



SANYO Semiconductors

DATA SHEET

2SK1896

 — N-Channel Silicon MOSFET
DC-DC Converter, Motor Drive Applications

Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Micaless package facilitating easy mounting.

Specifications

Absolute Maximum Ratings at Ta = 25°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		15	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	60	A
Allowable Power Dissipation	P _D		2.0	W
		T _c =25°C	25	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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} =0	60			V
Gate-to-Source Breakdown Voltage	V _{(BR)GSS}	I _G =-100 A, V _{DS} =0	-20			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0			100	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =-16V, V _{DS} =0			-10	μA
Cutoff Voltage	V _{GSS(off)}	V _{DS} =10V, I _D =1mA	1.0		2.0	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =9A	8	13		S
Static Drain-to-Source ON-State Resistance	R _{DS(on)}	I _D =9A, V _{GS} =10V		0.05	0.07	Ω
	R _{DS(on)}	I _D =9A, V _{GS} =4V		0.07	0.095	Ω

Continued on next page.

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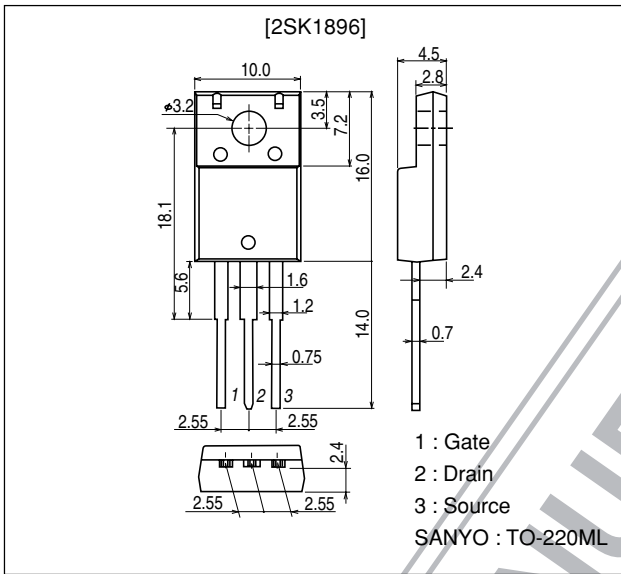
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		1230		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		330		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		65		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit		14		ns
Rise Time	t _r	See specified Test Circuit		35		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit		250		ns
Fall Time	t _f	See specified Test Circuit		120		ns
Diode Forward Voltage	V _{SD}	I _S =15A, V _{GS} =0		1.0	1.5	V

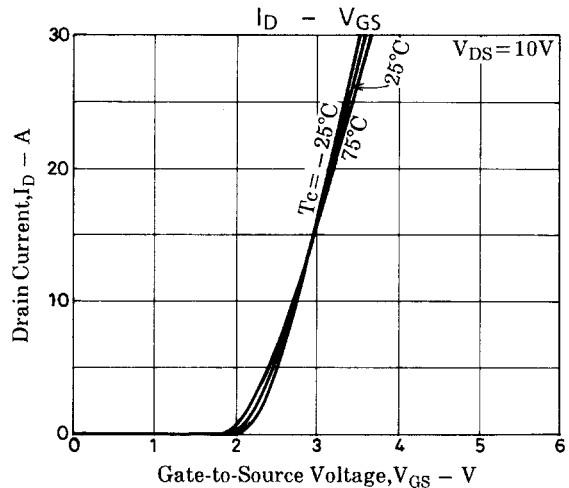
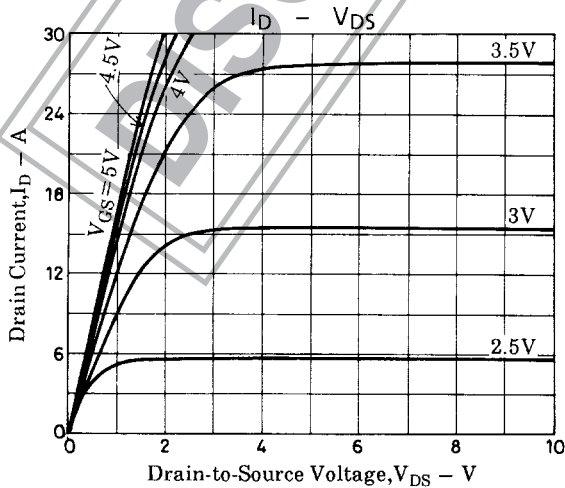
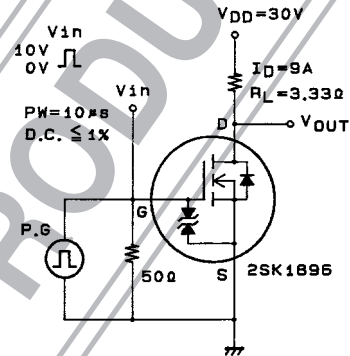
Package Dimensions

