



SANYO Semiconductors

DATA SHEET

2SK1900 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Enables simplified fabrication, high-density mounding, and miniaturization in end products due to the surface mountable package.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		60	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		30	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	120	A
Allowable Power Dissipation	P_D		1.65	W
		$T_c=25^\circ\text{C}$	70	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	60			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G= \pm 100\mu\text{A}$, $V_{DS}=0\text{V}$	± 20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}= \pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GSS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=15\text{A}$	16	27		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=15\text{A}$, $V_{GS}=10\text{V}$		30	40	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=15\text{A}$, $V_{GS}=4\text{V}$		40	55	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		1900		pF
Output Capacitance	C_{oss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		500		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		100		pF

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2SK1900

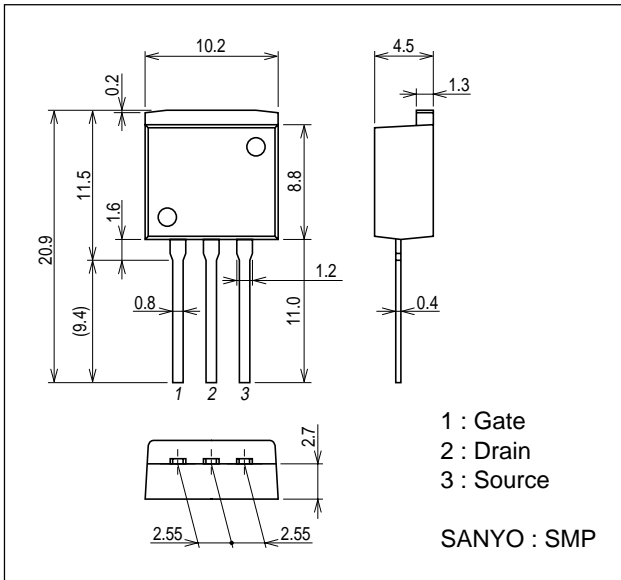
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit.		15		ns
Rise Time	t_r	See specified Test Circuit.		30		ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit.		335		ns
Fall Time	t_f	See specified Test Circuit.		225		ns
Diode Forward Voltage	V_{SD}	$I_S=30A, V_{GS}=0V$		1.0	1.5	V

Package Dimensions

unit : mm (typ)

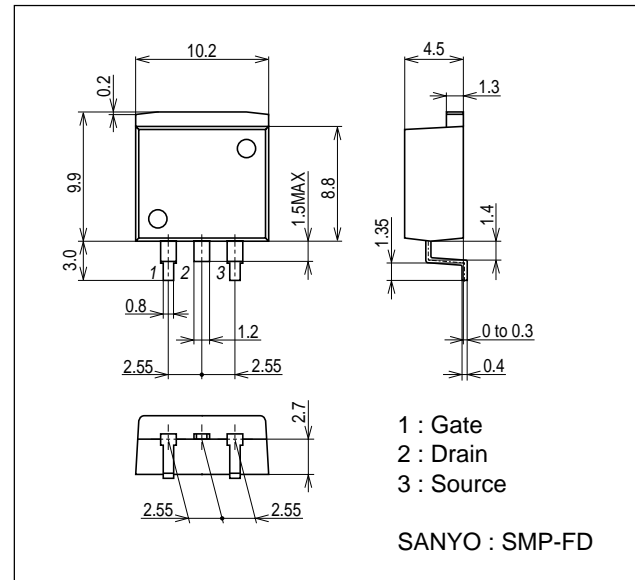
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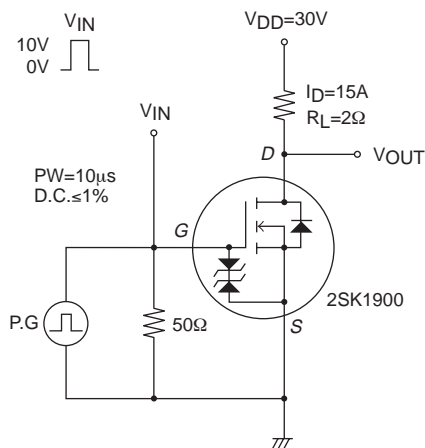
Package Dimensions

unit : mm (typ)

