

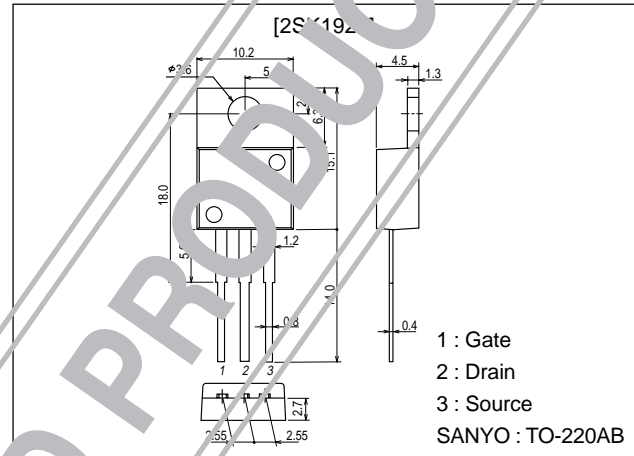
**SANYO****Ultrahigh-Speed Switching Applications****Features**

- Low ON resistance.
- Ultrahigh-speed switching.
- High-speed diode (trr=120ns).

**Package Dimensions**

unit:mm

2052C

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DS}$		600	V
Gate-to-Source Voltage	$V_{GS}$		$\pm 30$	V
Drain Current (DC)	$I_D$		4	A
Drain Current (pulse)	$I_{DP}$		16	A
Allowable Power Dissipation	$P_D$	$T_c = 25^\circ\text{C}$	1.75	W
Channel Temperature	$T_{ch}$		60	W
Storage Temperature	$T_{stg}$		150	$^\circ\text{C}$
			-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	$V_{(BR)DSS}$	$I_D = 10\text{mA}, V_{GS} = 0$	600			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 480\text{V}, V_{GS} = 0$			1.0	mA
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 30\text{V}, V_{DS} = 0$			$\pm 100$	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$	2.0		3.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}, I_D = 2\text{A}$	1.8	3.5		S
Static Drain-to-Source On-state Resistance	$R_{DS(on)}$	$I_D = 2\text{A}, V_{GS} = 10\text{V}$		1.8	2.4	$\Omega$

(Note) Be careful in handling the 2SK1923 because it has no protection diode between gate and source.

Continued on next page.

