Ordering number : EN4647

SANYO Semiconductors

DATA SHEET

2SK1896 — N-Channel Silicon MOSFET
DC-DC Converter,Motor Drive Appliccations

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
		Tc=25°C	25	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		–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	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	1.0		2.0	V
Forward Transfer Admittance	| yfs |	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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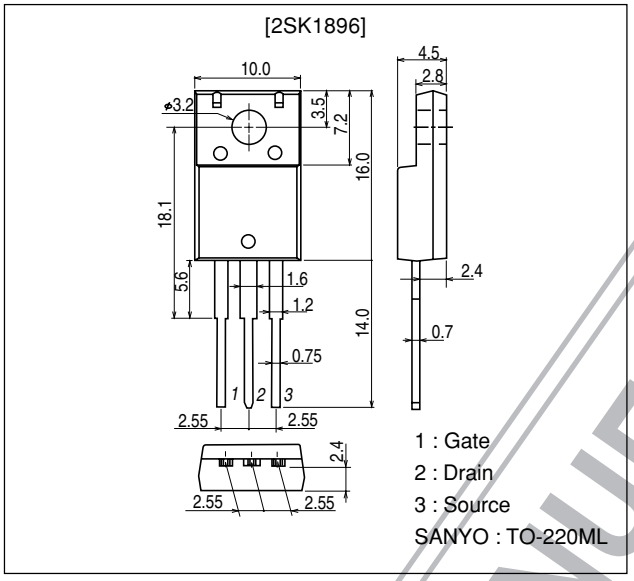
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		1230		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		330		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		65		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		14		ns
Rise Time	t_r	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

