



2SK1925

Ultrahigh-Speed Switching Applications

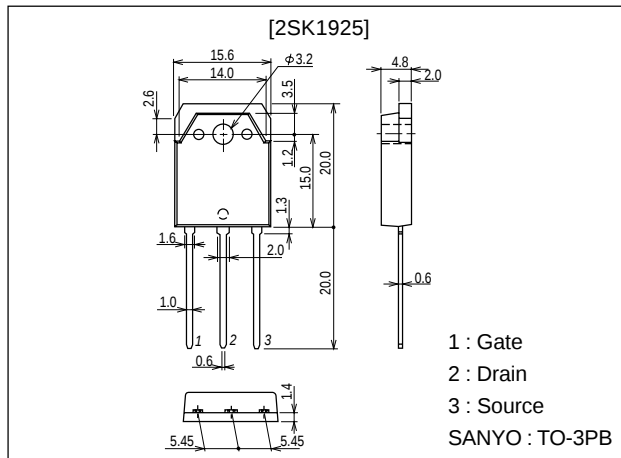
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- High-speed diode ($t_{rr}=150\text{ns}$).

Package Dimensions

unit:mm

2056A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		600	V
Gate-to-Source Voltage	V_{GSS}		± 30	V
Drain Current (DC)	I_D		8	A
Drain Current (pulse)	I_{DP}		32	A
Allowable Power Dissipation	P_D		2.5	W
		$T_c=25^{\circ}\text{C}$	120	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_{DSS}	$I_D=10mA, V_{GS}=0$	600			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=480V, V_{GS}=0$			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0$			± 100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2.0		3.0	V
Forward Transfer Admittance	y _{fs}	$V_{DS}=10V, I_D=4A$	2.8	5.5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=4A, V_{GS}=10V$		0.9	1.2	Ω

(Note) Be careful in handling the 2SK1925 because it has no protection diode between gate and source.

