Ordering number : ENA1269

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_{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
		Tc=25°C	70	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-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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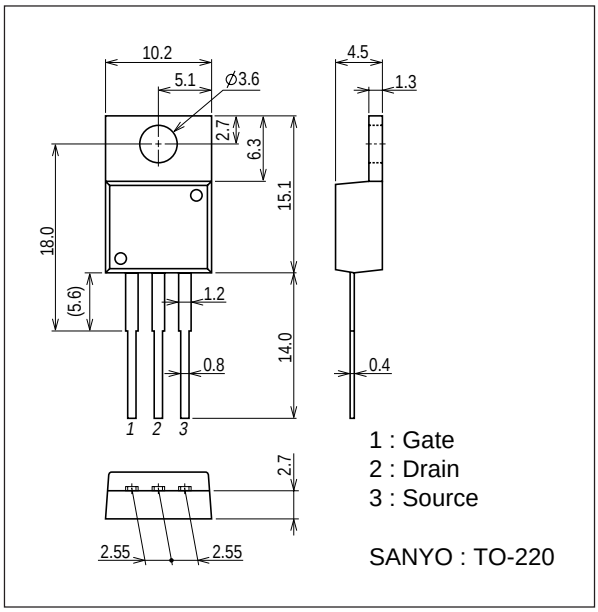
Electrical Characteristics at Ta=25°C

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}= ±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=10V, I_D=1mA	2		4	V
Forward Transfer Admittance	|yfs|	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	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		5400		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		480		pF
Reverse Transfer Capacitance	Crss	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	Qg	V_{DS}=30V, V_{GS}=10V, I_D=80A		100		nC
Gate-to-Source Charge	Qgs	V_{DS}=30V, V_{GS}=10V, I_D=80A		30		nC
Gate-to-Drain “Miller” Charge	Qgd	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

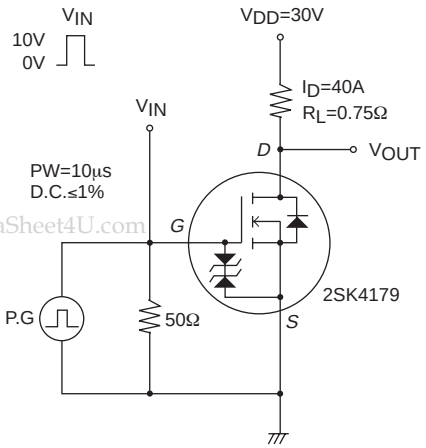
Package Dimensions

unit : mm (typ)

