



SANYO Semiconductors

DATA SHEET

2SK4179 — N-Channel Silicon MOSFET

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 _{DSS}		75	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		80	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	320	A
Allowable Power Dissipation	P _D		1.75	W
		T _c =25°C	70	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single pulse) *1	E _{AS}		100	mJ
Avalanche Current *2	I _{AV}		48	A

Note : *1 V_{DD}=30V, L=50μH, I_{AV}=48A

*2 L≤50μH, Single pulse

Marking : K4179

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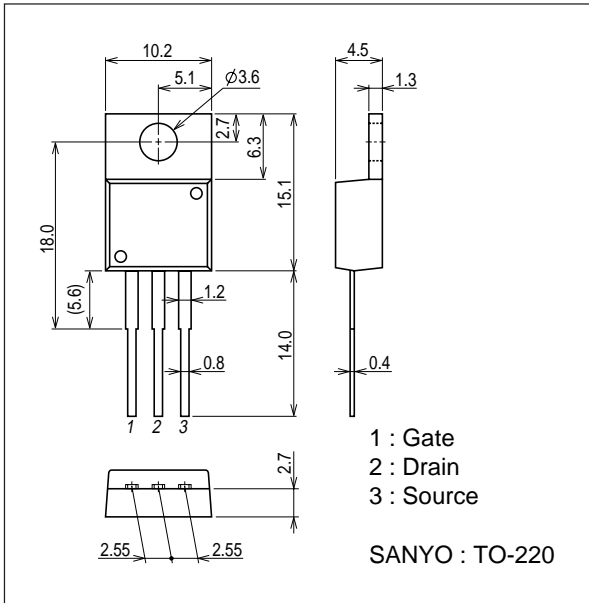
Electrical Characteristics at Ta=25°C

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	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$			± 10	μA
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

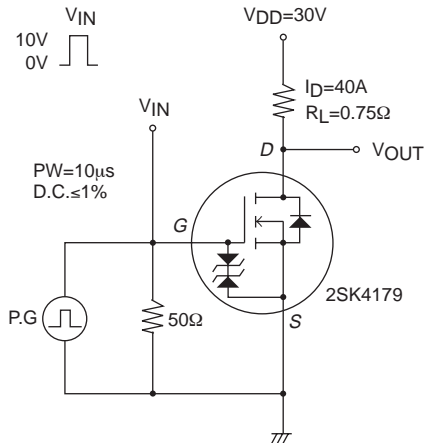
Package Dimensions

unit : mm (typ)

