

**2SK1921**

Ultrahigh-Speed Switching Applications

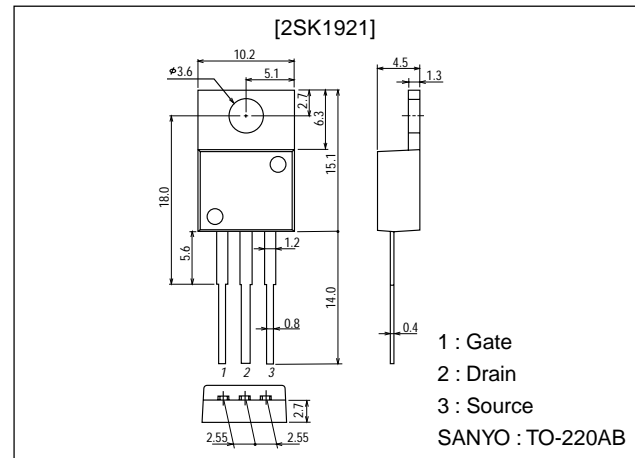
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.

Package Dimensions

unit:mm

2052C



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		250	V
Gate-to-Source Voltage	V_{GS}		±30	V
Drain Current (DC)	I_D		4	A
Drain Current (pulse)	I_{DP}	$PW \leq 10 \mu s$, duty cycle $\leq 1\%$	16	A
Allowable Power Dissipation	P_D		1.75	W
		$T_c = 25^\circ C$	50	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	$V_{(BR)DSS}$	$I_D = 1mA$, $V_{GS} = 0$	250			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100 \mu A$, $V_{DS} = 0$	±30			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 250V$, $V_{GS} = 0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 25V$, $V_{DS} = 0$			±10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10V$, $I_D = 1mA$	1.5		2.5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10V$, $I_D = 2A$	2.5	4		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D = 2A$, $V_{GS} = 10V$		0.5	0.7	Ω