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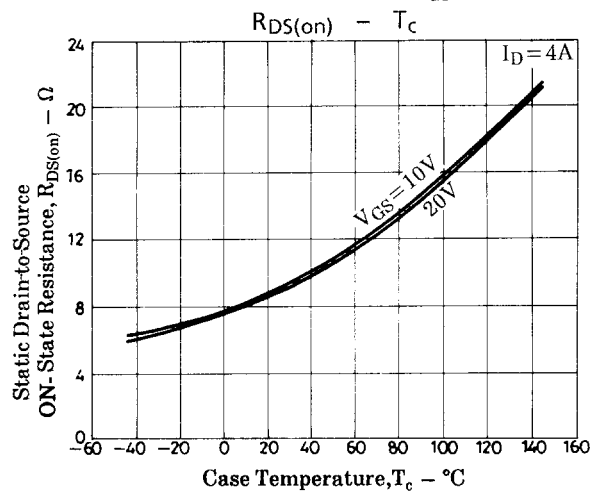
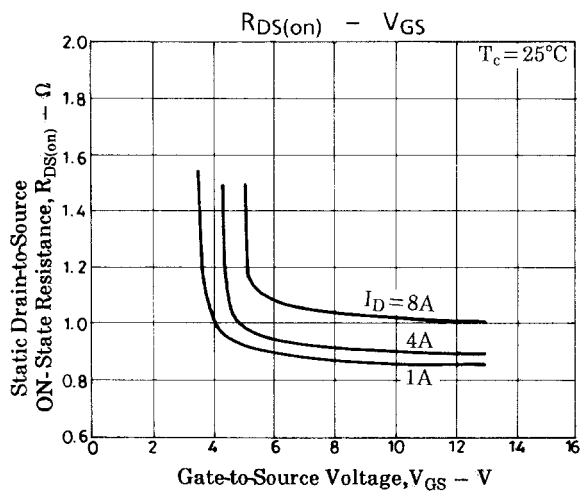
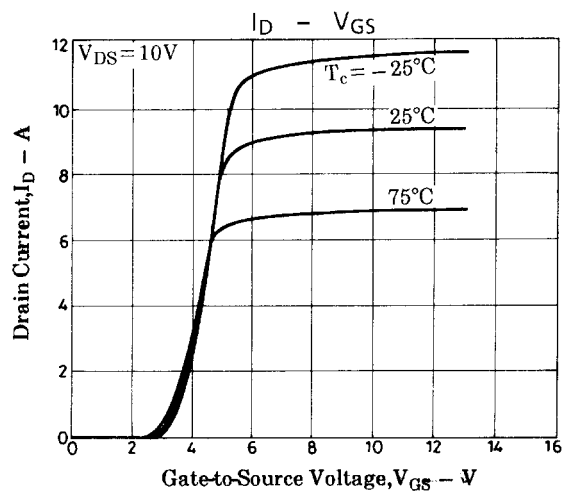
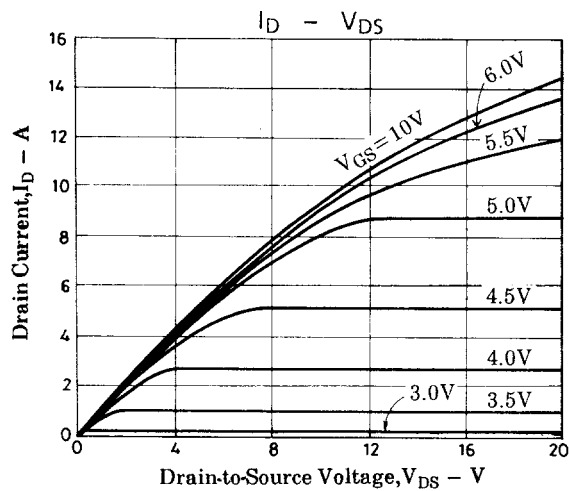
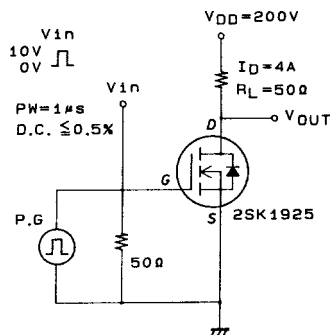
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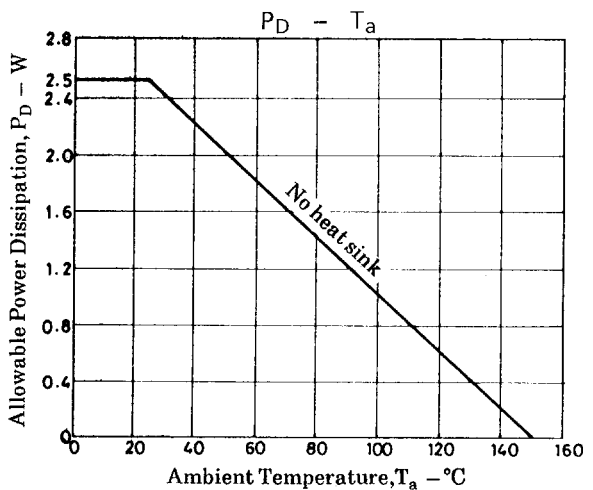
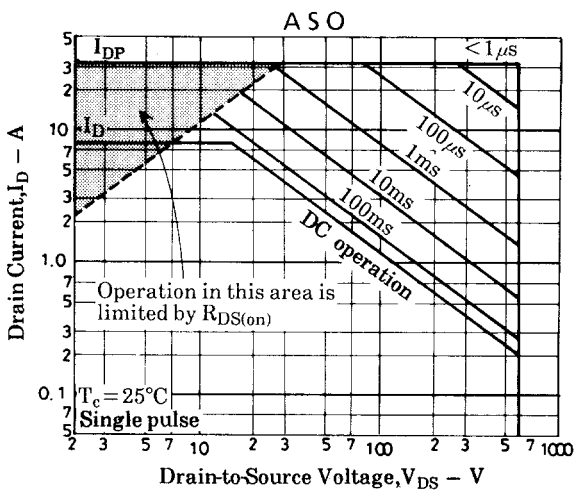
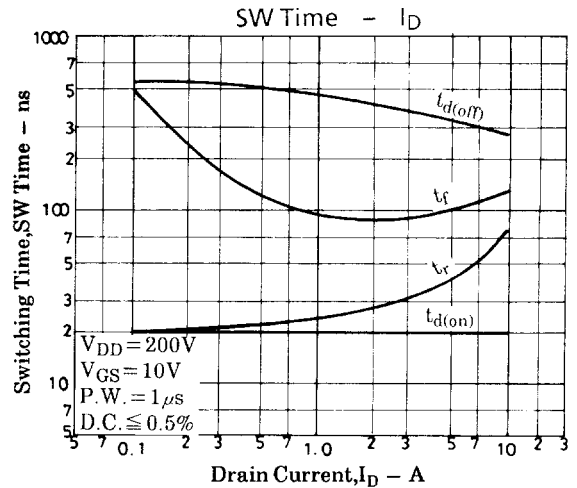
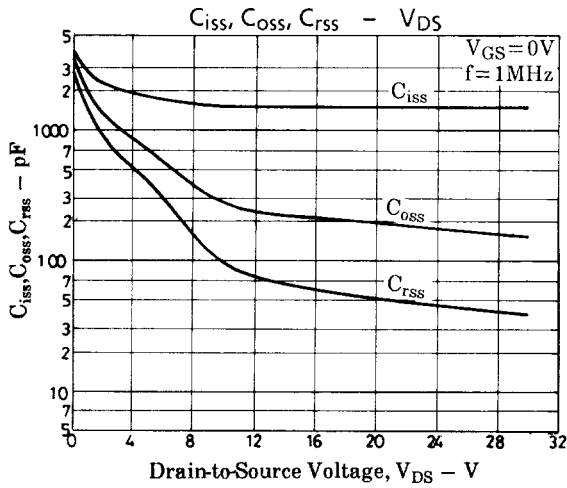