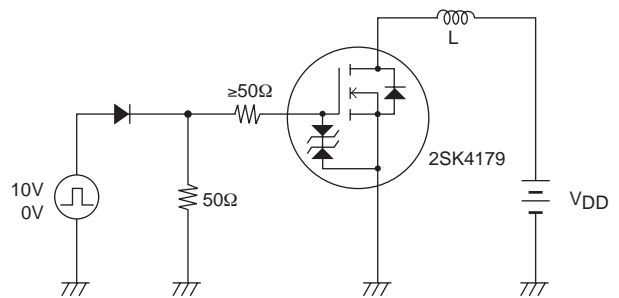
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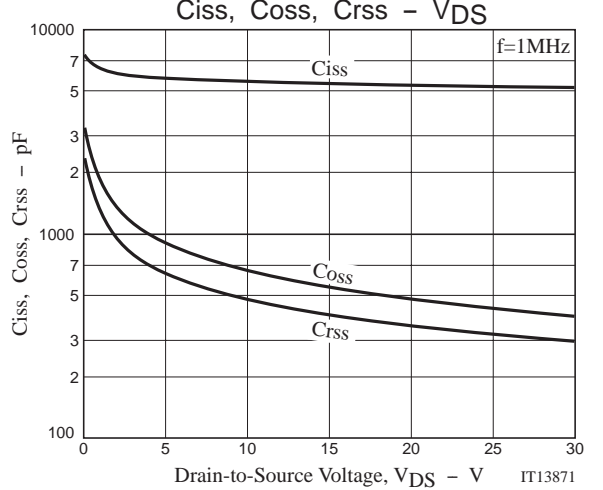
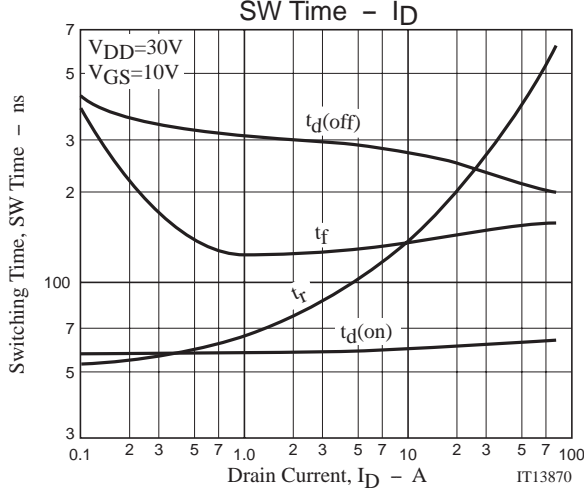
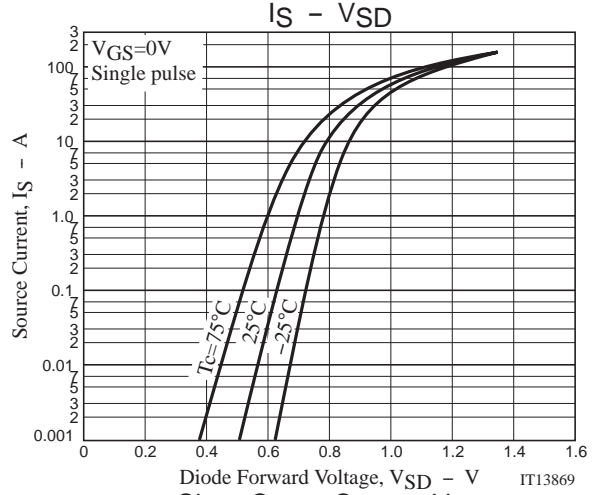
