

**2SK1461**

Ultrahigh-Speed Switching Applications

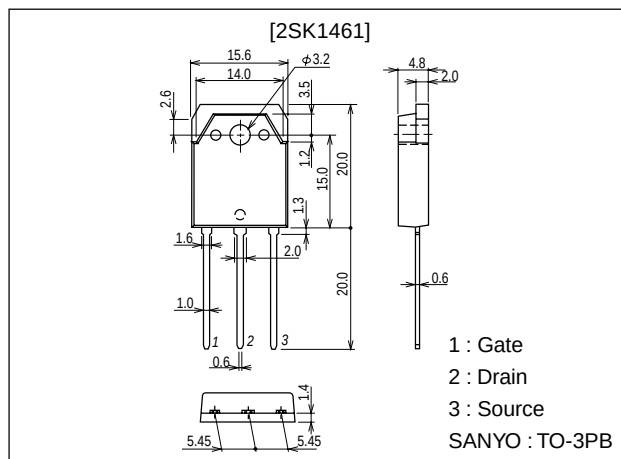
Features

- Low ON-state resistance.
- Ultrahigh-speed switching.
- Converters.

Package Dimensions

unit:mm

2056A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		900	V
Gate-to-Source Voltage	V_{GS}		±30	V
Drain Current (DC)	I_D		5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	10	A
Allowable Power Dissipation	P_D	Tc=25°C	120	W
			2.5	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	900			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=900V, V_{GS}=0$			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=±30V, V_{DS}=0$			±100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2.0		3.0	V
Forward Transfer Admittance	yfs	$V_{DS}=20V, I_D=2A$	1.0	2.0		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=2A, V_{GS}=10V$		2.8	3.6	Ω

(Note) Be careful in handling the 2SK1461 because it has no protection diode between gate and source.

