



SANYO Semiconductors

## DATA SHEET

N-Channel Silicon MOSFET

# 2SK4179 — General-Purpose Switching Device Applications

## Features

- Low ON-resistance.
- Motor drive.
- Avalanche resistance guarantee.
- 10V drive.

## Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		75	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		80	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	320	A
Allowable Power Dissipation	P <sub>D</sub>		1.75	W
		Tc=25°C	70	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C
Avalanche Energy (Single pulse) *1	E <sub>AS</sub>		100	mJ
Avalanche Current *2	I <sub>AV</sub>		48	A

Note : \*1 V<sub>DD</sub>=30V, L=50μH, I<sub>AV</sub>=48A

\*2 L≤50μH, Single pulse

Marking : K4179

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## 2SK4179

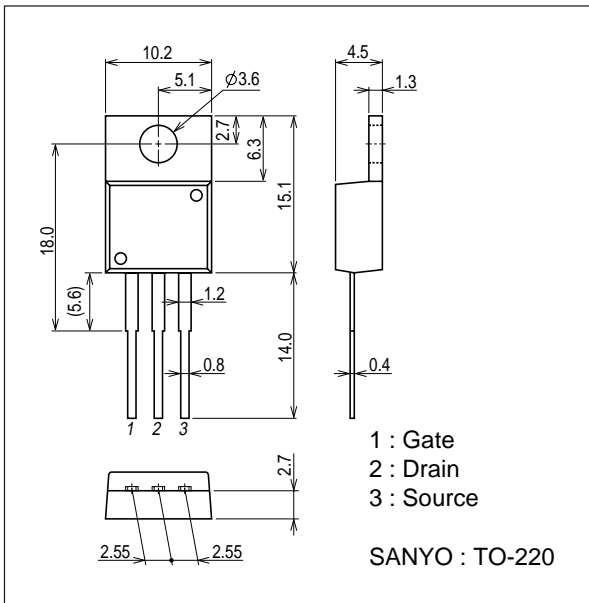
### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	75			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=75V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2		4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=40A$	21	35		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=40A, V_{GS}=10V$		10.5	13.7	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		5400		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		480		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		350		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		62		ns
Rise Time	$t_r$	See specified Test Circuit.		335		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		220		ns
Fall Time	$t_f$	See specified Test Circuit.		160		ns
Total Gate Charge	$Q_g$	$V_{DS}=30V, V_{GS}=10V, I_D=80A$		100		nC
Gate-to-Source Charge	$Q_{gs}$	$V_{DS}=30V, V_{GS}=10V, I_D=80A$		30		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$	$V_{DS}=30V, V_{GS}=10V, I_D=80A$		28		nC
Diode Forward Voltage	$V_{SD}$	$I_S=80A, V_{GS}=0V$		1.07	1.5	V

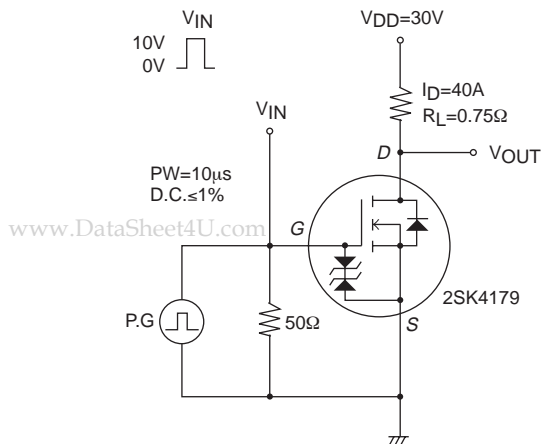
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unit : mm (typ)

