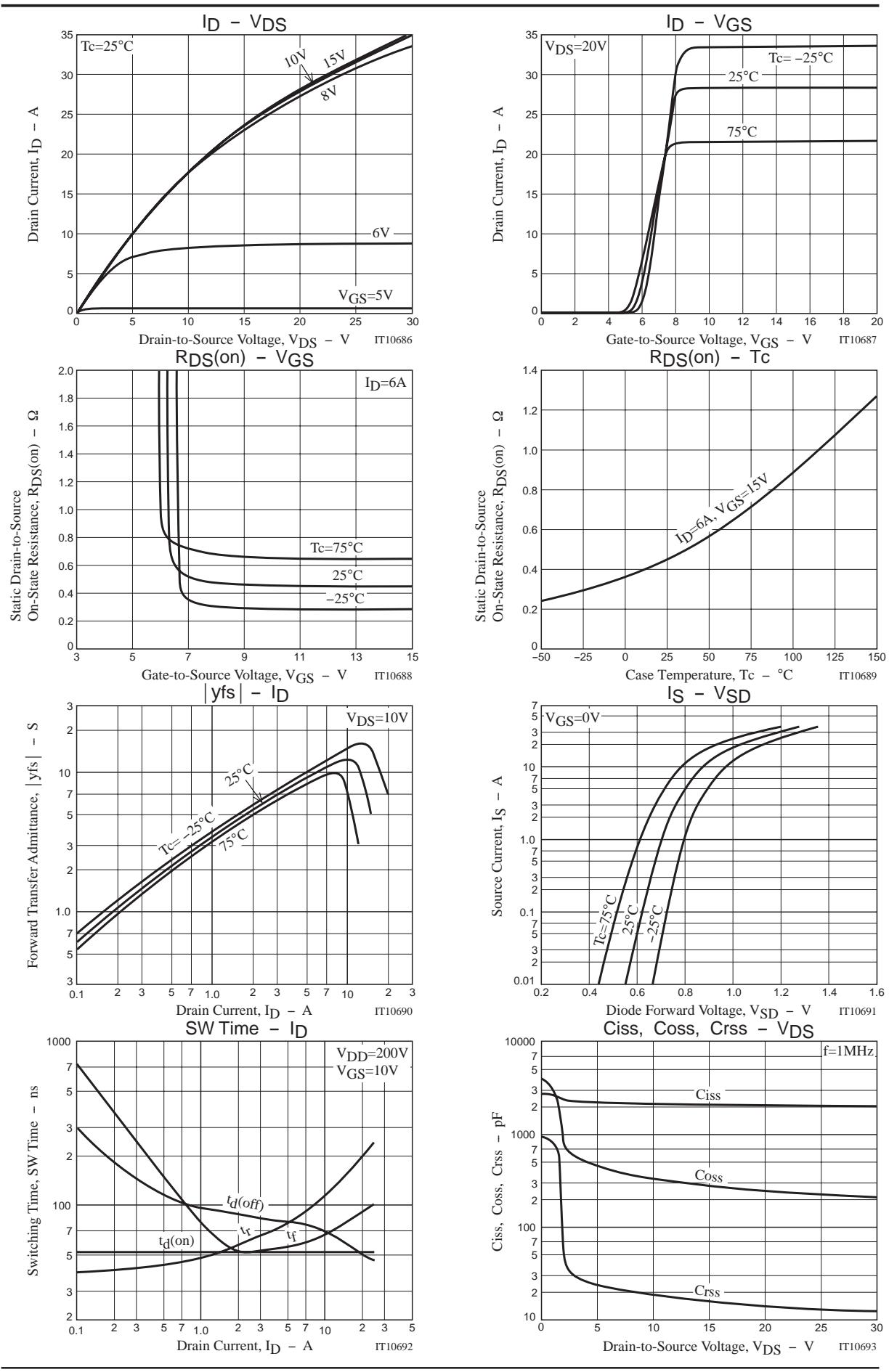
## Switching Time Test Circuit

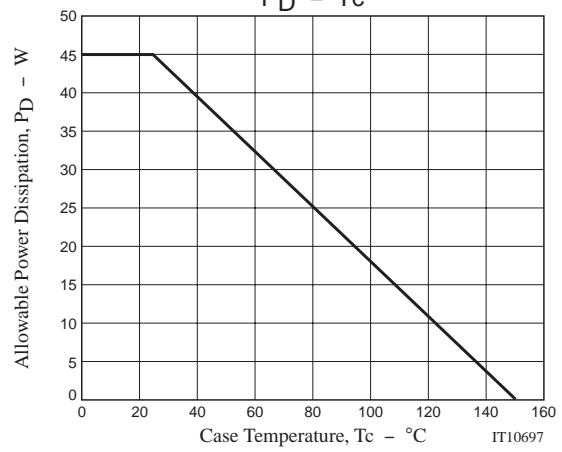
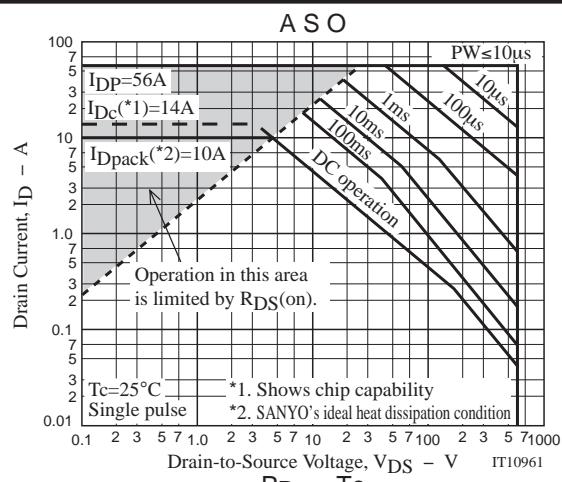
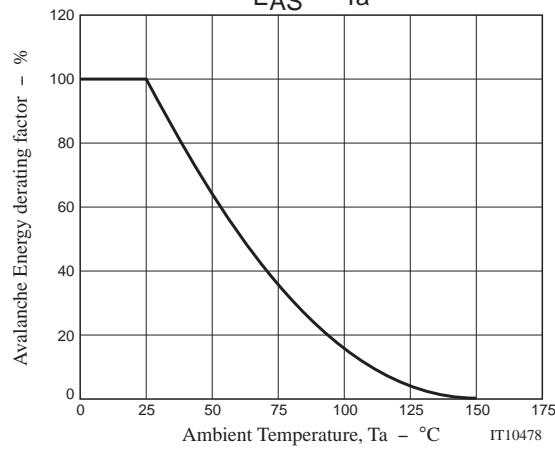
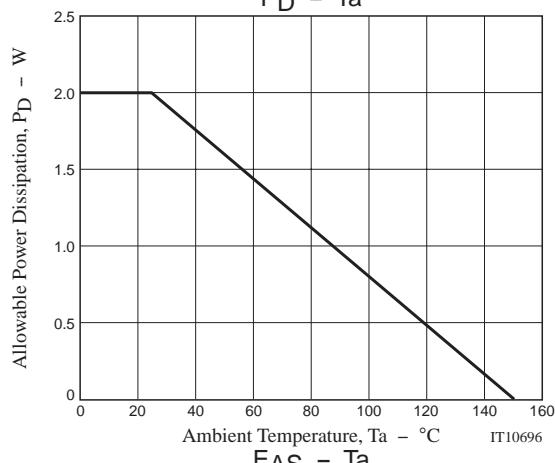
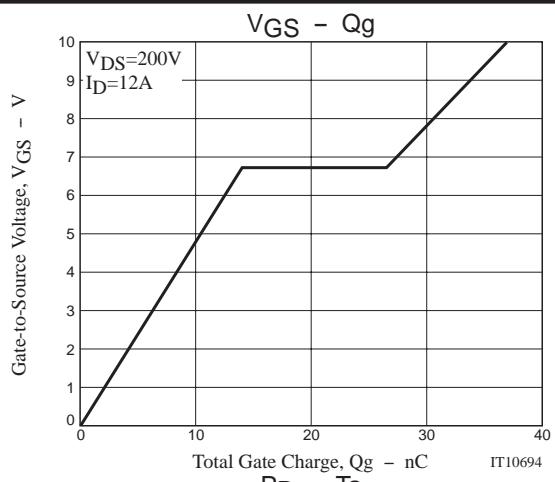


## Avalanche Resistance Test Circuit



# 2SK4064LS





Note on usage : Since the 2SK4064LS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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