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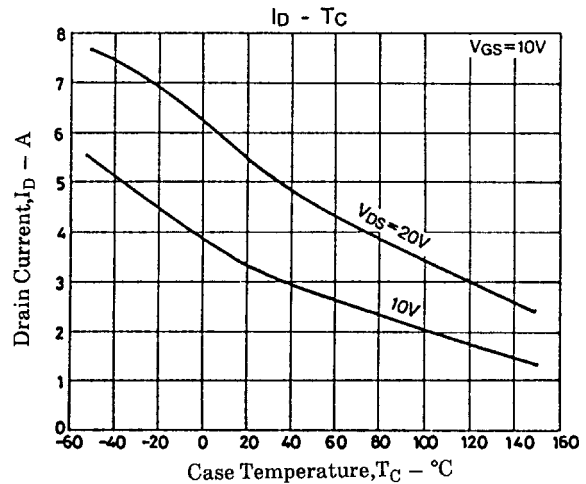
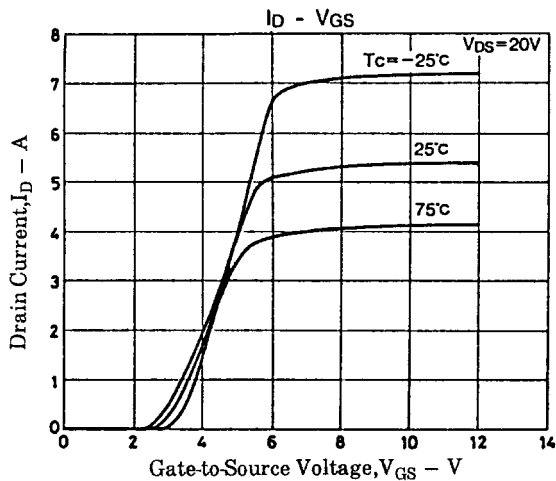
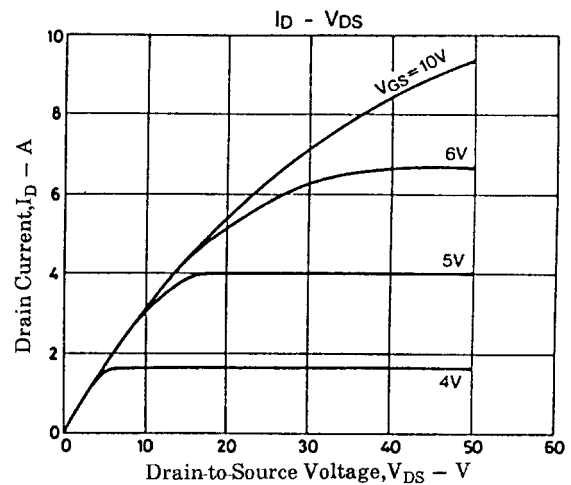
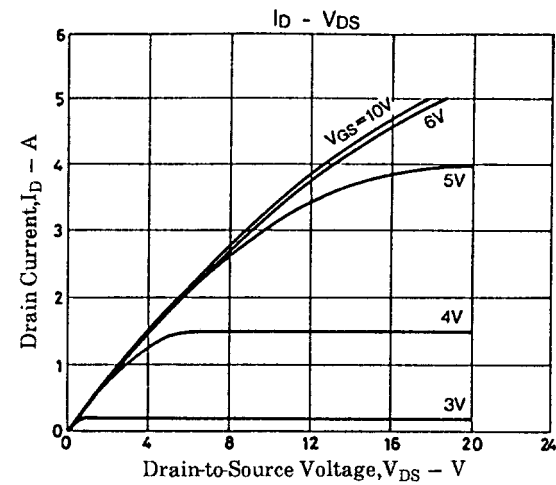
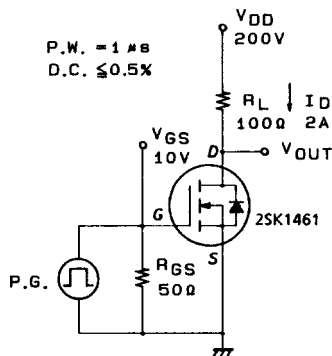
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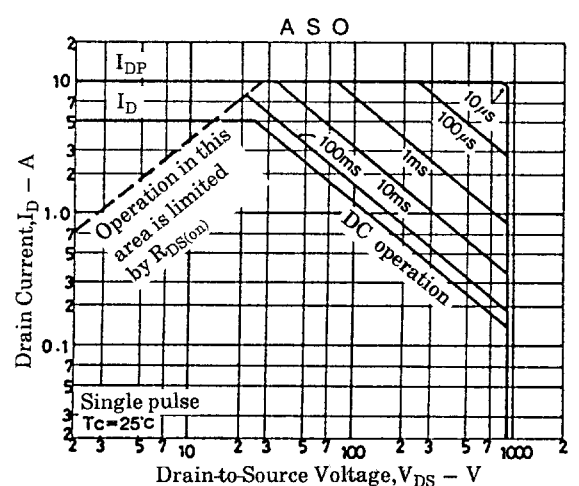
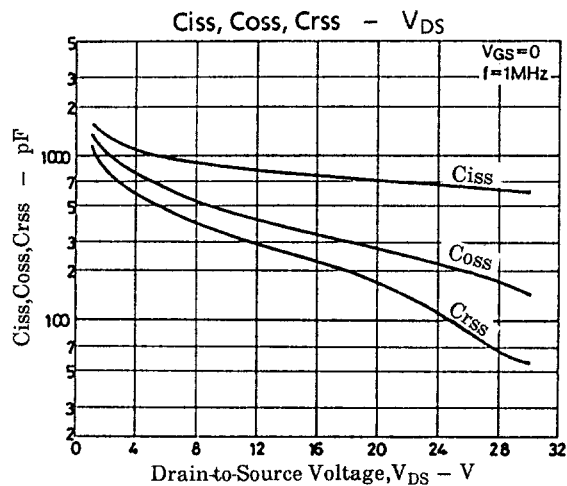
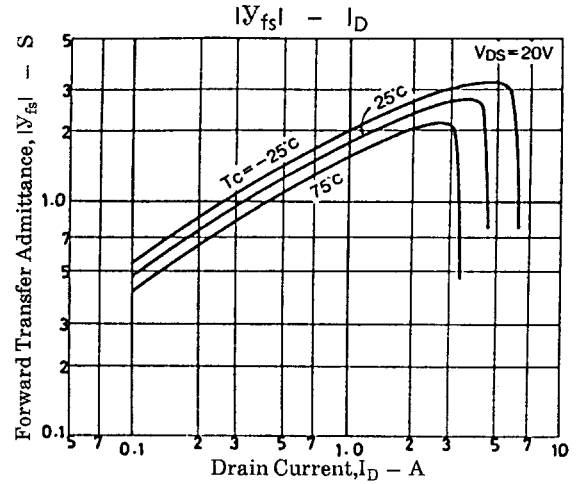
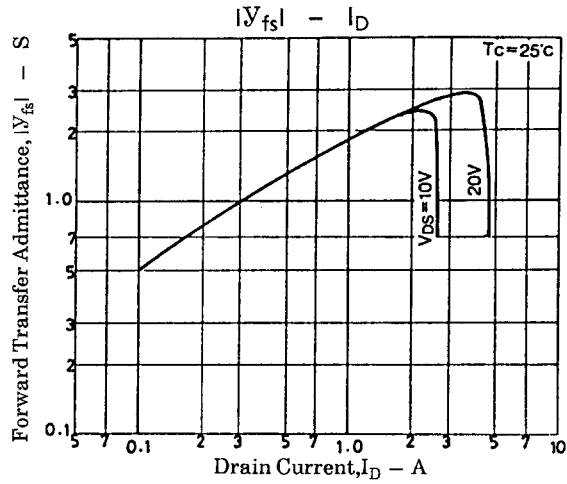