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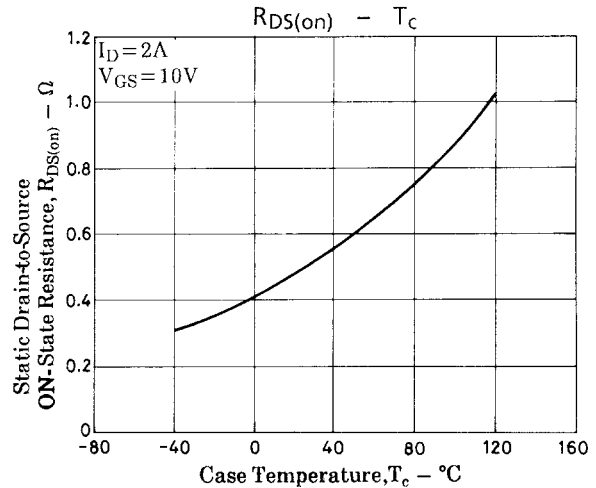
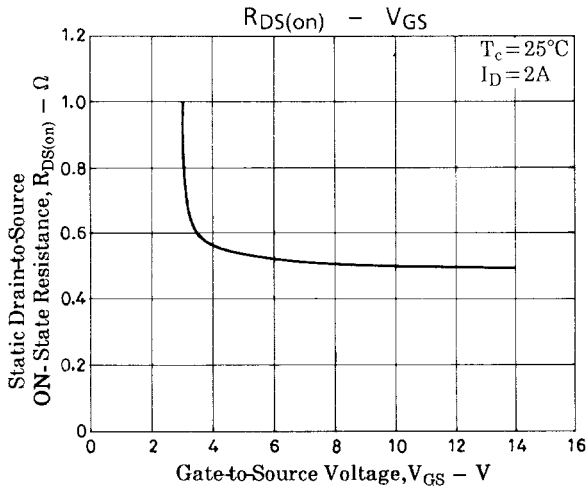
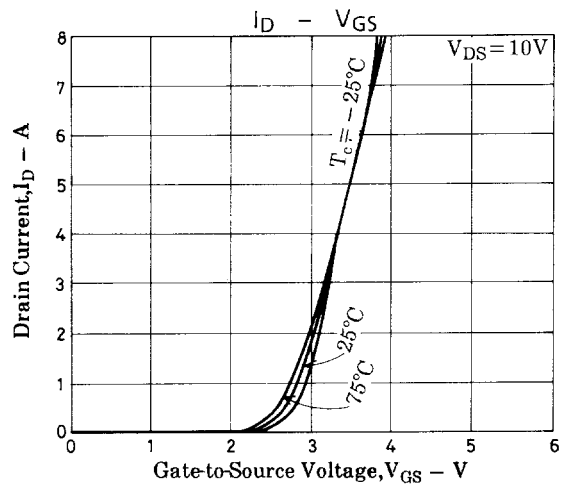
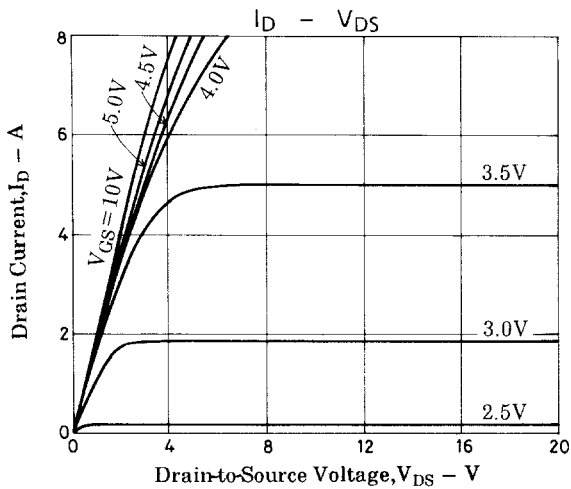
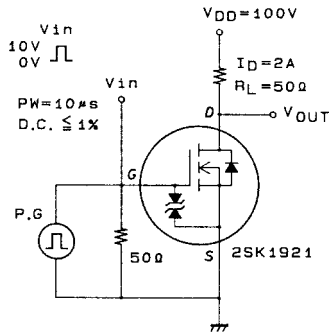
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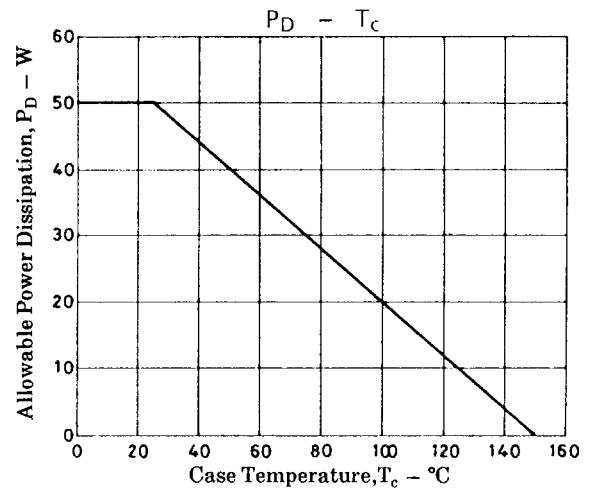
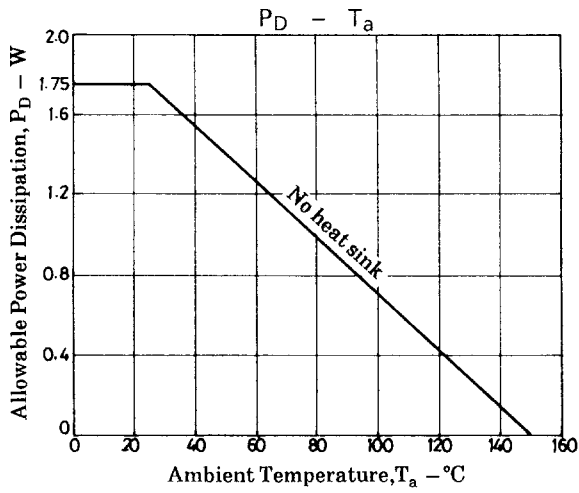
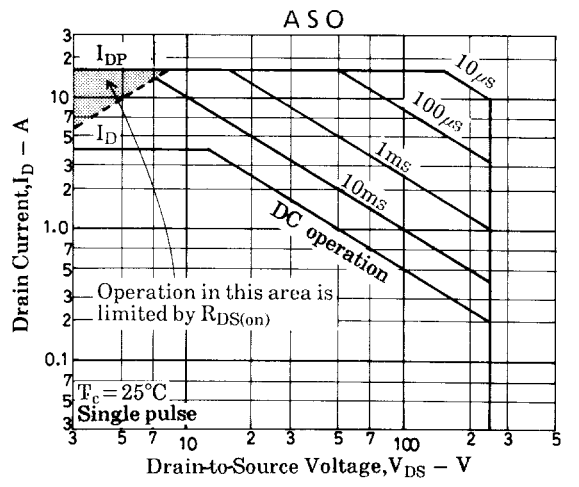
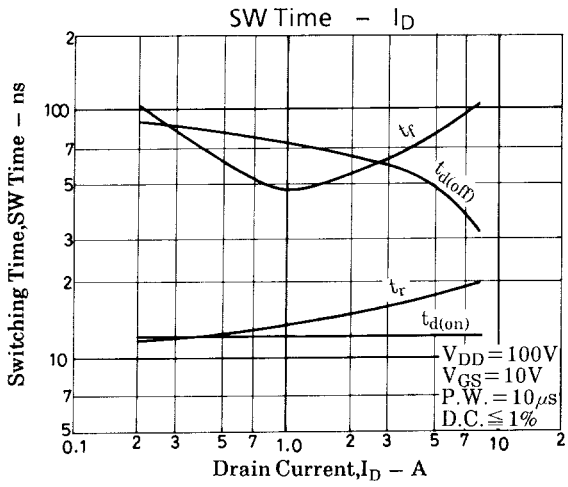
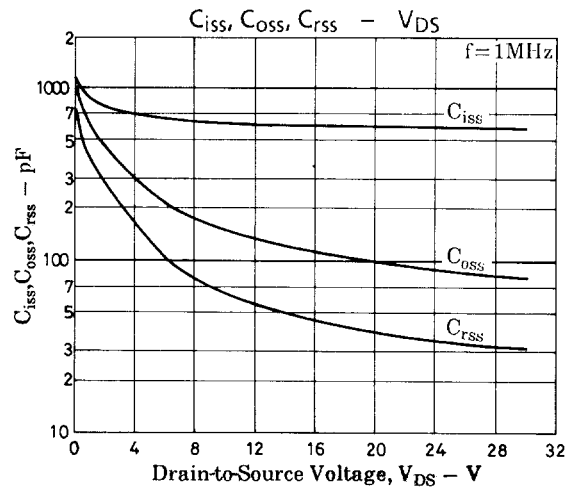
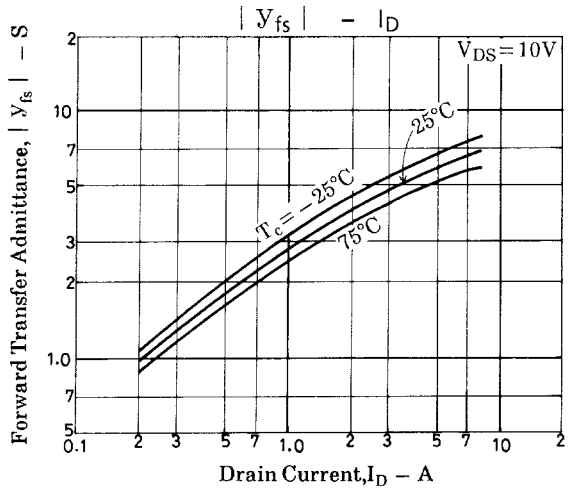
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Parameter	Symbol	Conditions	Ratings		Unit
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$	600		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$	100		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$	40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.	12		ns
Rise Time	t_r	See specified Test Circuit.	15		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.	65		ns
Fall Time	t_f	See specified Test Circuit.	55		ns
Diode Forward Voltage	V_{SD}	$I_S=4A, V_{GS}=0$	1.0	1.5	V

Switching Time Test Circuit



2SK1921



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