

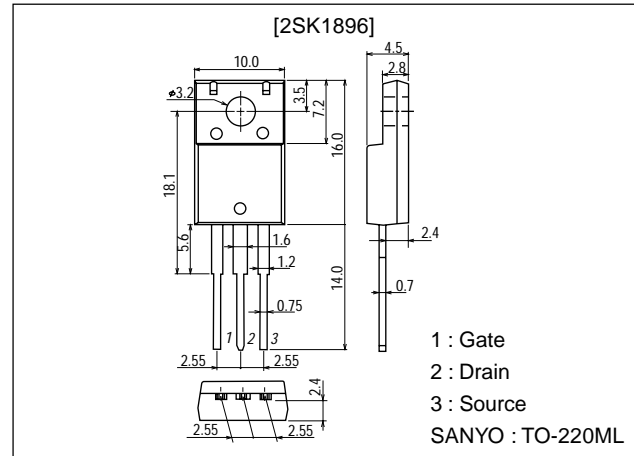
**DC-DC Converter, Motor Drive Applications****Features**

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

**Package Dimensions**

unit:mm

2063A

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		60	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 20$	V
Drain Current (DC)	$I_D$		15	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10 \mu s$ , duty cycle $\leq 1\%$	60	A
Allowable Power Dissipation	$P_D$		2.0	W
		$T_c = 25^\circ C$	25	W
Channel Temperature	$T_{ch}$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

**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	$V_{(BR)GSS}$	$I_G = \pm 100 \mu A$ , $V_{DS} = 0$	$\pm 20$			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 60V$ , $V_{GS} = 0$			100	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16V$ , $V_{DS} = 0$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$ , $I_D = 1mA$	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	$\Omega$
	$R_{DS(on)}$	$I_D = 9A$ , $V_{GS} = 4V$		0.07	0.095	$\Omega$