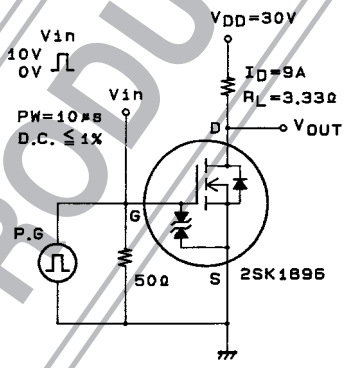
Package Dimensions

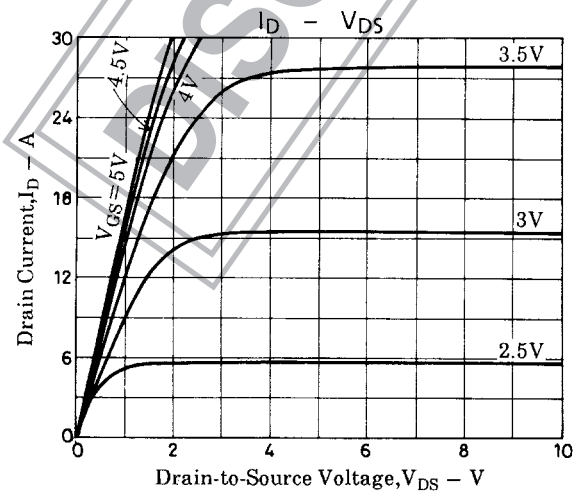
unit:mm

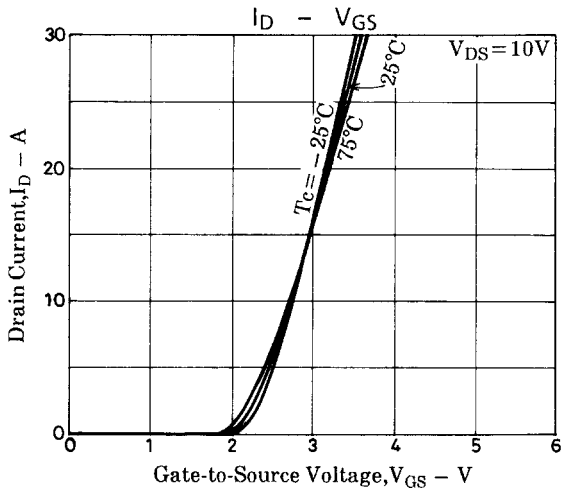
2063A

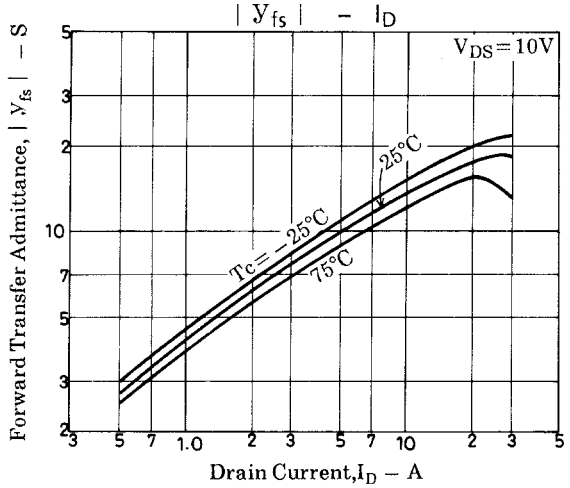


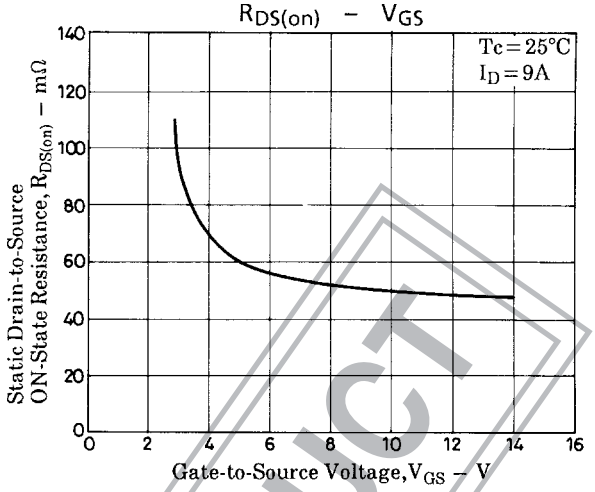
Switching Time Test Circuit

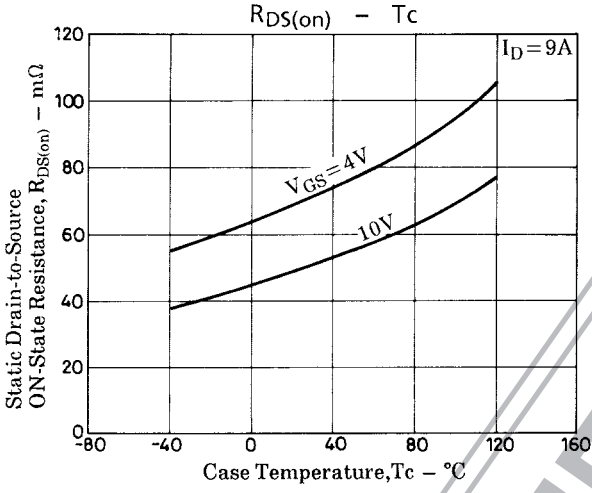


