

**2SK1905**

Ultrahigh-Speed Switching Applications

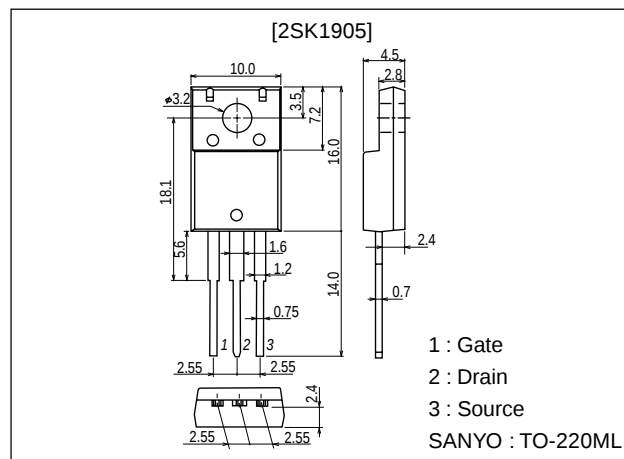
Features

- 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}		100	V
Gate-to-Source Voltage	V_{GS}		±20	V
Drain Current (DC)	I_D		12	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c = 25^\circ C$	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	$V_{(BR)DSS}$	$I_D = 1mA$, $V_{GS} = 0$	100			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}	$V_{DS} = 100V$, $V_{GS} = 0$			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} $	$V_{DS} = 10V$, $I_D = 7A$	7	11.5		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 7A$, $V_{GS} = 10V$		100	135	mΩ
	$R_{DS(on)}$	$I_D = 7A$, $V_{GS} = 4V$		135	180	mΩ

