

**2SK1899**

Ultrahigh-Speed Switching Applications

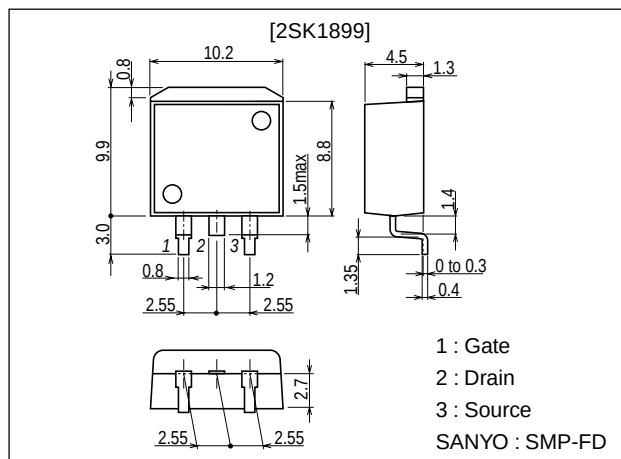
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Surface mount type device making the following possible.
 - Reduction in the assembling time for 2SK1899-applied equipment.
 - High-density surface mount applications.
 - Small size of 2SK1899-applied equipment.

Package Dimensions

unit:mm

2090A



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}		±20	V
Drain Current (DC)	I_D		18	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	72	A
Allowable Power Dissipation	P_D		1.65	W
		$T_c = 25^\circ C$	60	W
Channel Temperature	T_{ch}		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$
Avalanche Current	I_{AV}	$V_{DS}=30V$, $V_{GS}=10V$, $L=0.1mH$, $T_c=25^\circ C$, Single pulse	18	A

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	$V_{(BR)GSS}$	$I_G=\pm 100\mu A$, $V_{DS}=0$	±20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$, $V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16V$, $V_{DS}=0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V$, $I_D=1mA$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V$, $I_D=9A$	8	13		S