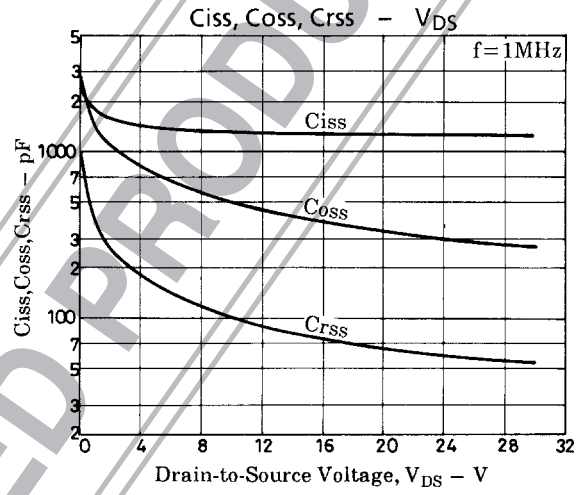


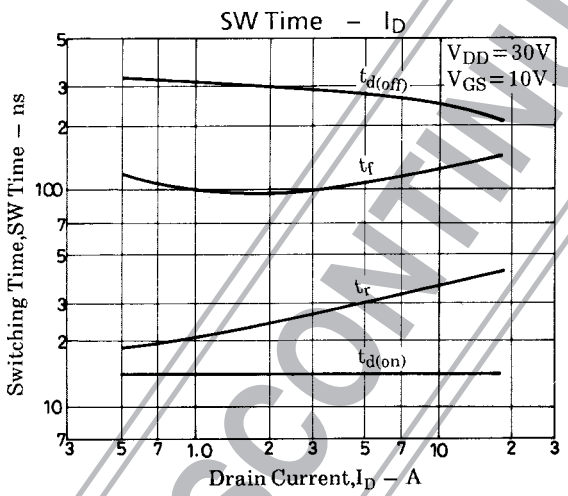


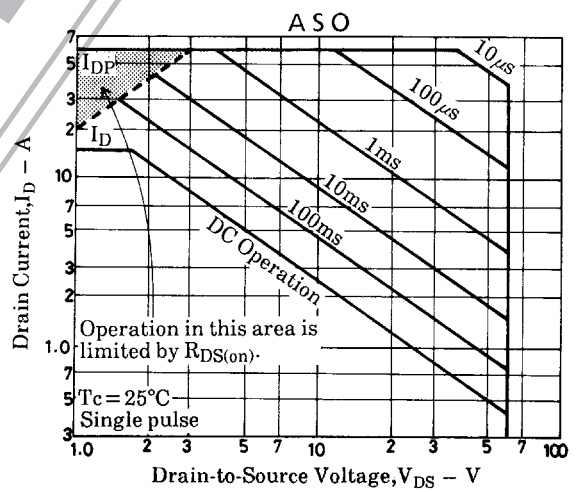


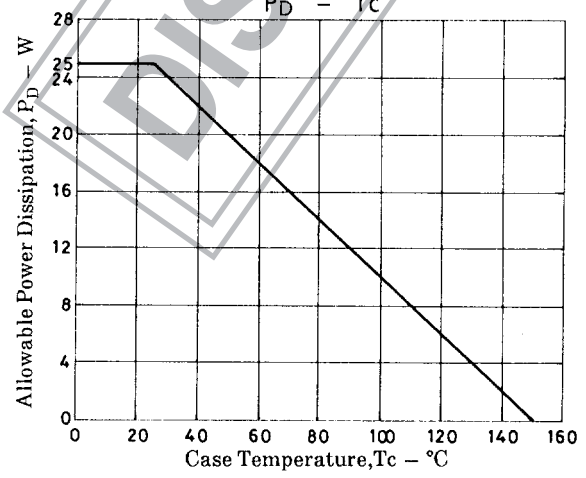


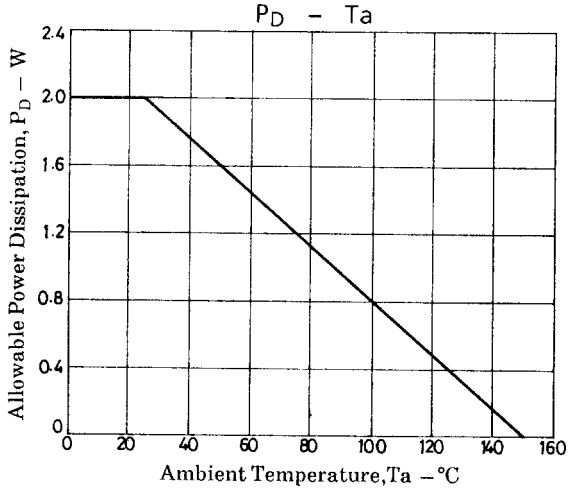












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