

**2SK2043**

Ultrahigh-Speed Switching Applications

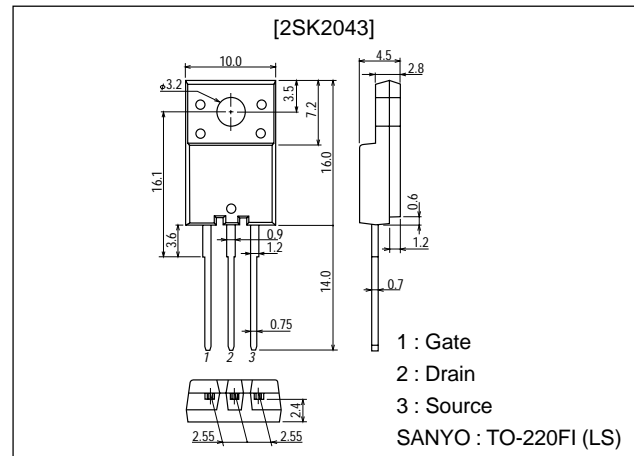
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- High-speed diode built in (trr=100ns).
- Micaless package facilitating easy mounting.

Package Dimensions

unit:mm

2078B



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		600	V
Gate-to-Source Voltage	V_{GS}		± 30	V
Drain Current (DC)	I_D		2	A
Drain Current (pulse)	I_{DP}		8	A
Allowable Power Dissipation	P_D		2.0	W
		$T_c=25^\circ\text{C}$	25	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}$, $V_{GS}=0$	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}	$V_{GS}=\pm 30\text{V}$, $V_{DS}=0$			± 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} $	$V_{DS}=10\text{V}$, $I_D=1\text{A}$	0.8	1.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=1\text{A}$, $V_{GS}=10\text{V}$		3.2	4.3	Ω

(Note) Be careful in handling the 2SK2043 because it has no protection diode between gate and source.