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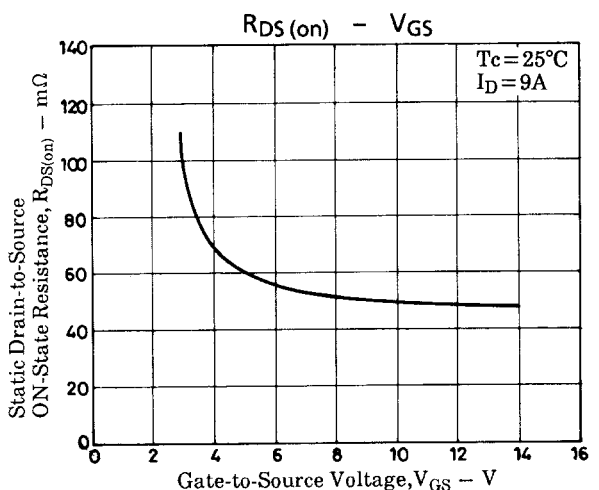
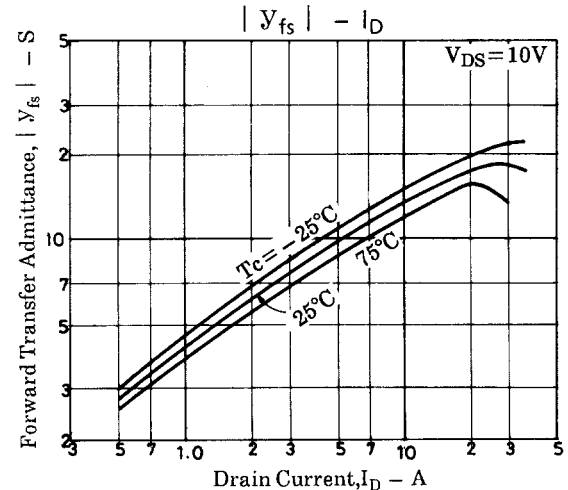
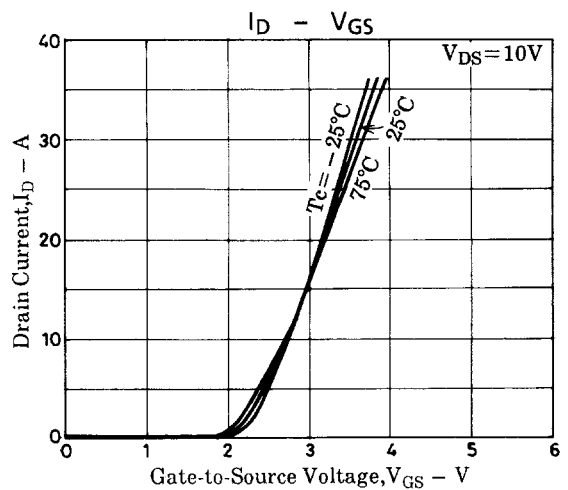
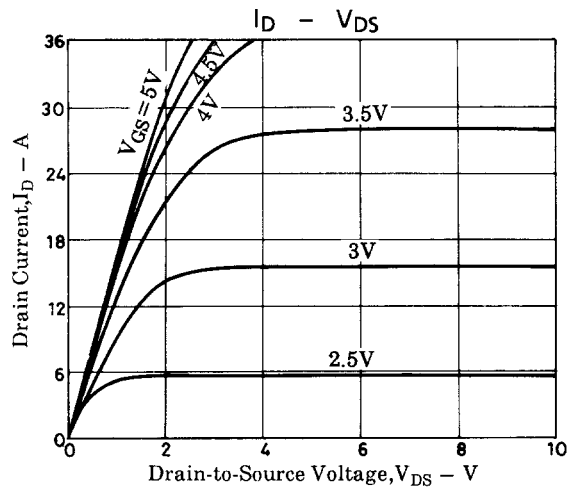
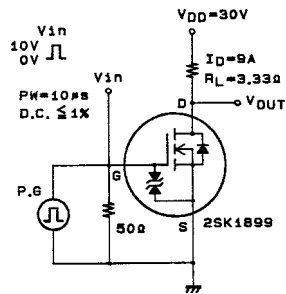
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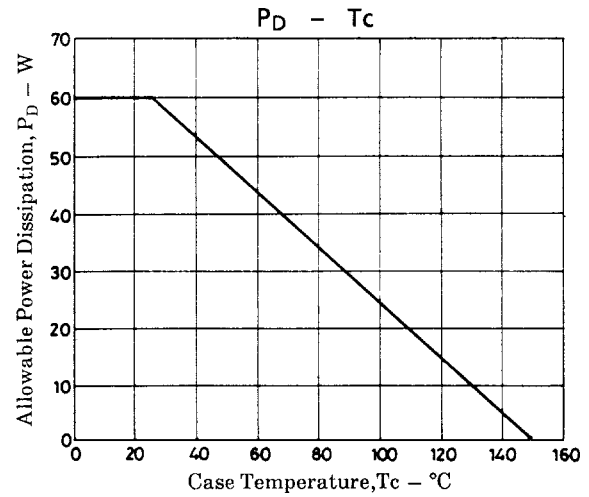
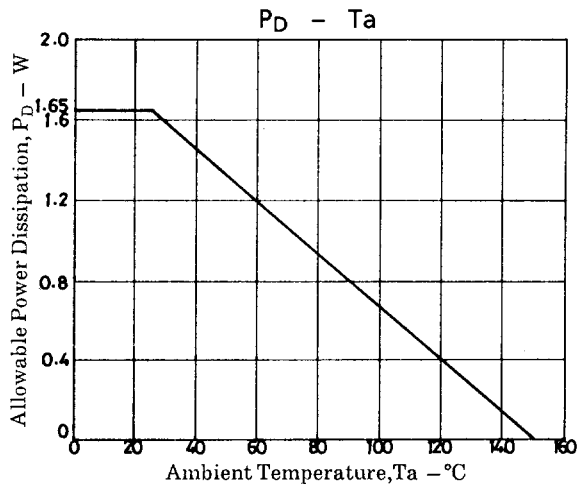
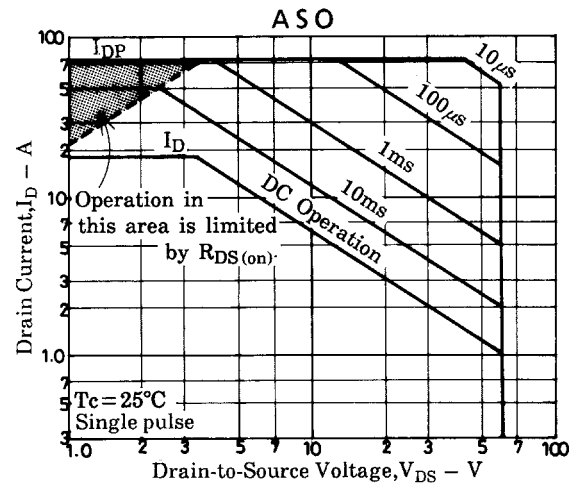
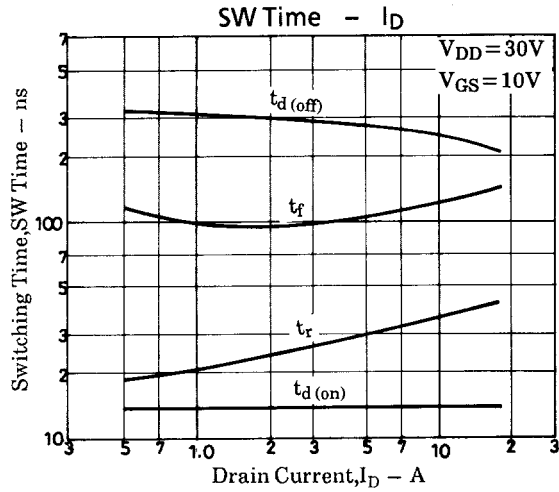