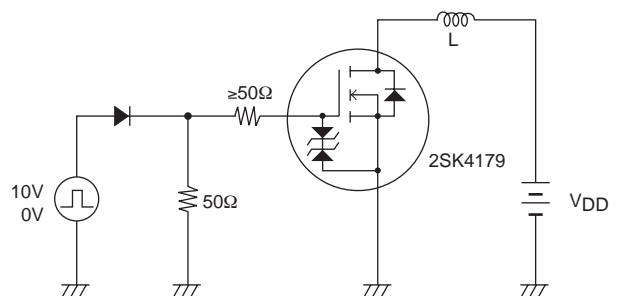
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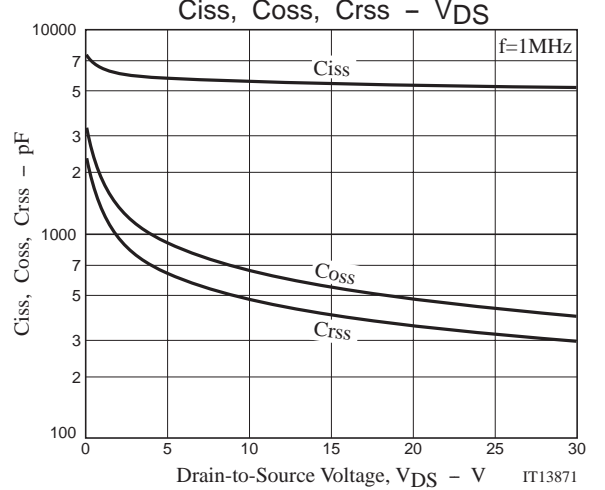
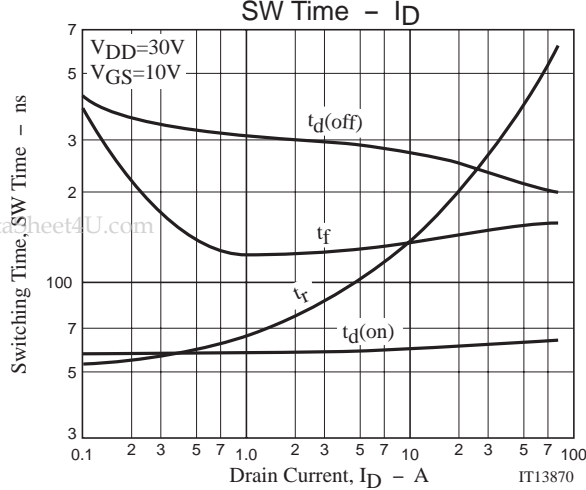
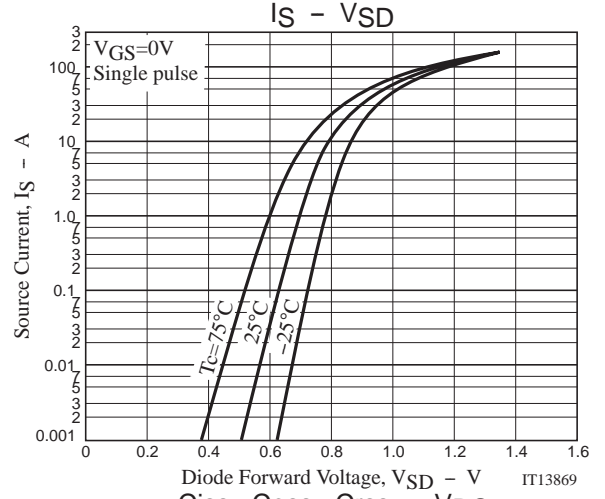