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

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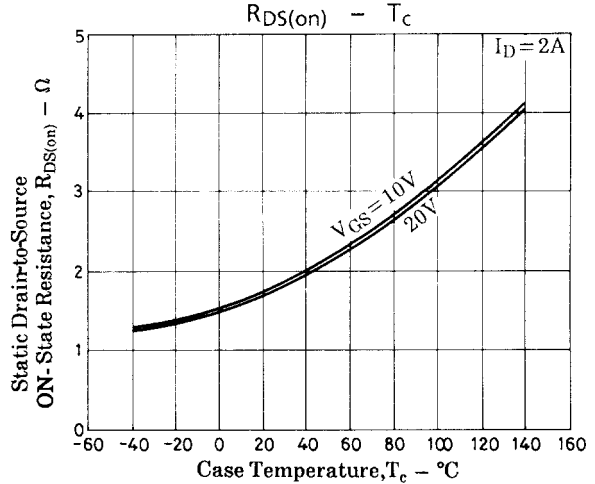
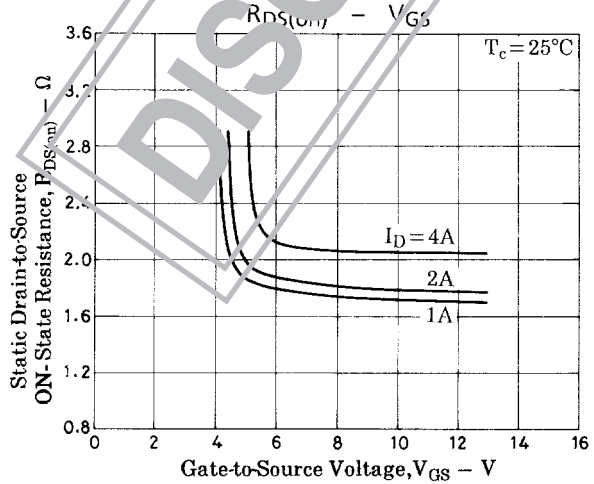
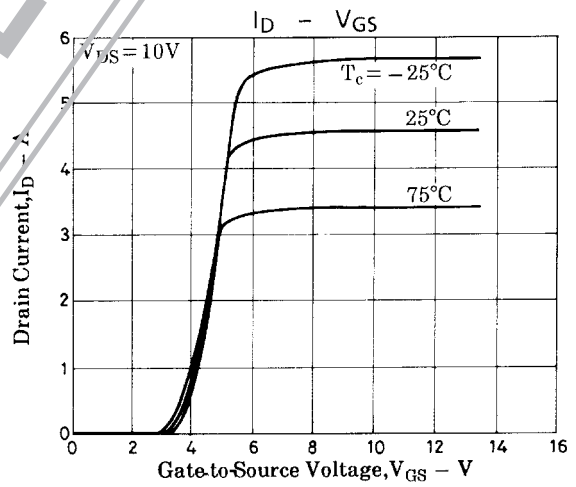
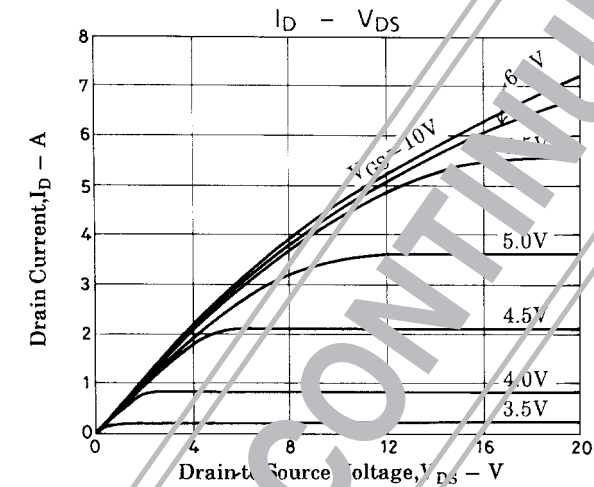
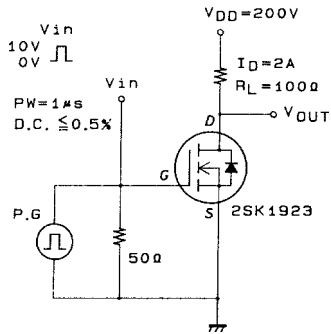
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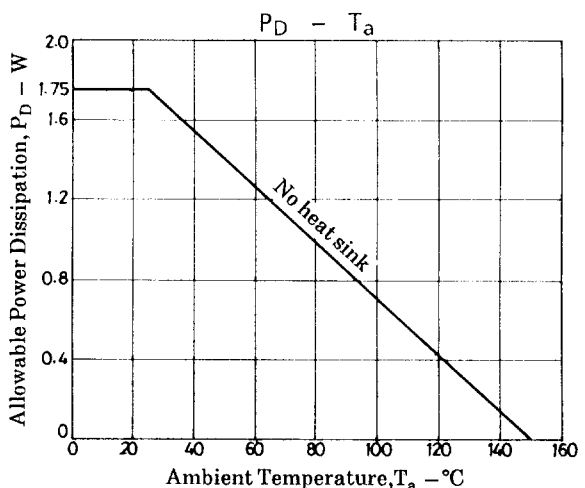
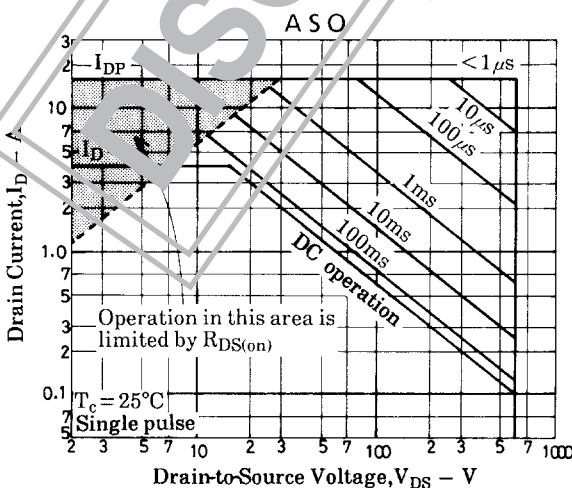
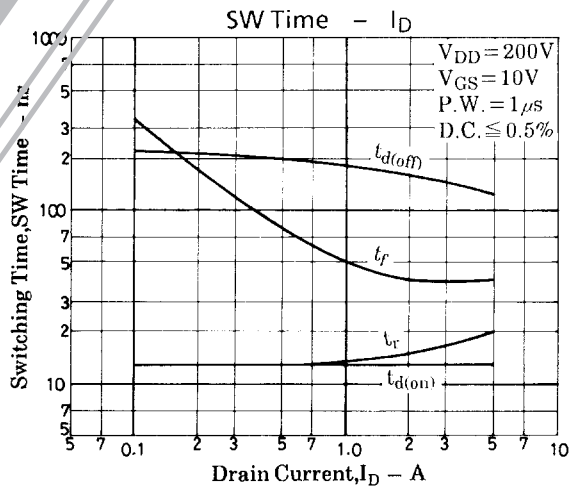
