

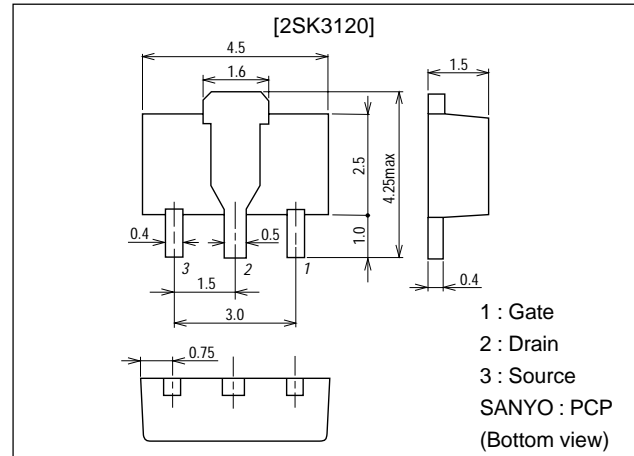
**2SK3120****Ultrahigh-Speed Switching Applications****Features**

- Low ON resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit:mm

2062A

**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		30	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		2	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	8	A
Allowable Power Dissipation	P_D	$T_c = 25^\circ\text{C}$	3.5	W
		Mounted on a ceramic board (250mm \times 0.8mm)	1.3	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30\text{V}$, $V_{GS} = 0$			10	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$	1.0		2.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}$, $I_D = 1\text{A}$	1.2	1.8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = 1\text{A}$, $V_{GS} = 10\text{V}$		230	300	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = 500\text{mA}$, $V_{GS} = 4\text{V}$		350	480	$\text{m}\Omega$

Marking : KT

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SANYO Electric Co., Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