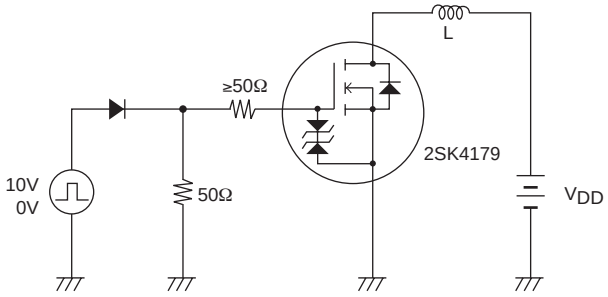
7507-002

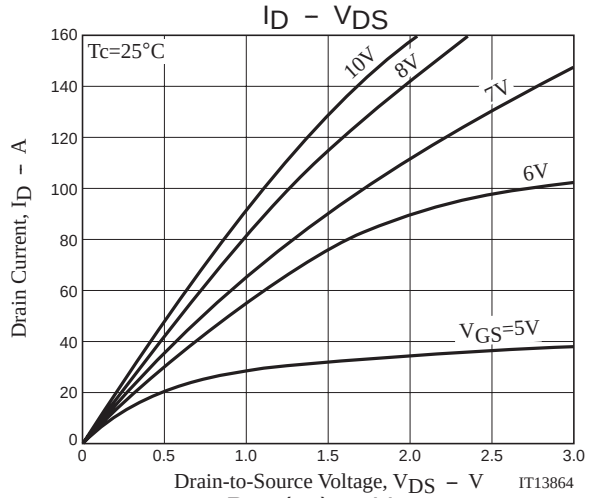


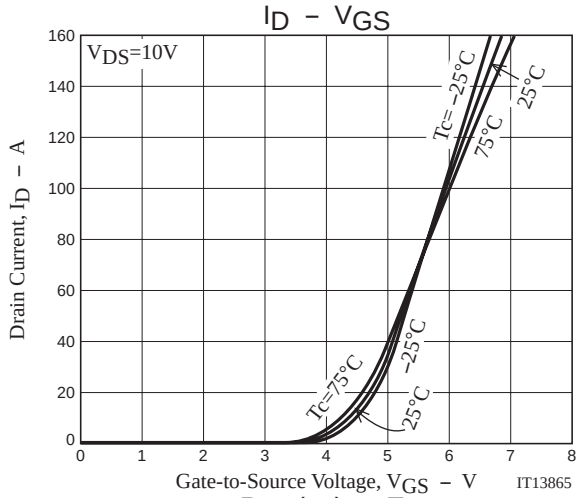
Switching Time Test Circuit

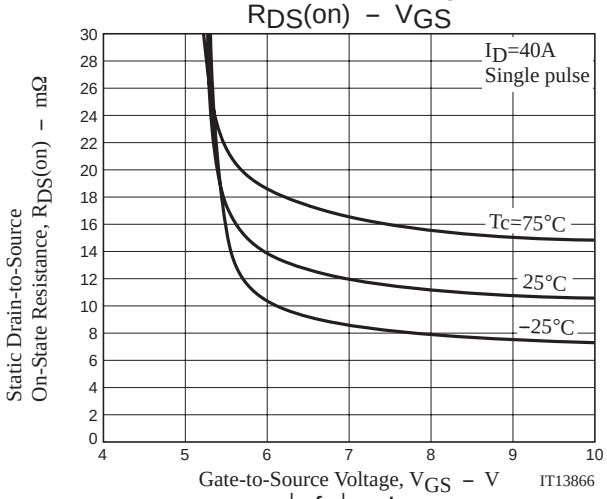


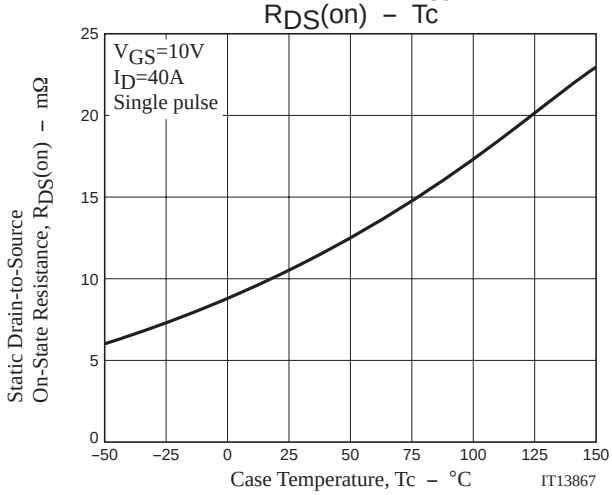
Avalanche Resistance Test Circuit