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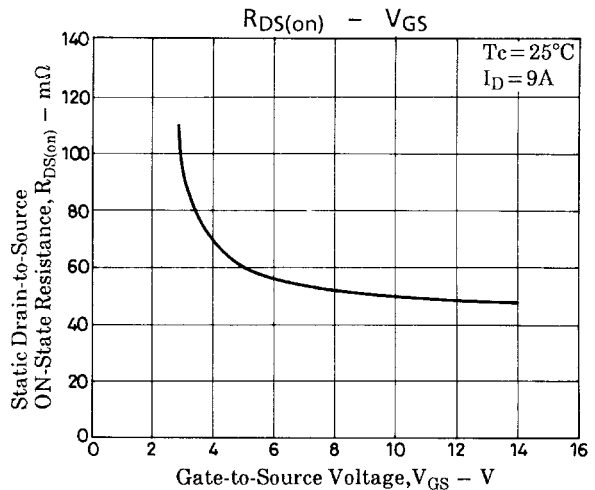
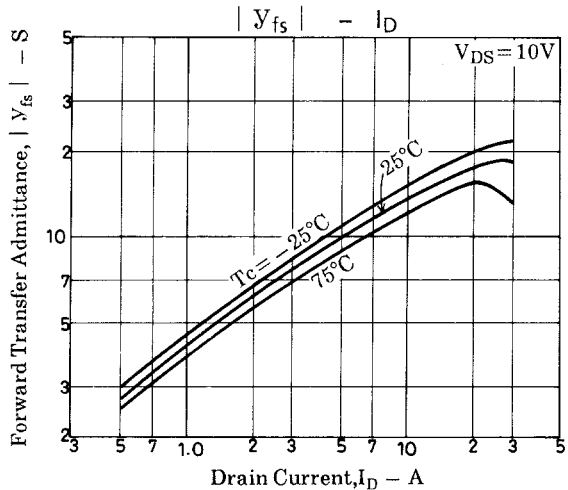
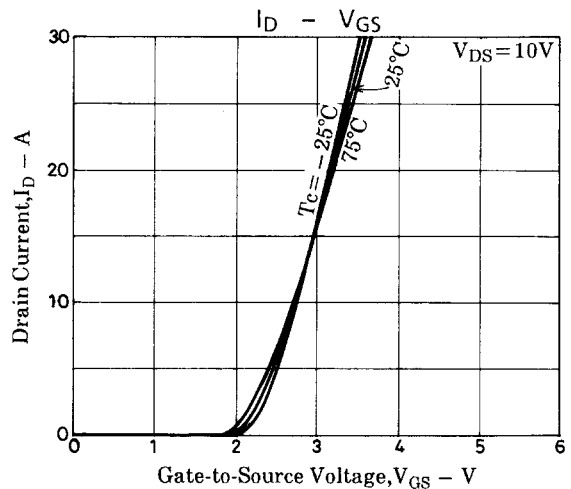
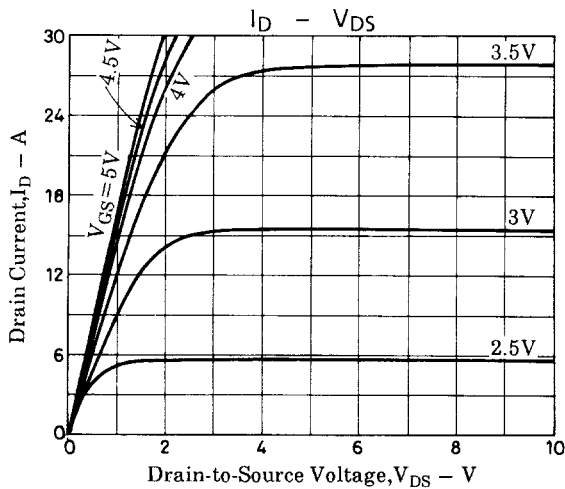
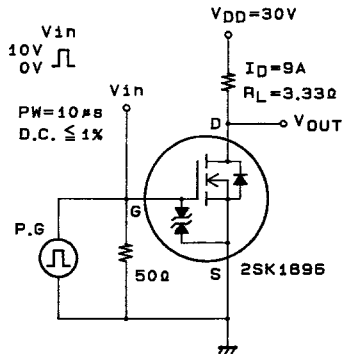
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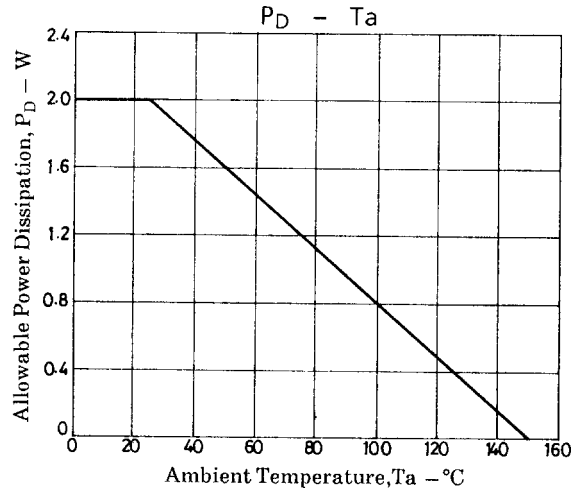
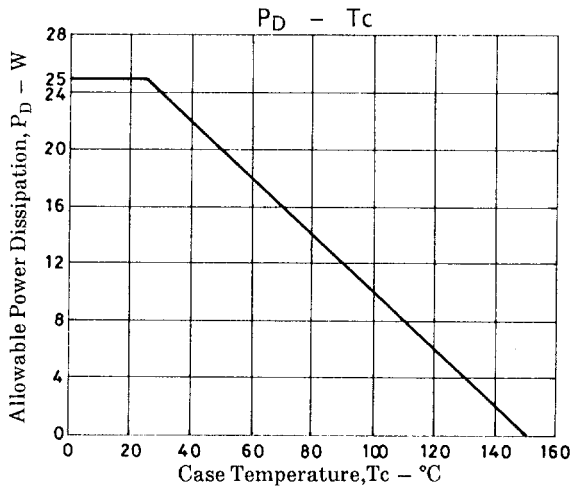
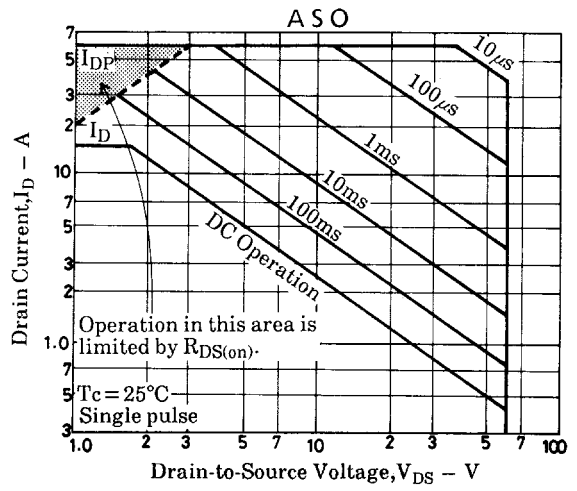