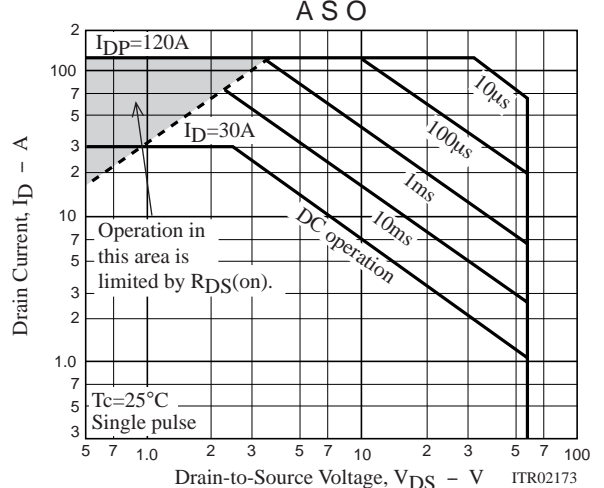
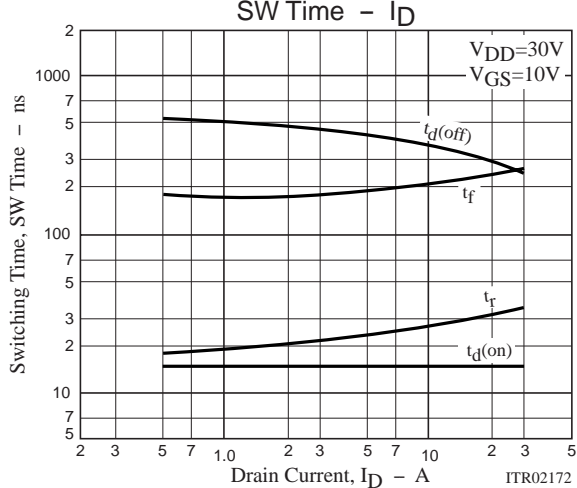
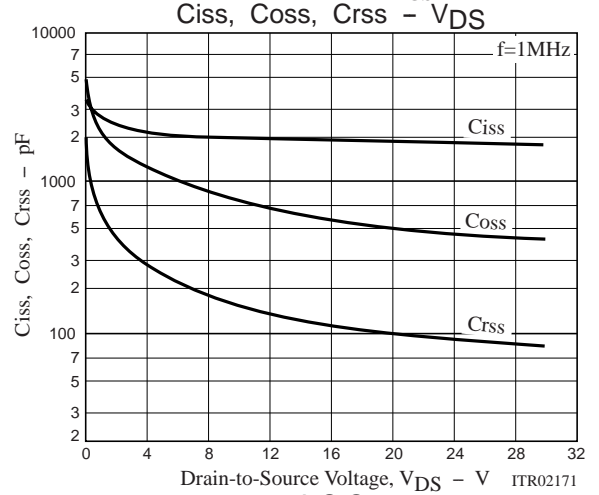
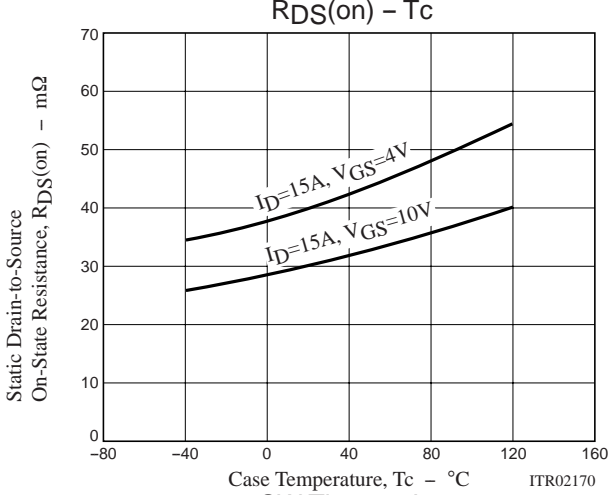
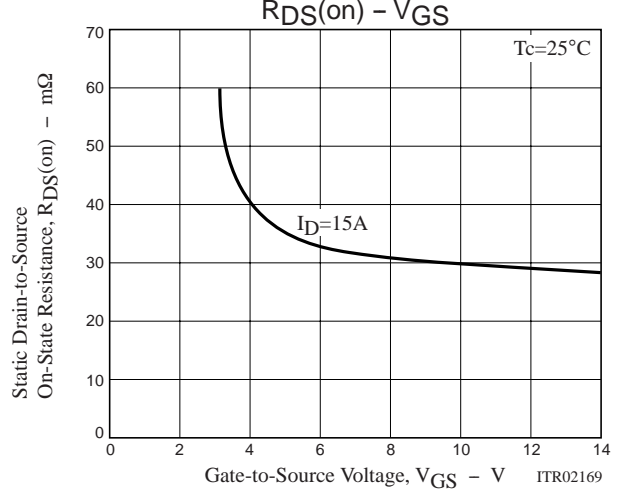
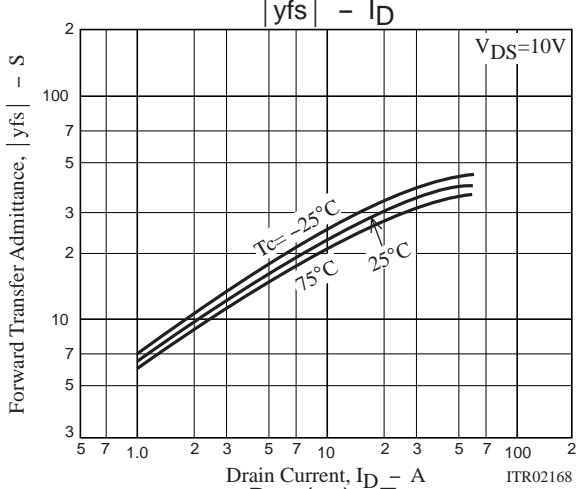
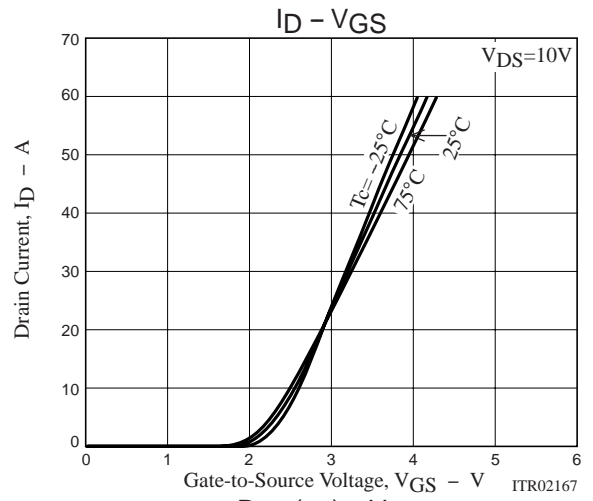
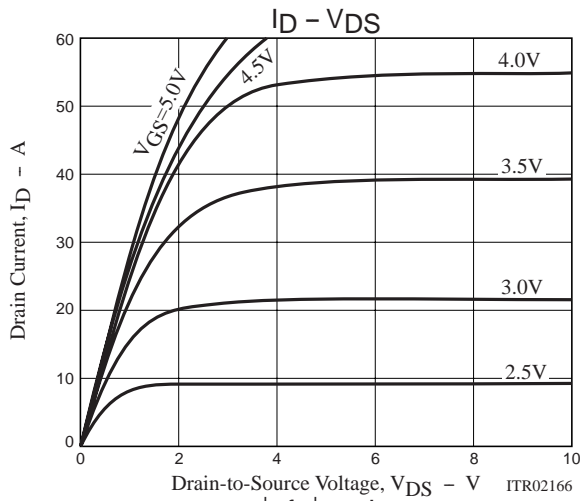