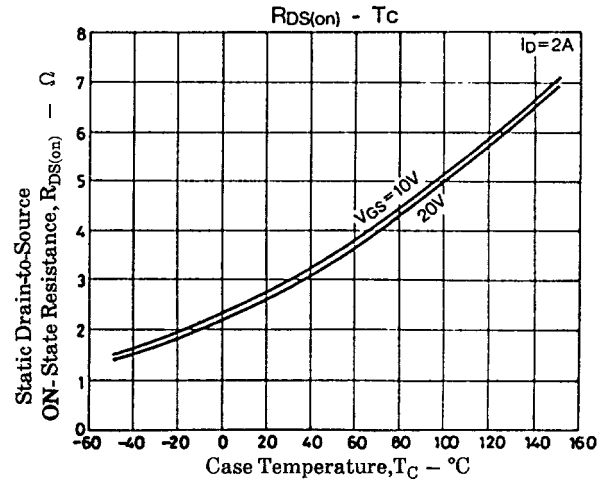
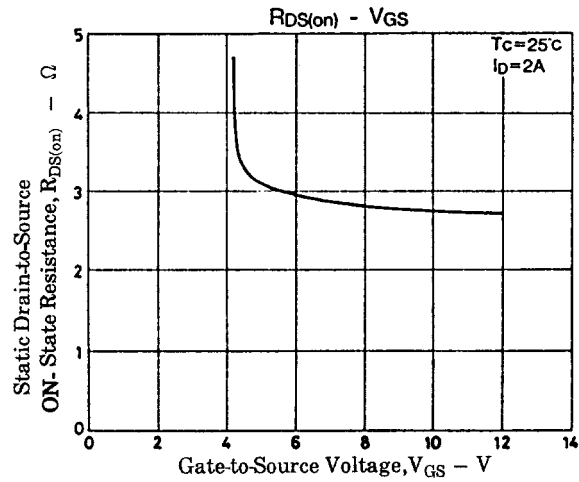
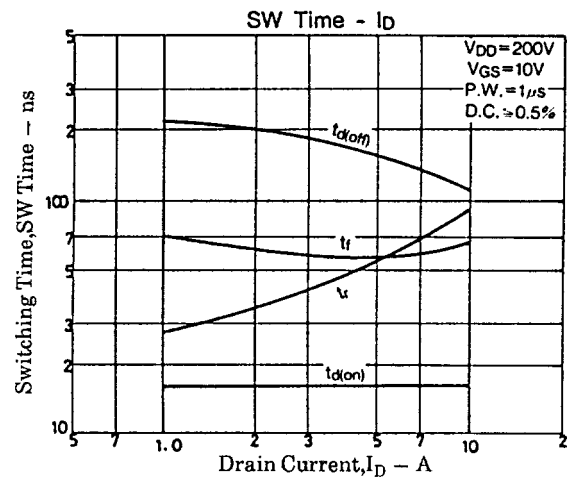
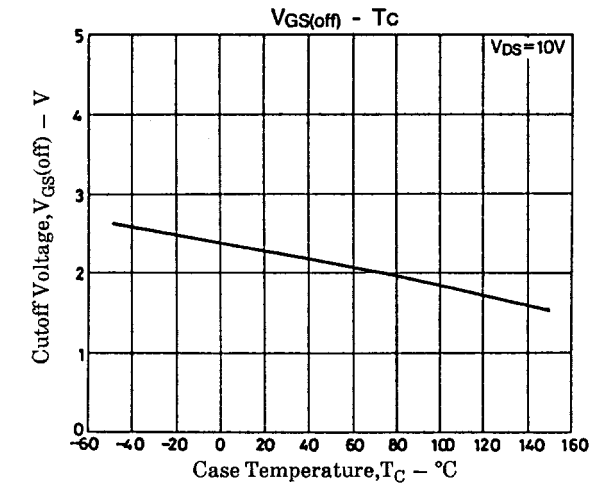
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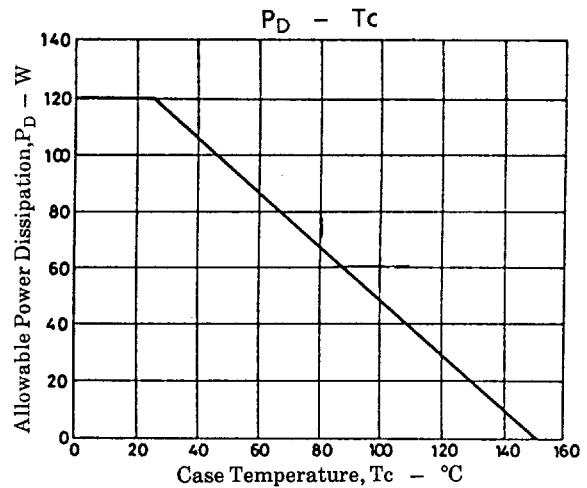
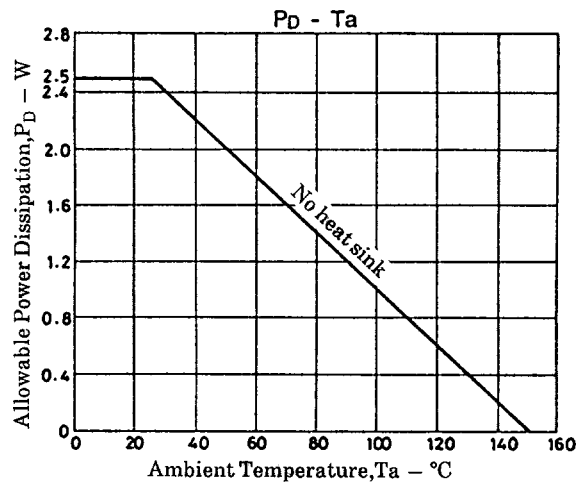
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		700		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		300		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		170		pF
Turn-ON Delay Time	$t_{d(on)}$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		15		ns
Rise Time	t_r	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		35		ns
Turn-OFF Delay Time	$t_{d(off)}$	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		200		ns
Fall Time	t_f	$I_D=2A, V_{GS}=10V, V_{DD}=200V, R_{GS}=50\Omega$		65		ns
Diode Forward Voltage	V_{SD}	$I_S=5A, V_{GS}=0$			1.8	V

Switching Time Test Circuit







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