unit:mm

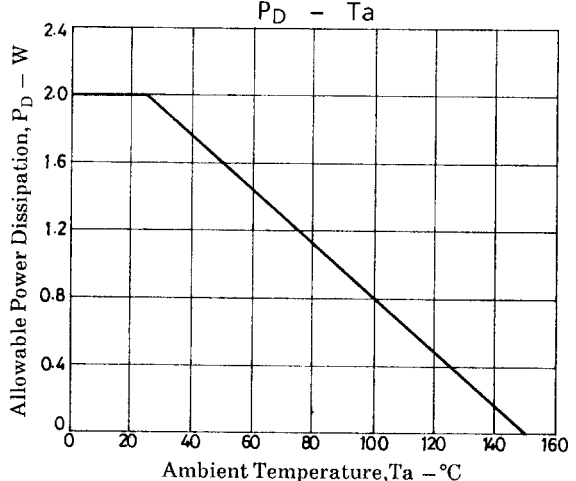
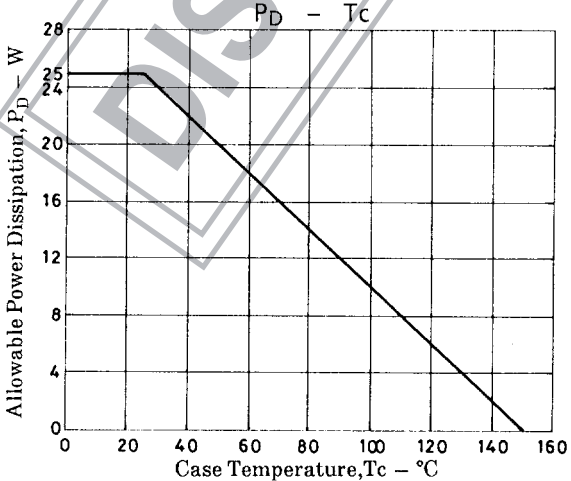
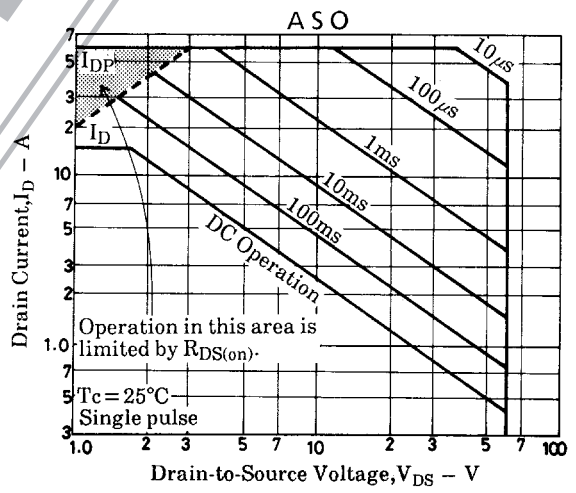
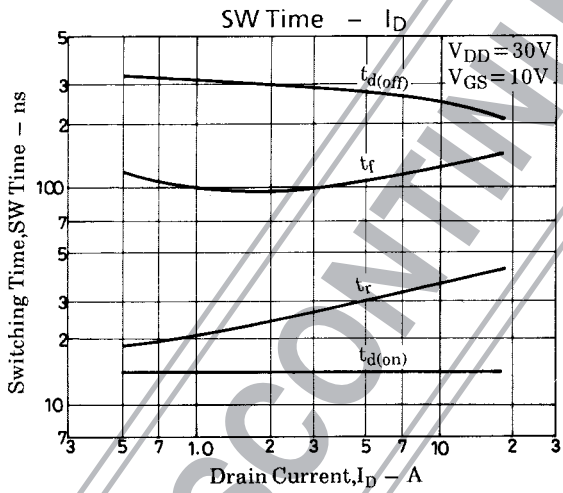