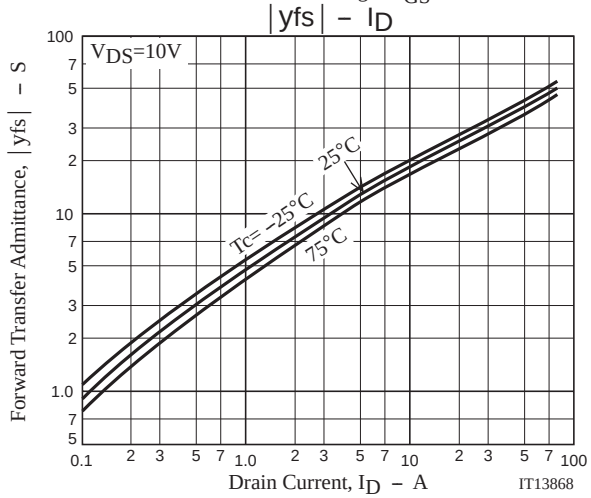


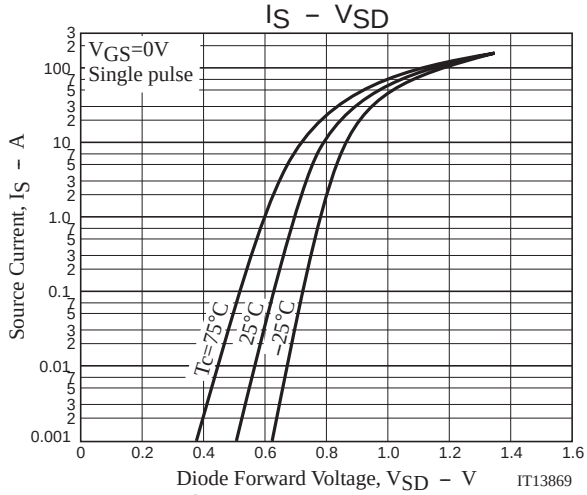


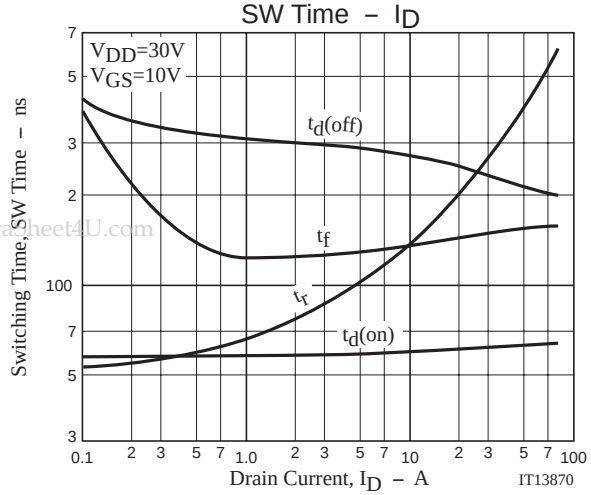


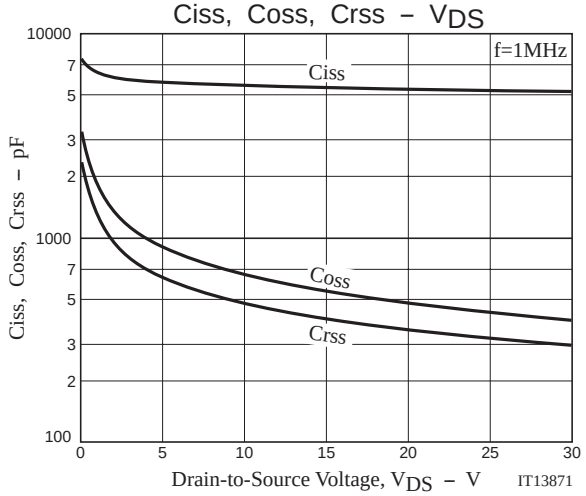


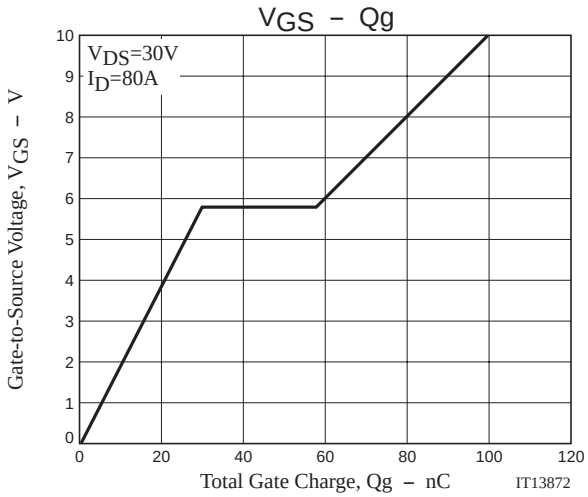


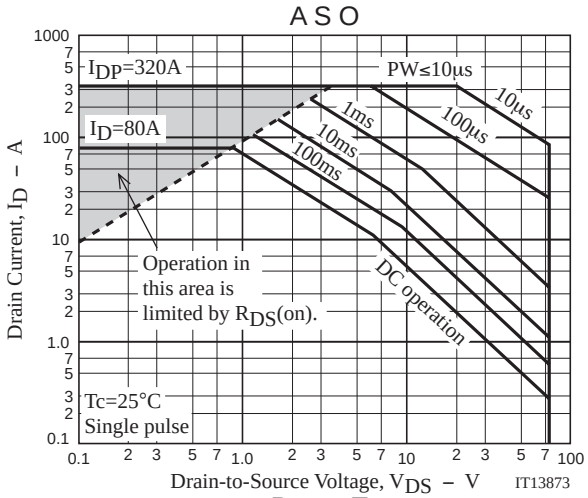


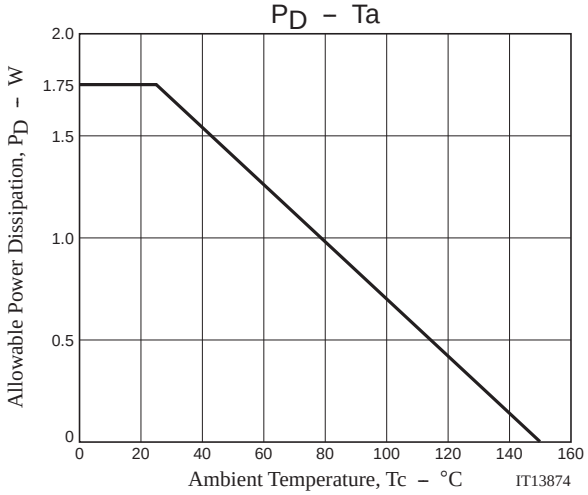


