

2SK1728



Ultrahigh-Speed Switching Applications

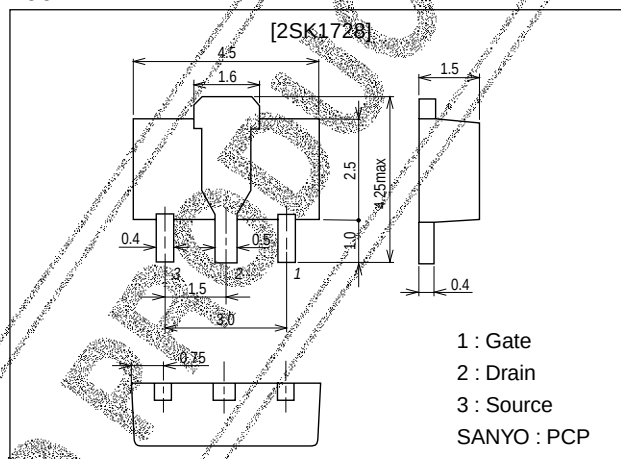
Features

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

Package Dimensions

unit:mm

2062A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		100	V
Gate-to-Source Voltage	V_{GSS}		±15	V
Drain Current (DC)	I_D		1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s, \text{ duty cycle} \leq 1\%$	4	A
Allowable Power Dissipation	P_D	$T_C = 25^\circ\text{C}$	3.5	W
		Mounted on a ceramic board (250mm ² ×0.8mm)	1.3	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	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=500mA$	0.6	1.0		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D=500mA, V_{GS}=10V$		2.7	3.5	Ω
	$R_{DS(on)}$	$I_D=500mA, V_{GS}=4V$		3.2	4.2	Ω