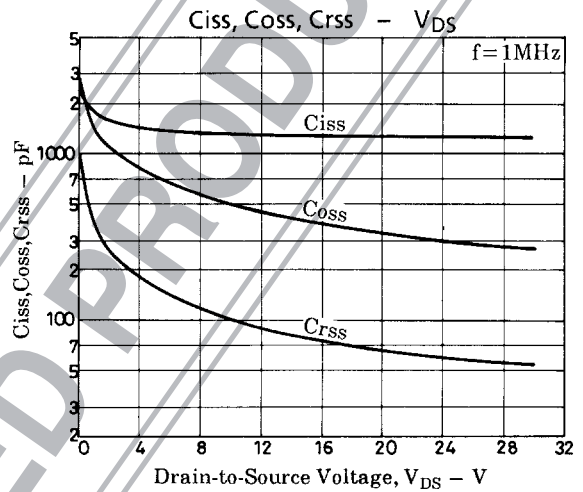
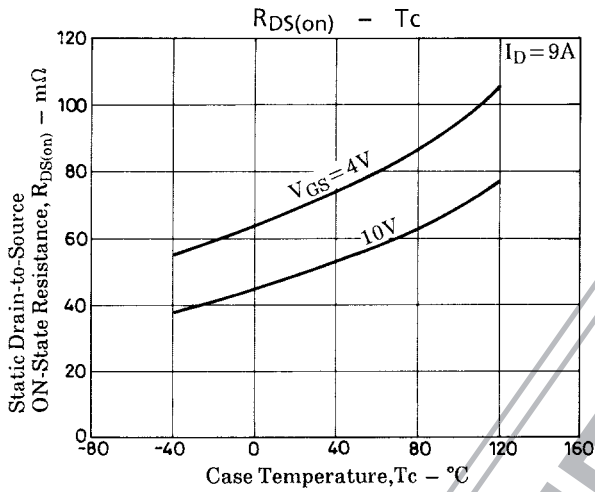
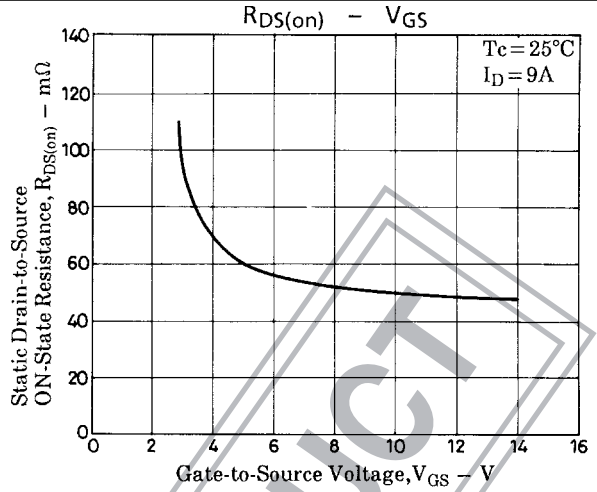
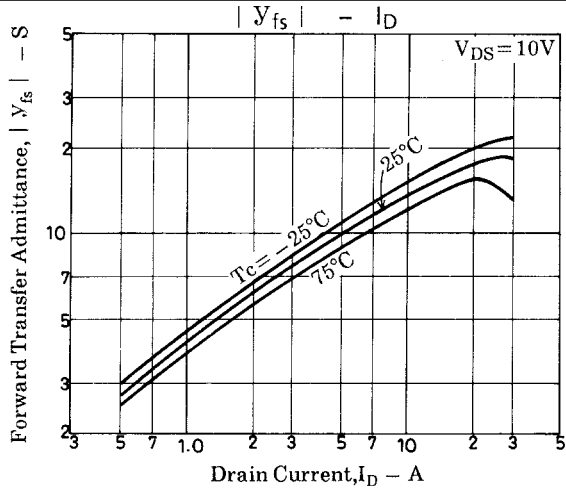