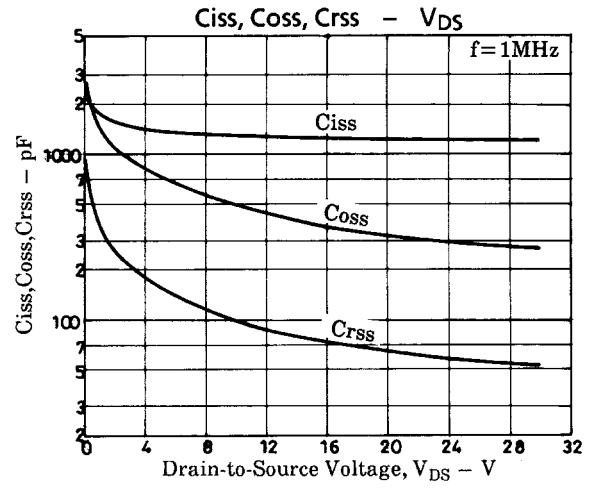
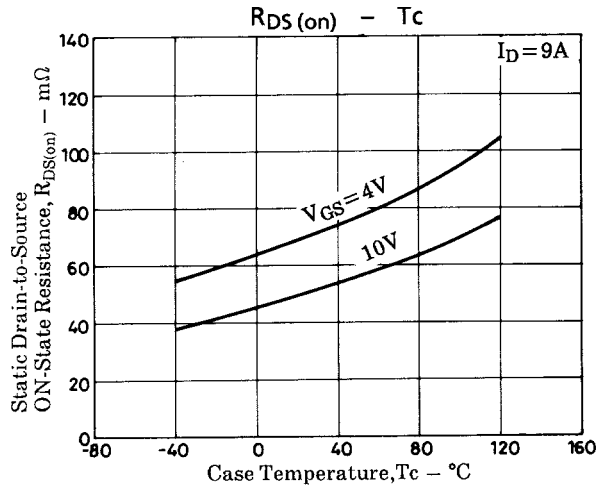
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=9A, V_{GS}=10V$		0.05	0.07	Ω
	$R_{DS(on)}$	$I_D=9A, V_{GS}=4V$		0.07	0.095	Ω
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		1230		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}	$I_S=18A, V_{GS}=0$		1.0	1.5	V

Switching Time Test Circuit





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