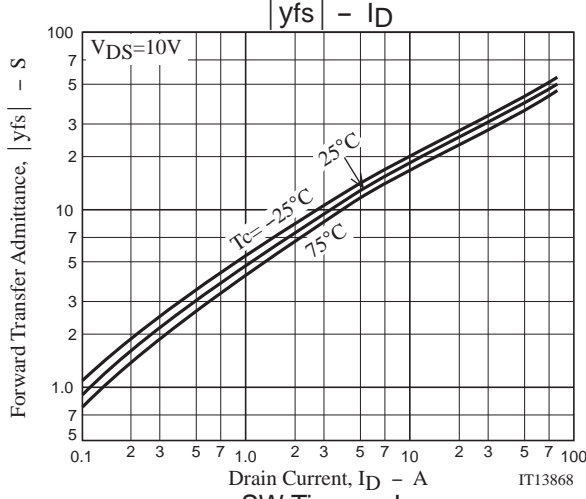
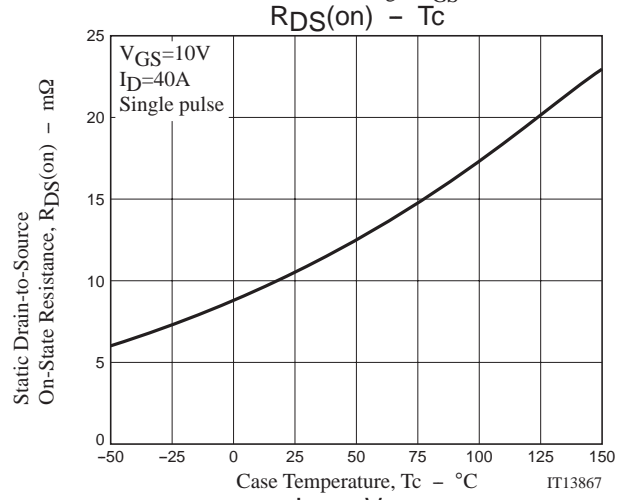
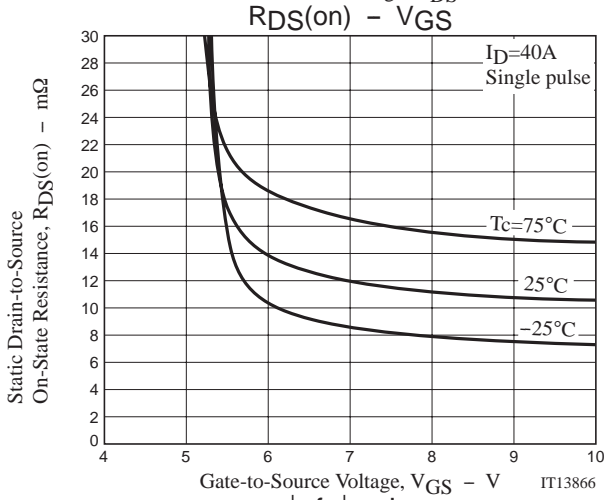
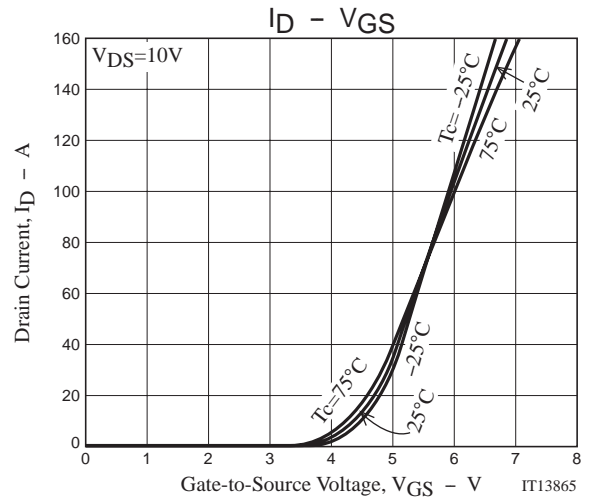
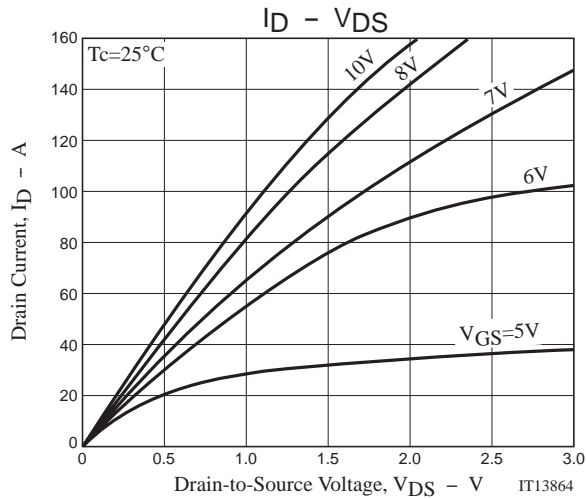