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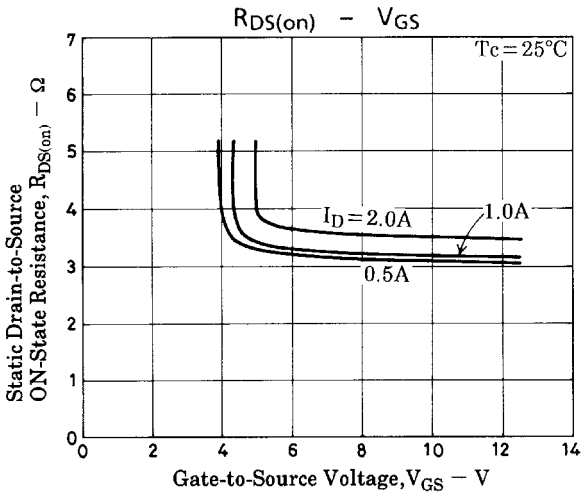
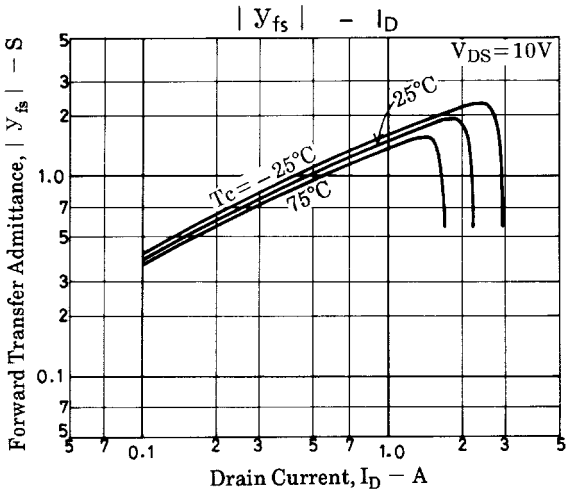
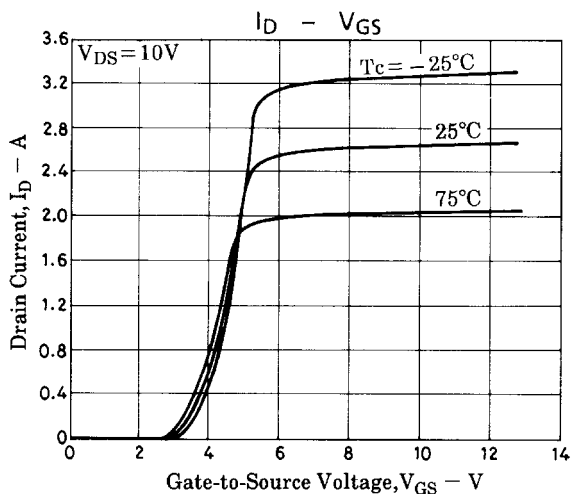
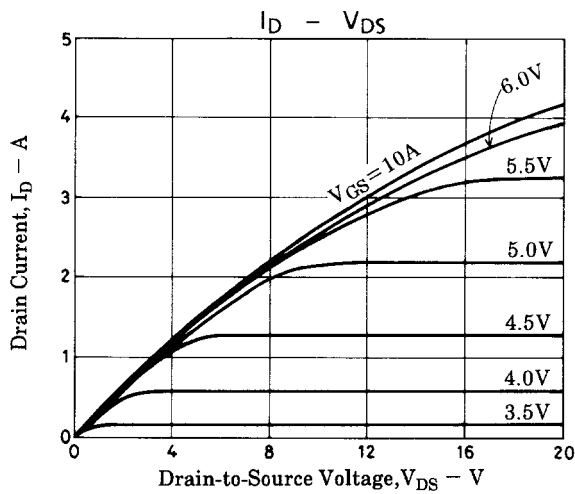
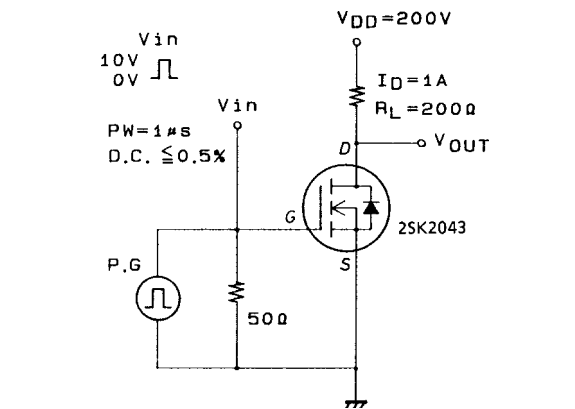
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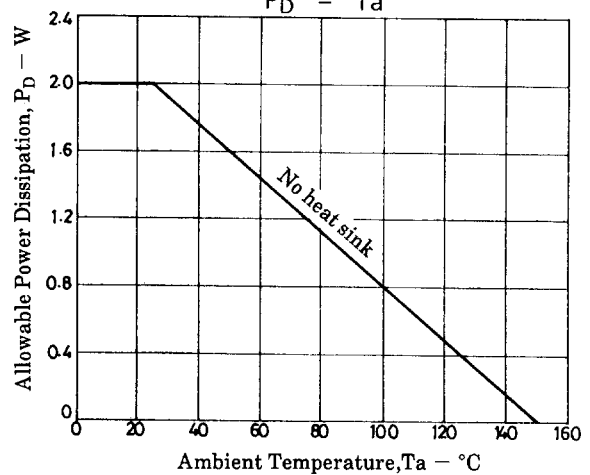
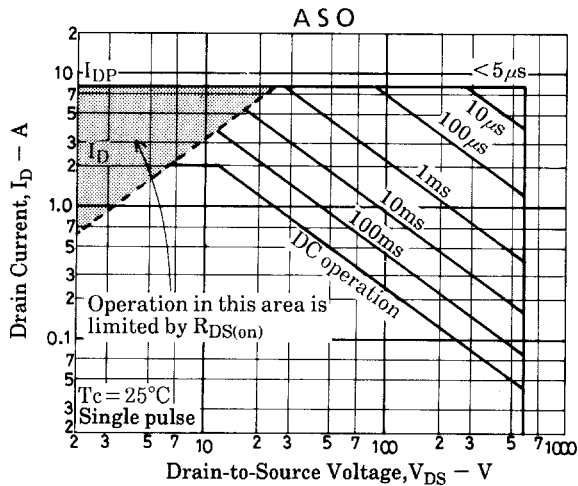
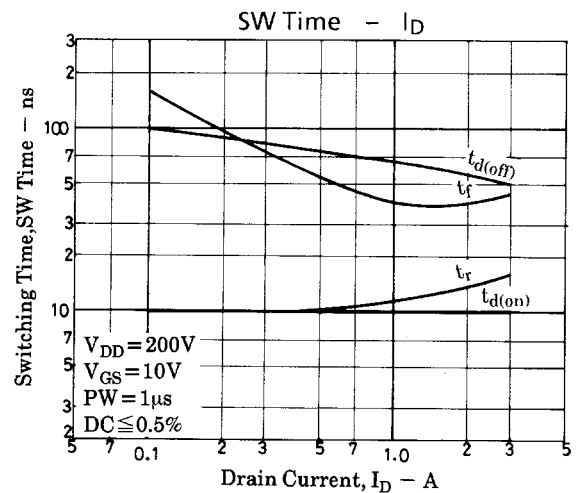
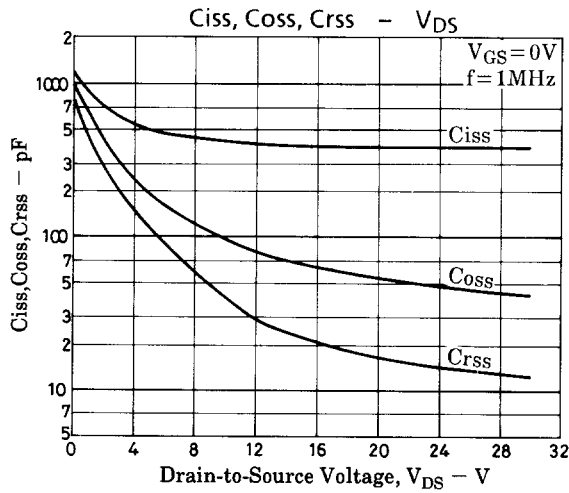