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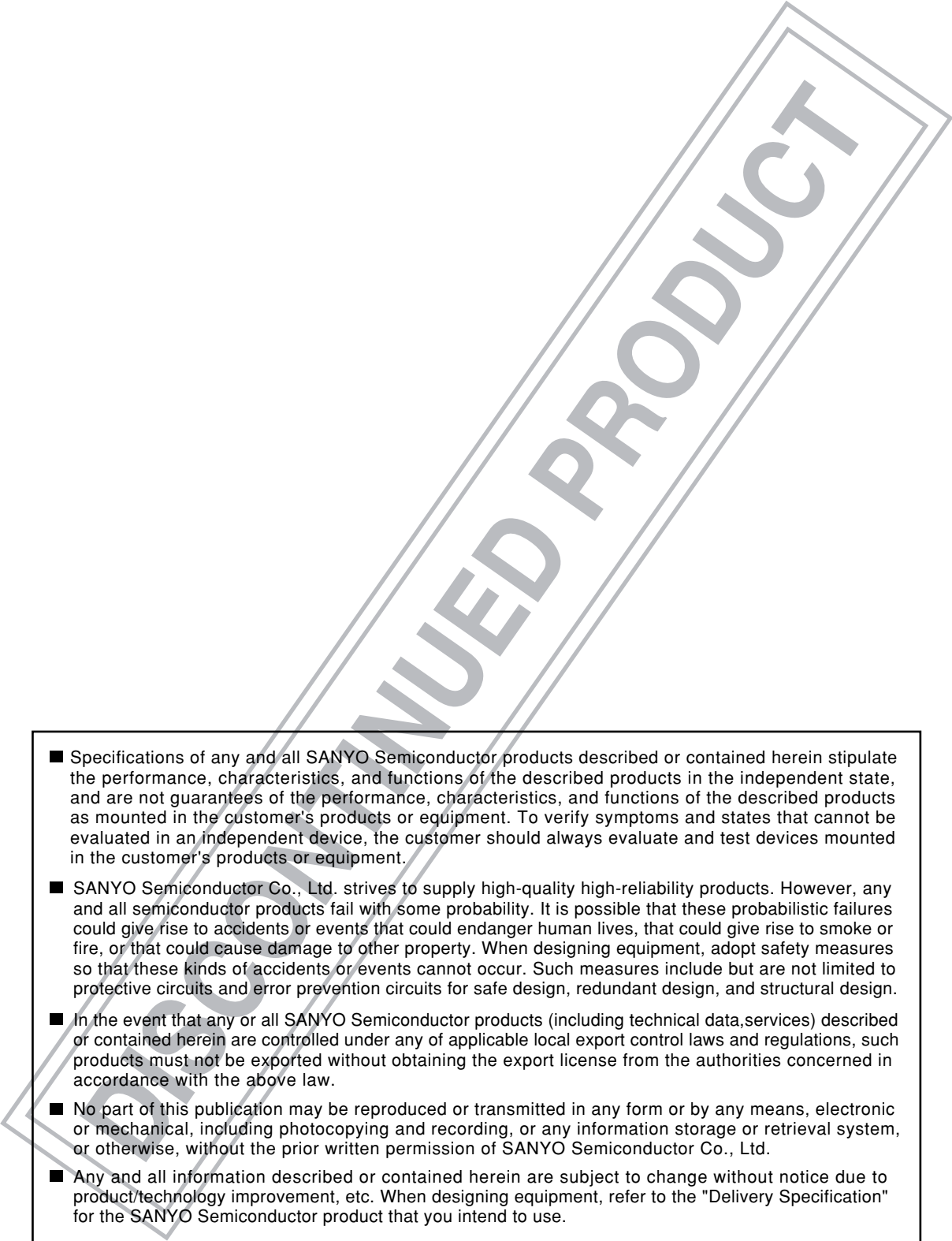


Switching Time Test Circuit



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