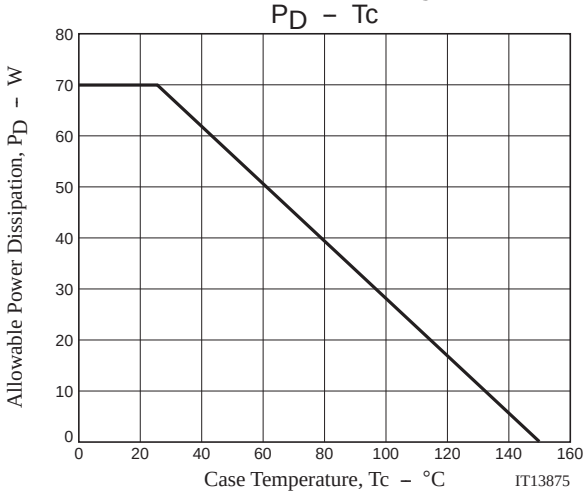


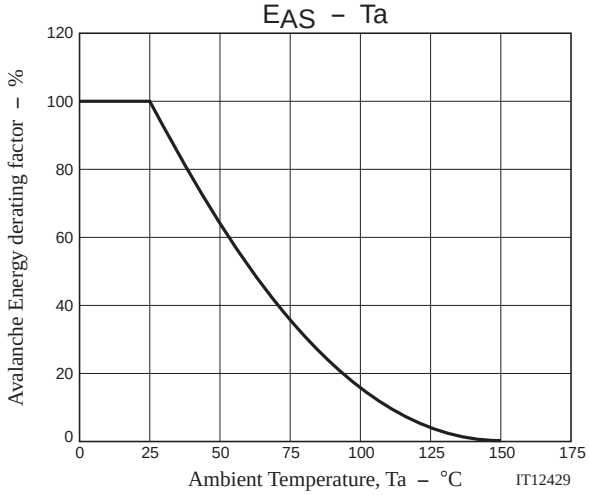












Note on usage : Since the 2SK4179 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

This catalog provides information as of July, 2008. Specifications and information herein are subject to change without notice.