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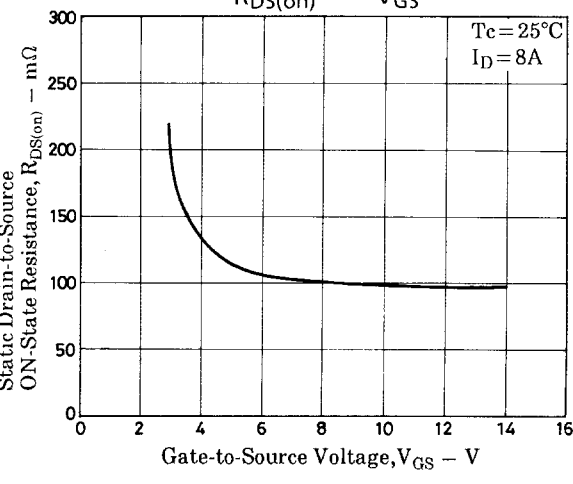
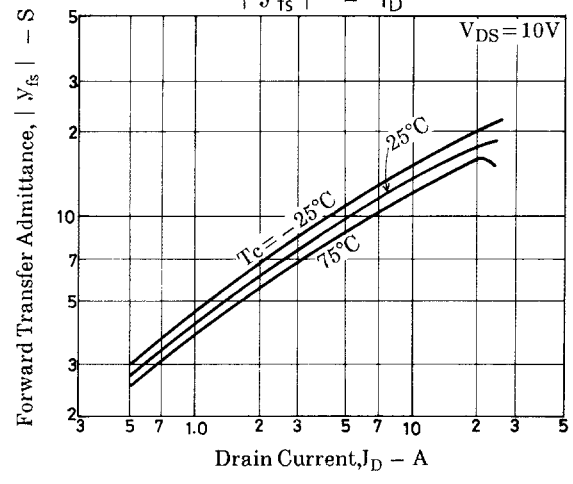
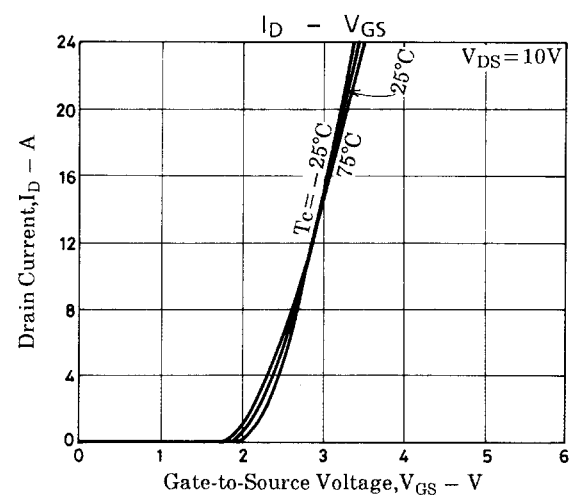
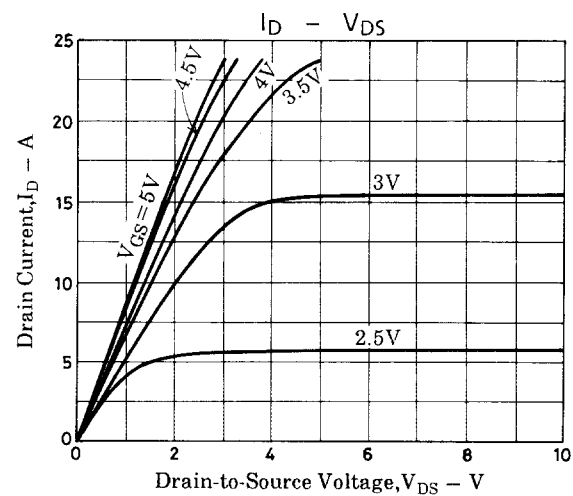
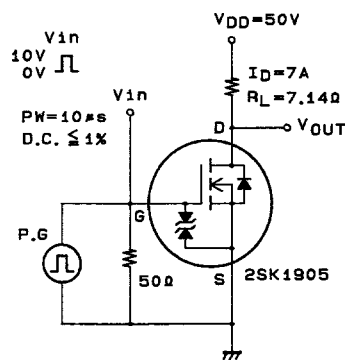
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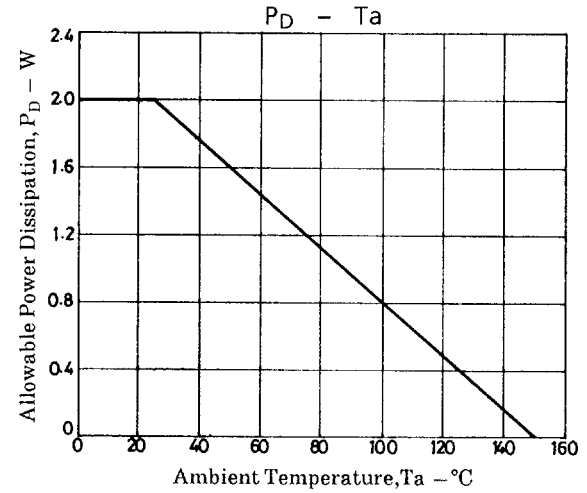
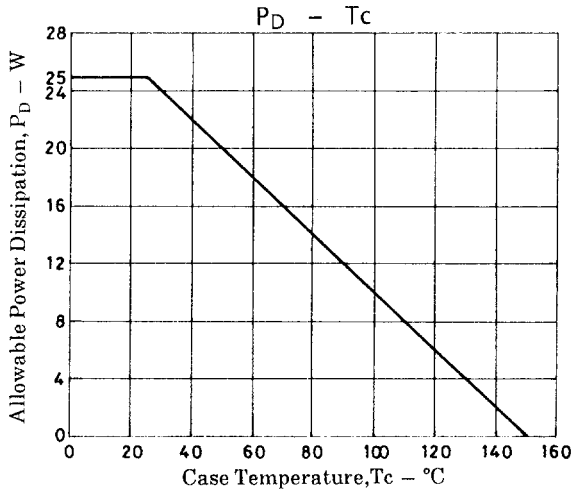
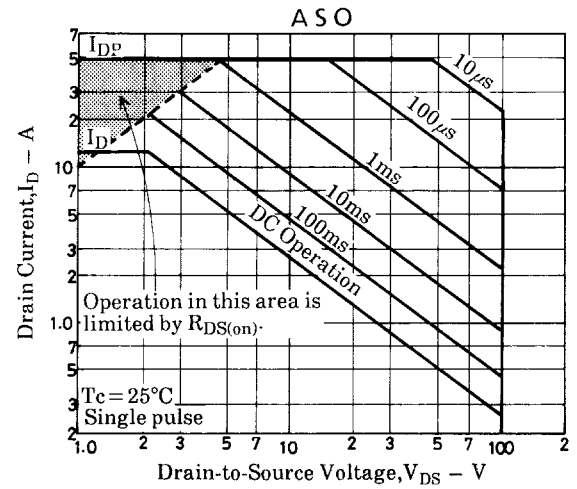
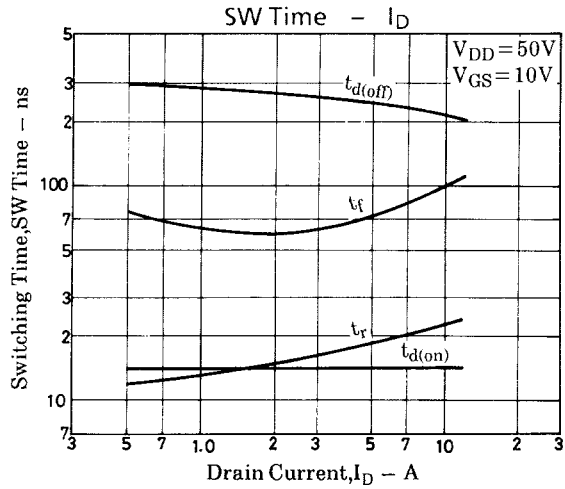
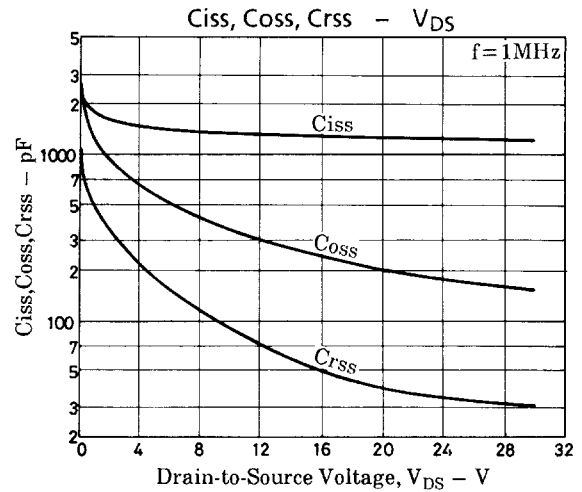