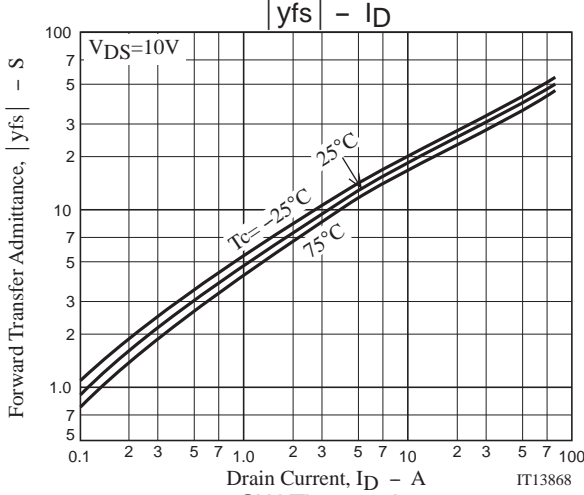
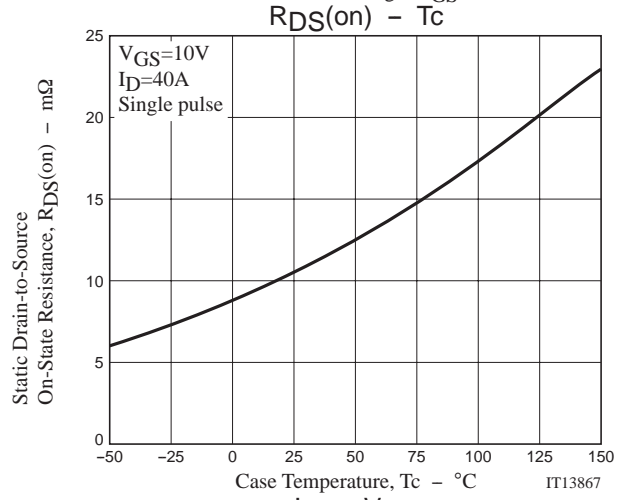
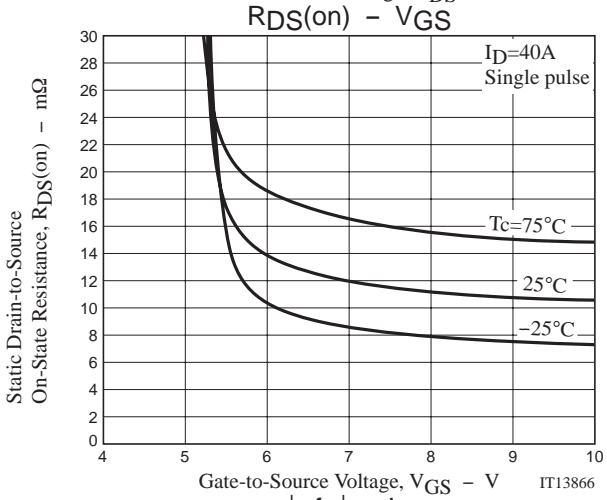
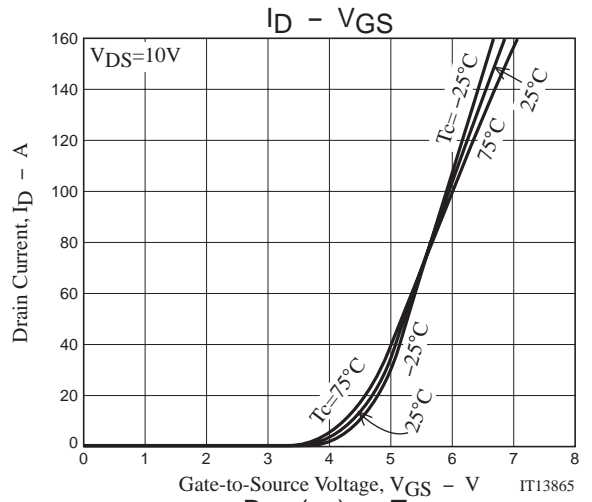
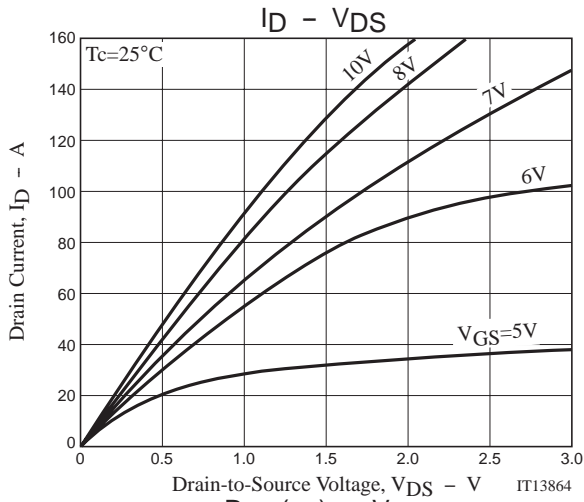