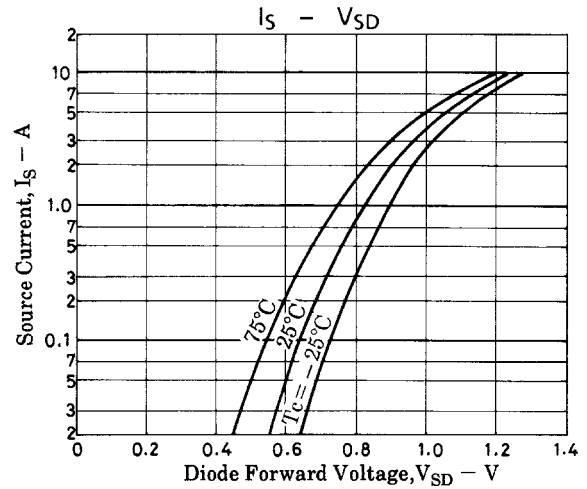
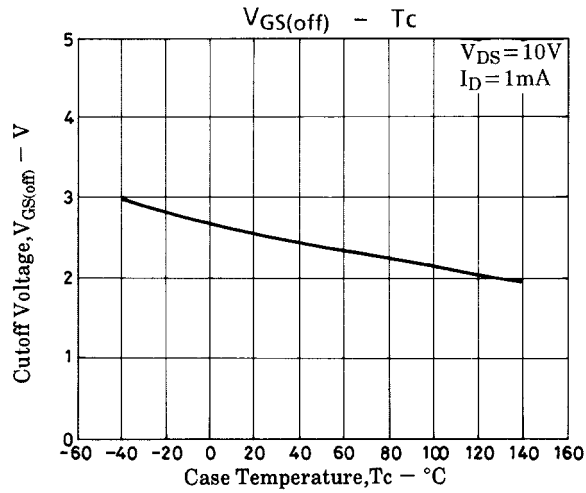
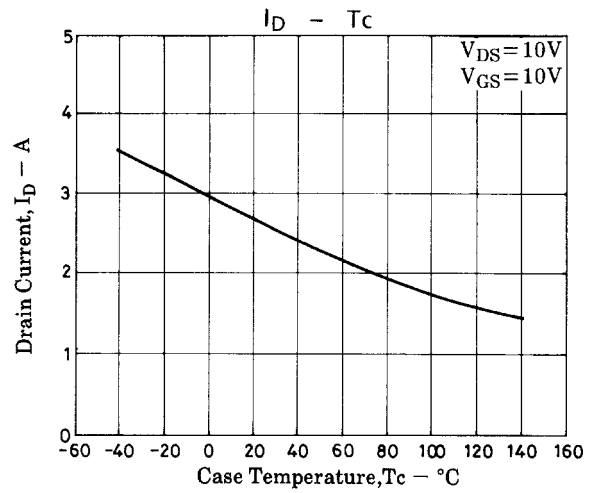
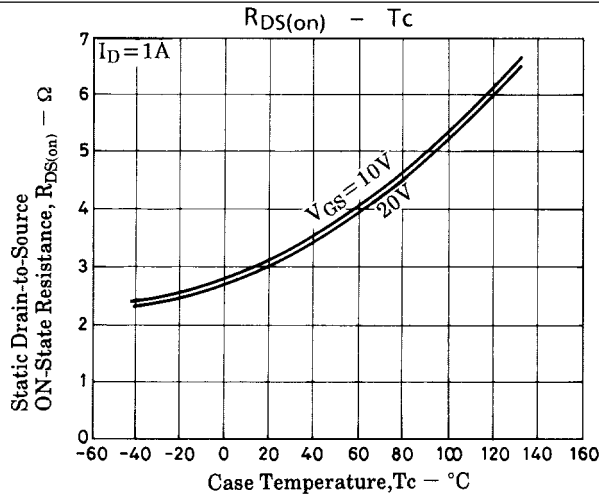
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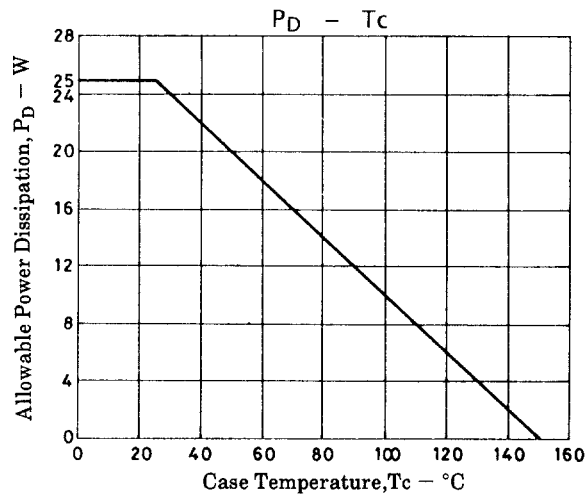
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Parameter	Symbol	Conditions	Ratings		Unit
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz	400		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz	55		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz	15		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.	10		ns
Rise Time	t _r	See specified Test Circuit.	12		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.	65		ns
Fall Time	t _f	See specified Test Circuit.	40		ns
Diode Forward Voltage	V _{SD}	I _S =2A, V _{GS} =0	1.5		V
Diode Reverse Recovery Time	t _{rr}	I _S =2A, di/dt=100A/μs	100		ns

Switching Time Test Circuit







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