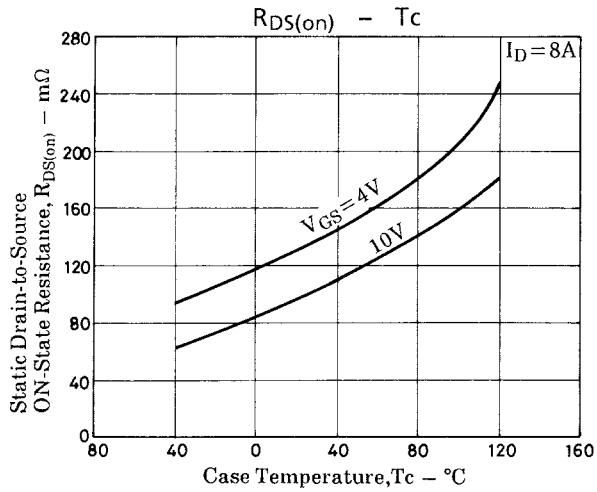
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		1230		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		200		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		14		ns
Rise Time	t_r	See specified Test Circuit		21		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		230		ns
Fall Time	t_f	See specified Test Circuit		90		ns
Diode Forward Voltage	V_{SD}	$I_S=12A, V_{GS}=0$		1.0	1.5	V

Switching Time Test Circuit





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