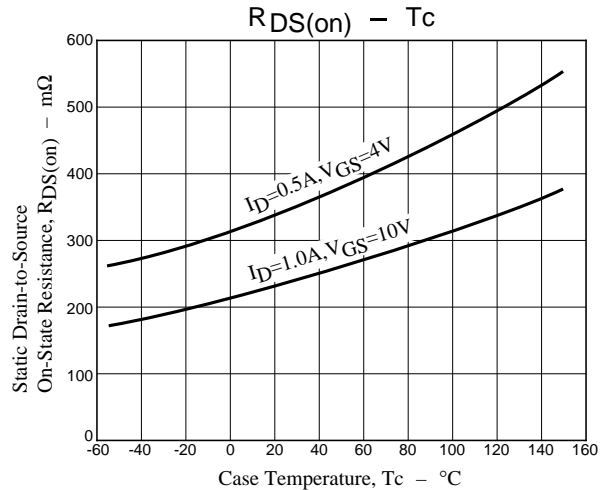
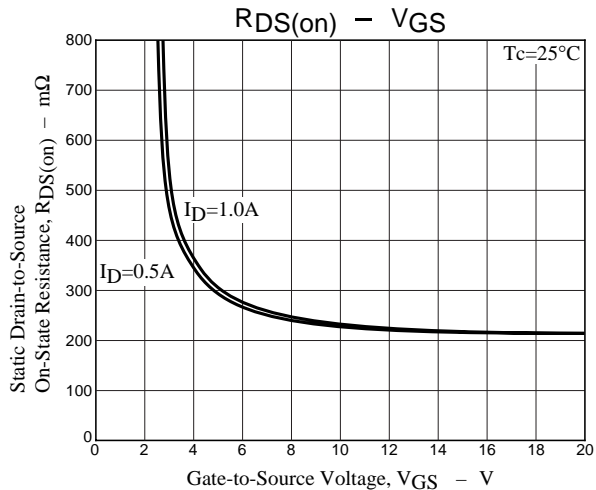
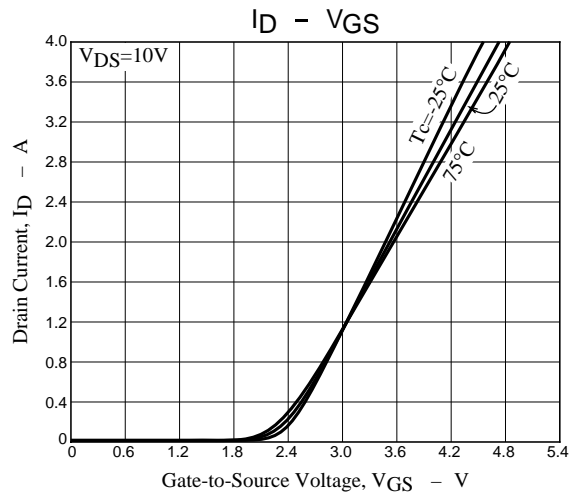
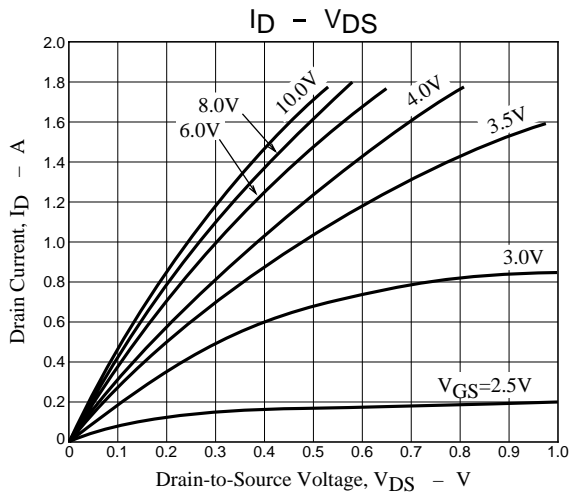
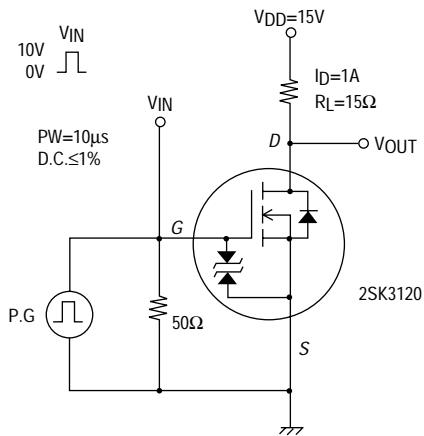
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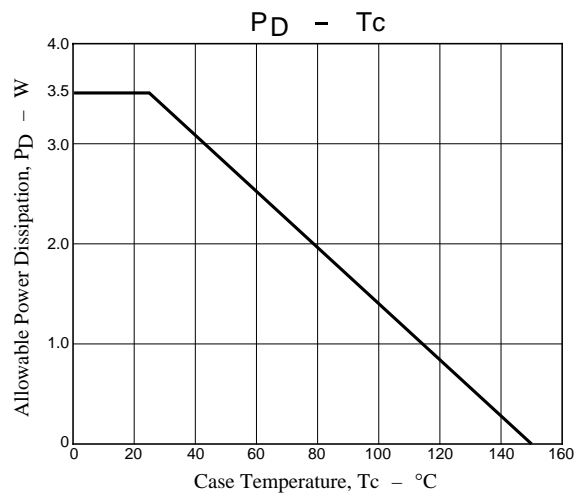
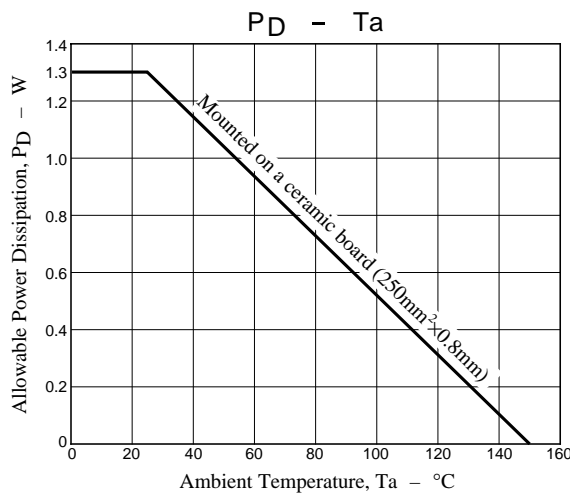
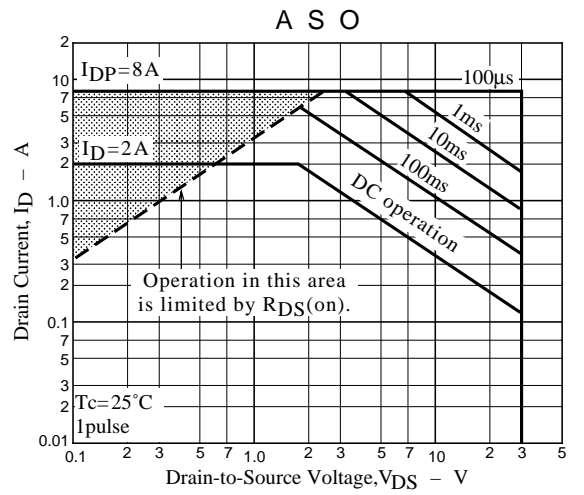
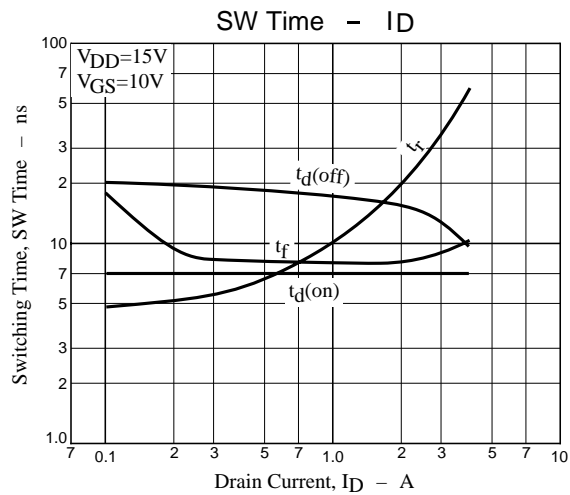
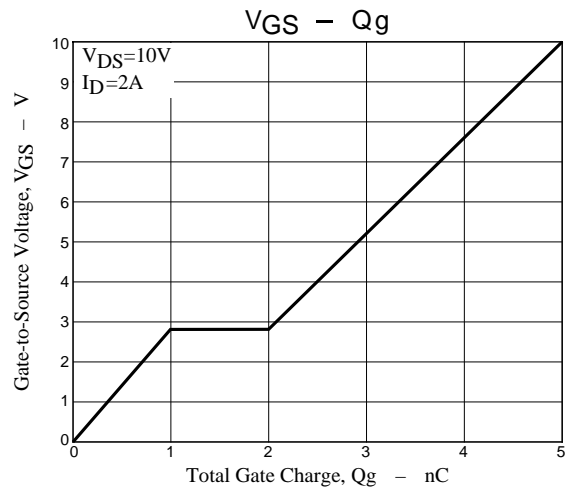
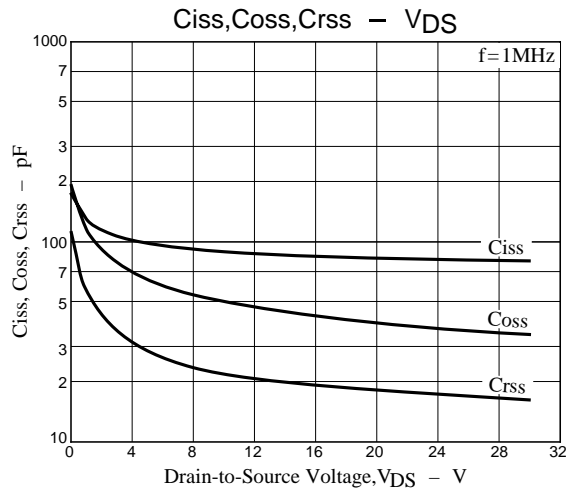
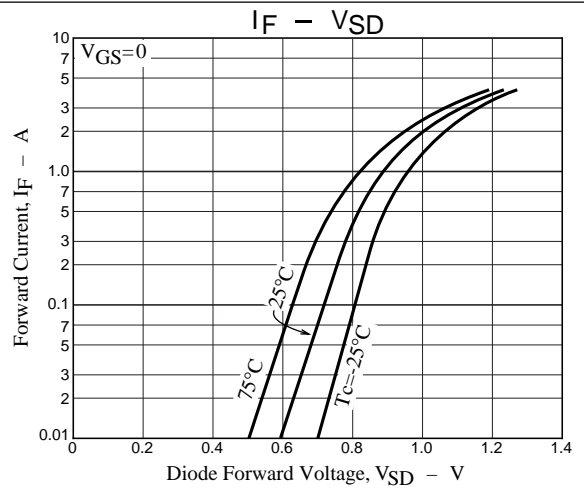
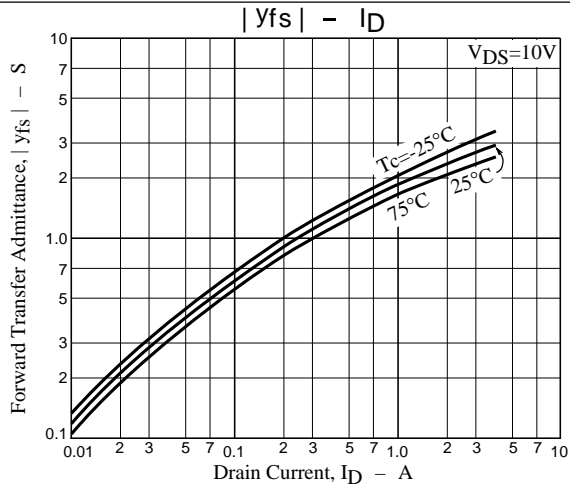
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		90		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		50		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		22		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		7		ns
Rise Time	t_r	See specified Test Circuit		10		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		17		ns
Fall Time	t_f	See specified Test Circuit		8		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=2A$		5		nC
Gate-to-Source Charge	Q_{gs}			1		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1		nC
Diode Forward Voltage	V_{SD}	$I_S=2A, V_{GS}=0$		1.0	1.2	V

Switching Time Test Circuit



2SK3120



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