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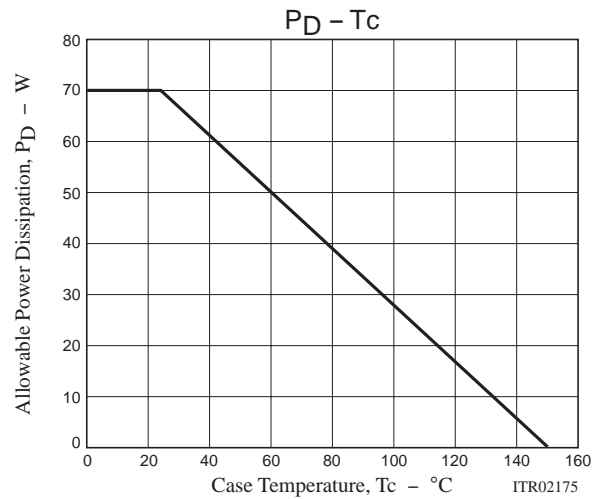
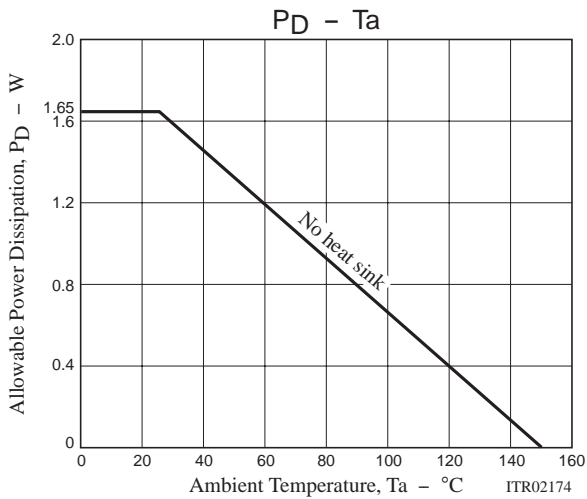
Switching Time Test Circuit



2SK1900



2SK1900



Note on usage : Since the 2SK1900 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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