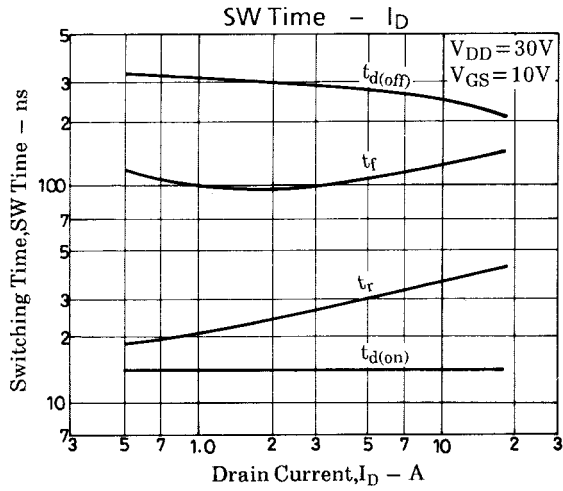
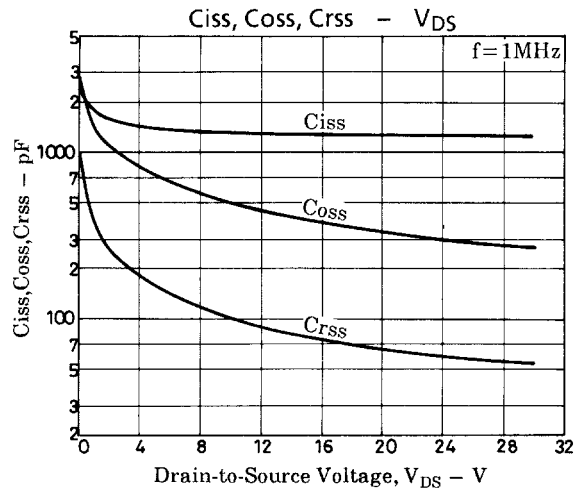
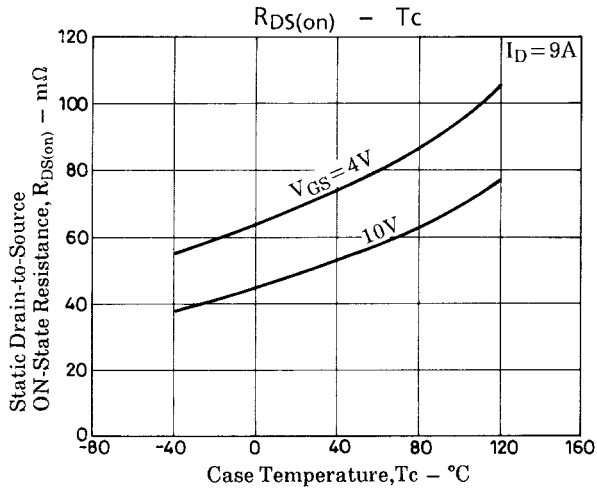
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$		1230		pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$		330		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$		65		pF
Turn-ON 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

## Switching Time Test Circuit



# 2SK1896



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