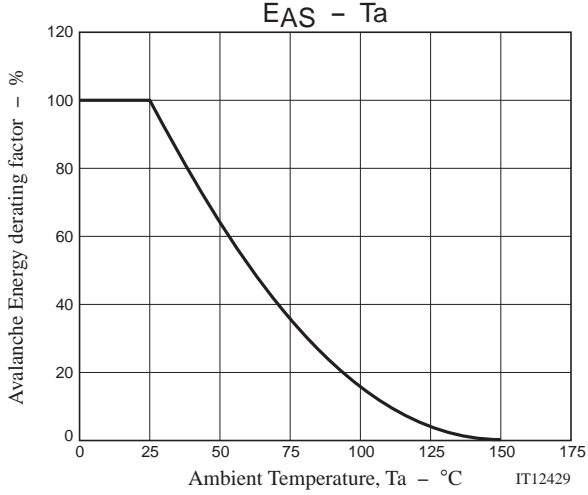
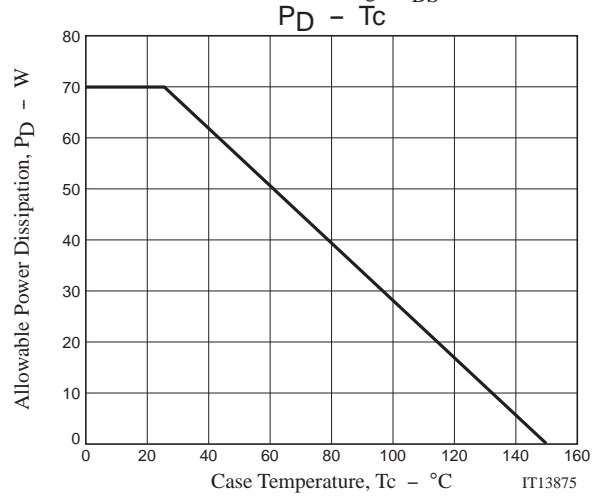
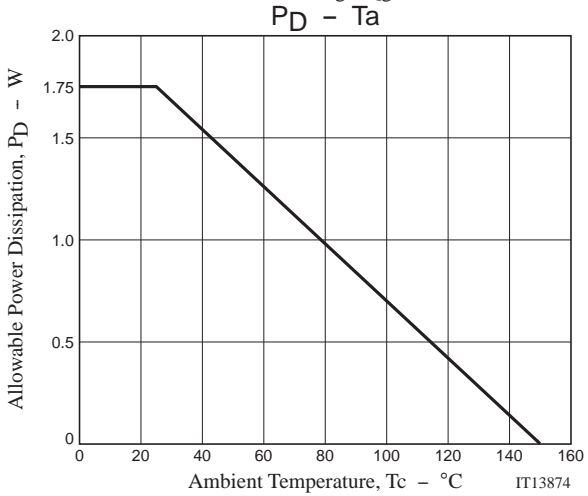
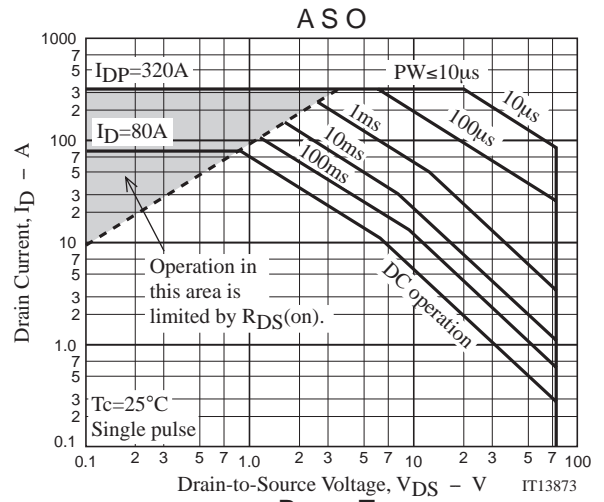
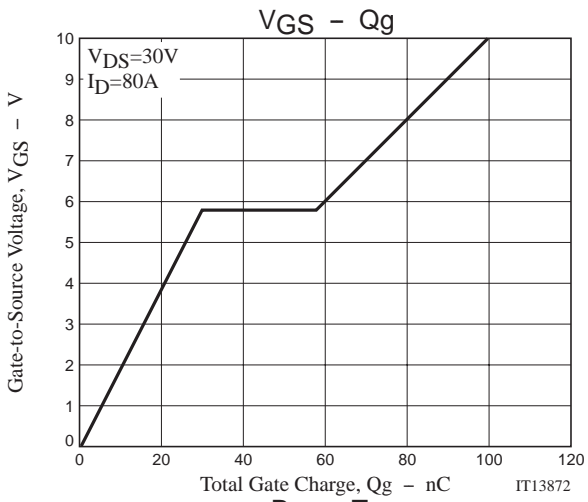
Switching Time Test Circuit



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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