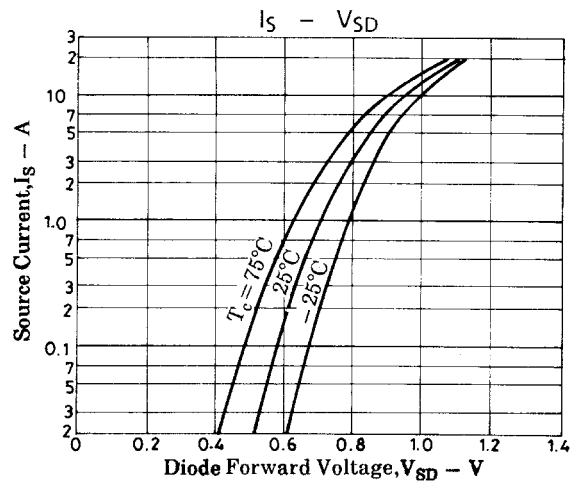
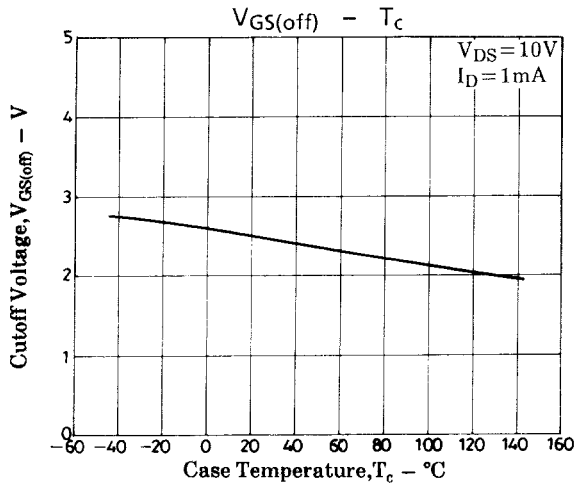
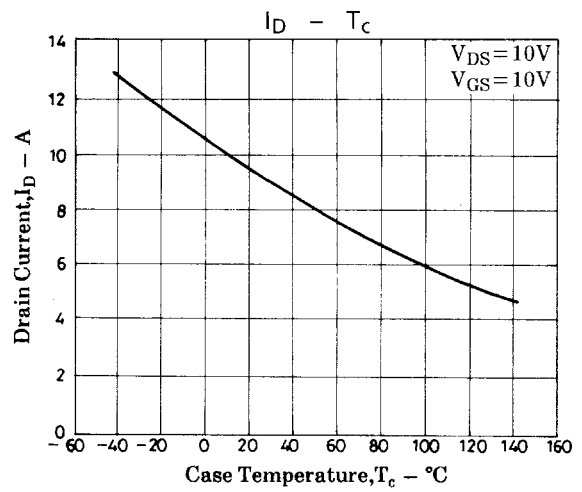
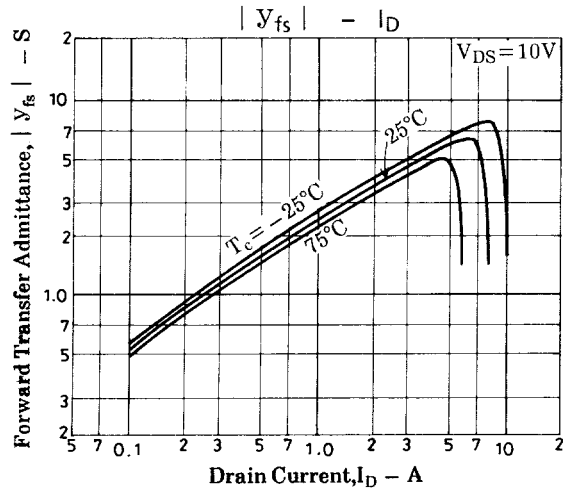
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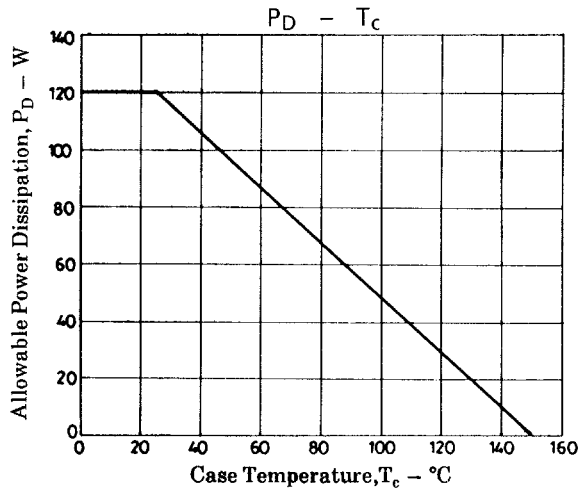
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		1500		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		190		pF
Reverse Transfer Capacitance	Crss	V _{DS} =20V, f=1MHz		50		pF
Turn-ON Delay Time	t _{d(on)}	See specified Test Circuit.		20		ns
Rise Time	t _r	See specified Test Circuit.		35		ns
Turn-OFF Delay Time	t _{d(off)}	See specified Test Circuit.		350		ns
Fall Time	t _f	See specified Test Circuit.		100		ns
Diode Forward Voltage	V _{SD}	I _S =8A, V _{GS} =0			1.5	V
Diode Reverse Recovery Time	t _{rr}	I _S =8A, di/dt=100A/μs		150		ns

Switching Time Test Circuit







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