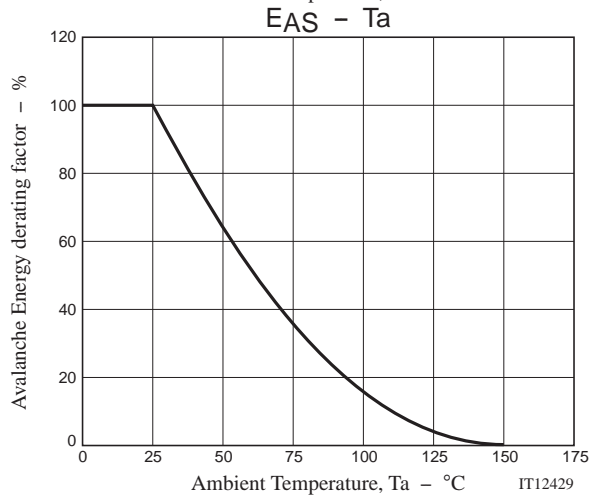
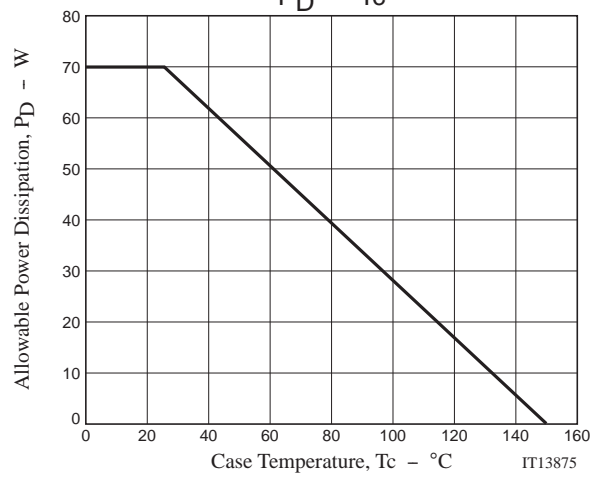
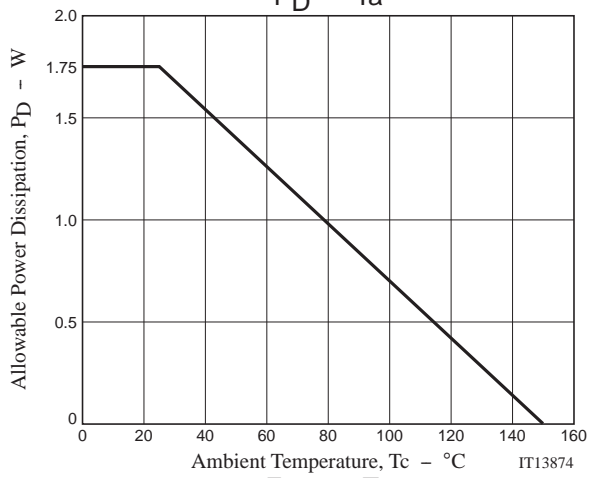
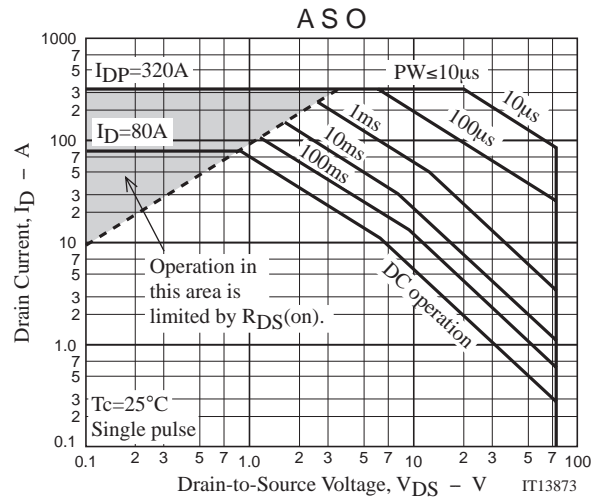
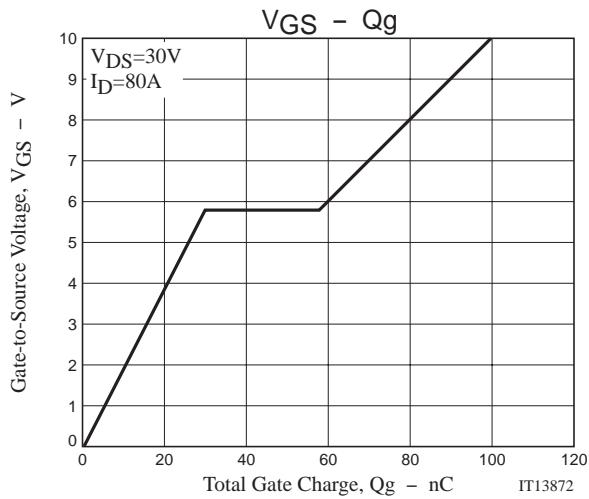
### Switching Time Test Circuit



### Avalanche Resistance Test Circuit







Note on usage : Since the 2SK4179 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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