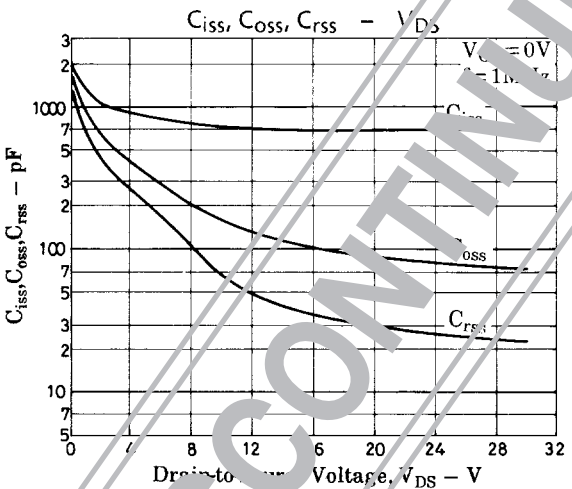
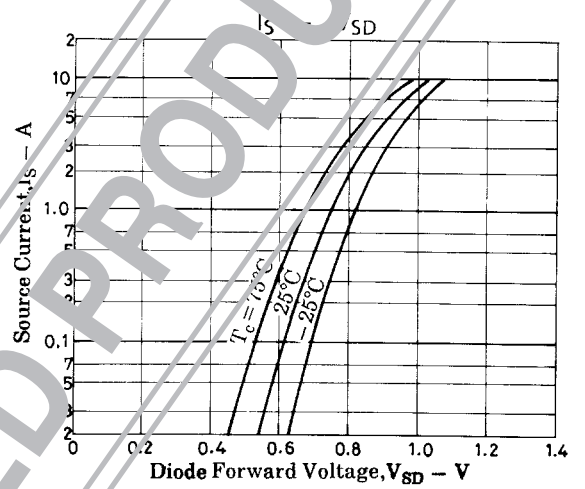
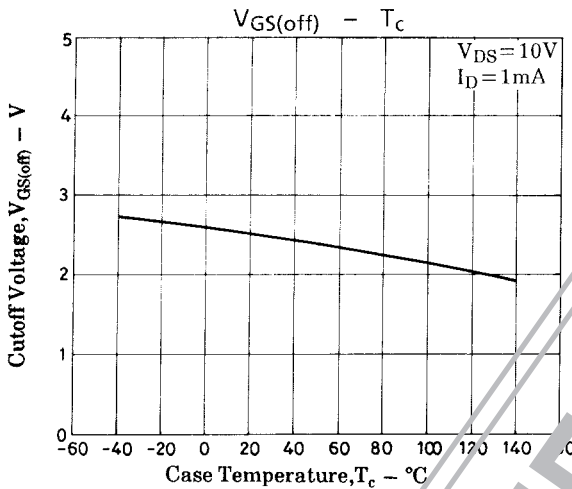
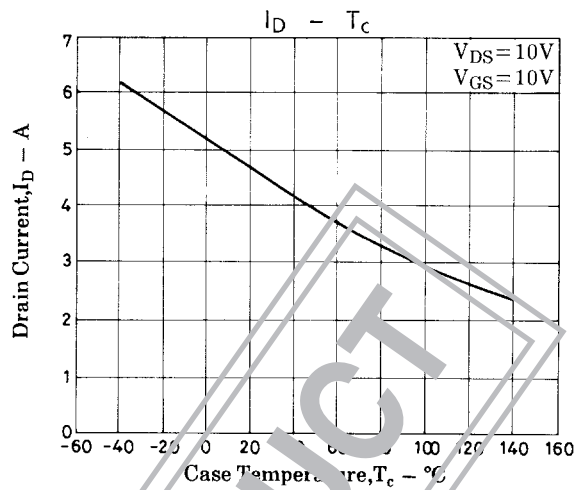
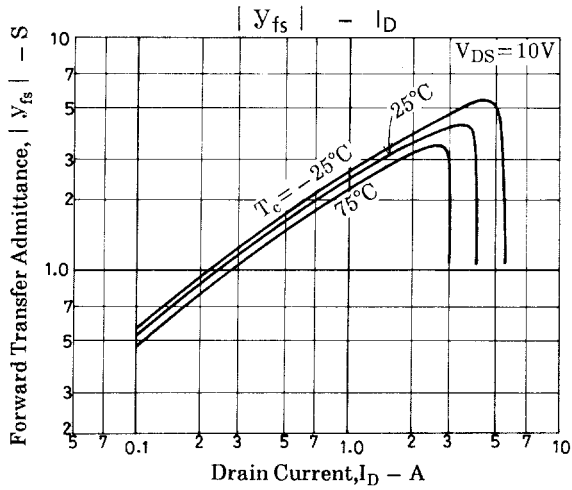
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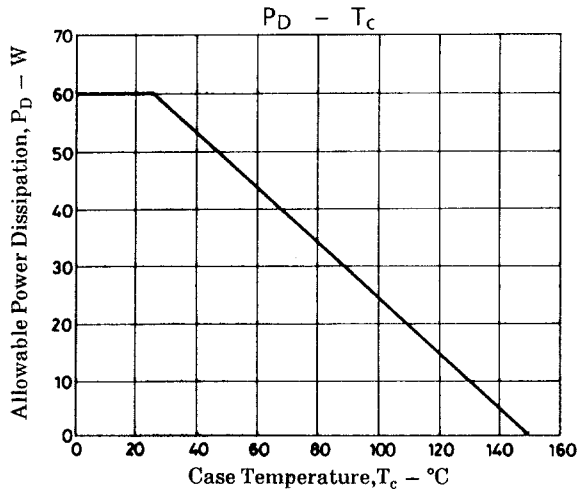
Parameter	Symbol	Conditions	Ratings	Unit
Input Capacitance	$C_{iss}$	$V_{DS}=20V, f=1MHz$	700	pF
Output Capacitance	$C_{oss}$	$V_{DS}=20V, f=1MHz$	90	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=20V, f=1MHz$	30	pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.	13	ns
Rise Time	$t_r$	See specified Test Circuit.	15	ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.	160	ns
Fall Time	$t_f$	See specified Test Circuit.	40	ns
Diode Forward Voltage	$V_{SD}$	$I_S=4A, V_{GS}=0$	1.5	V
Diode Reverse Recovery Time	$t_{rr}$	$I_S=4A, di/dt=100A/\mu s$	20	ns

## Switching Time Test Circuit



# 2SK1923





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