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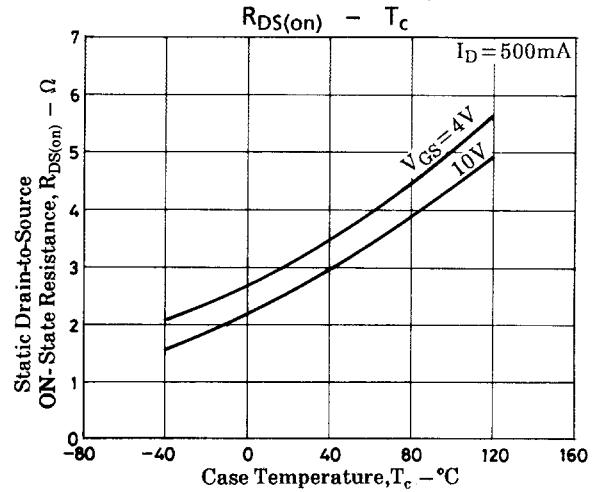
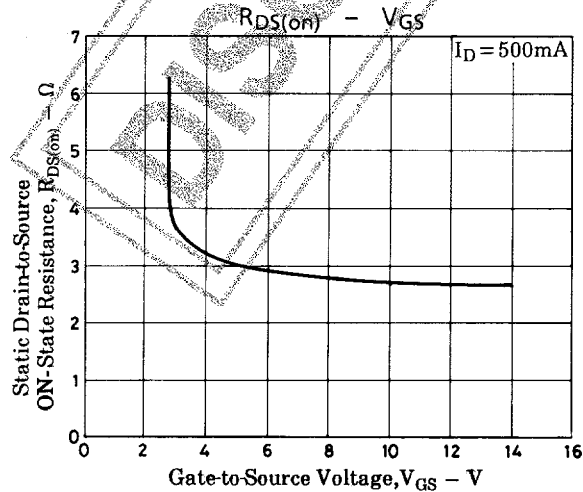
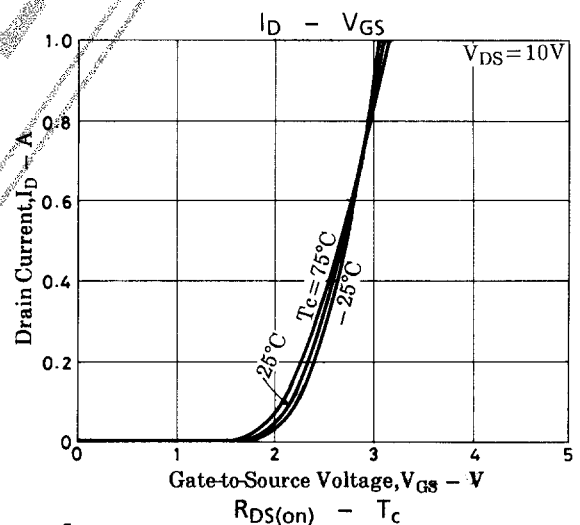
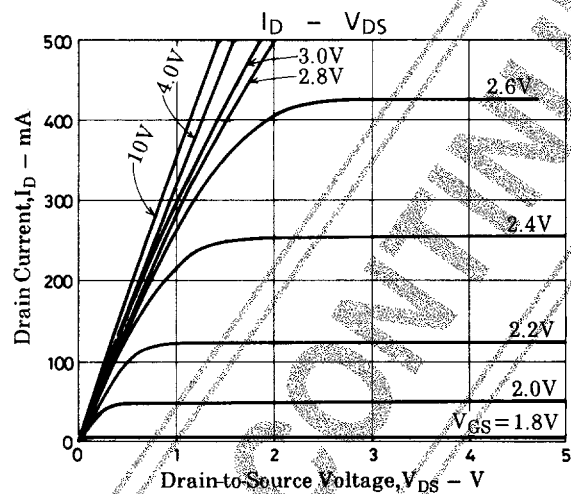
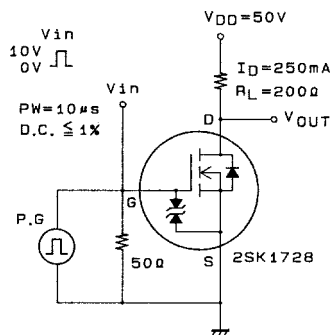
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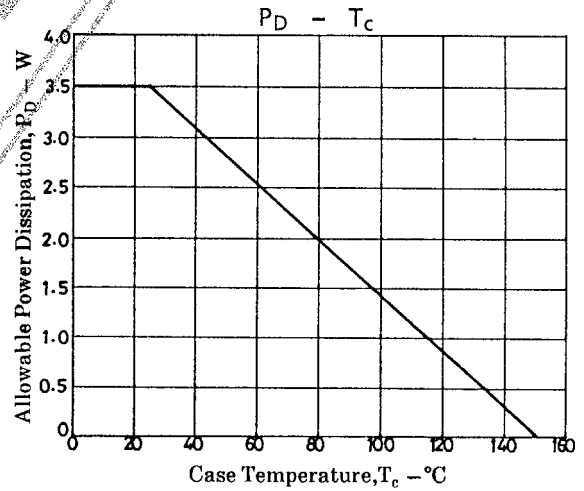
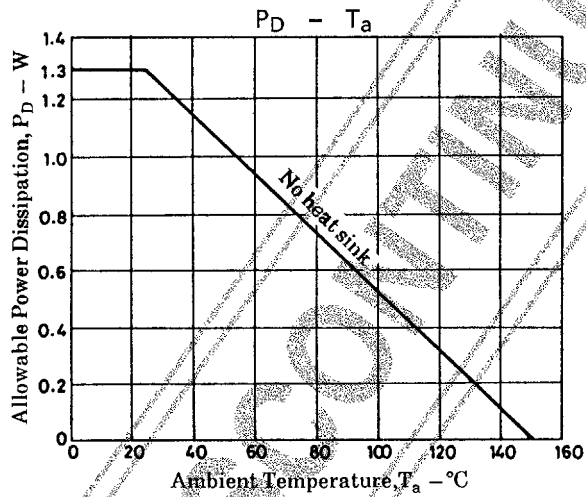
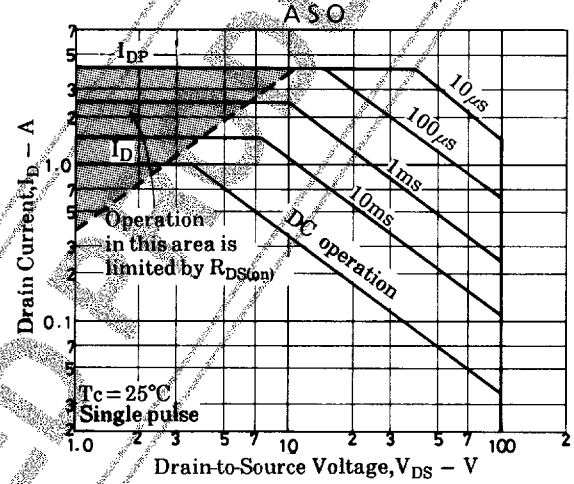
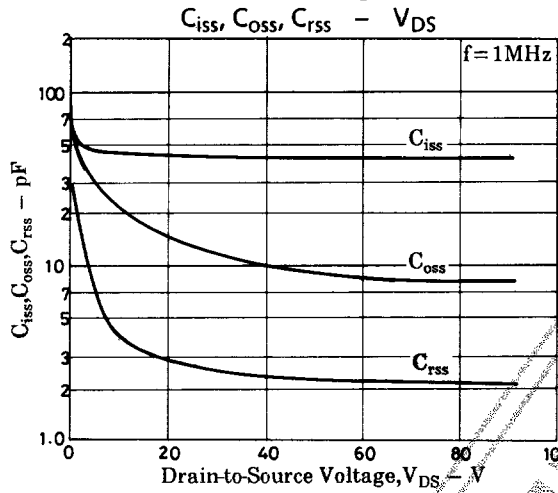
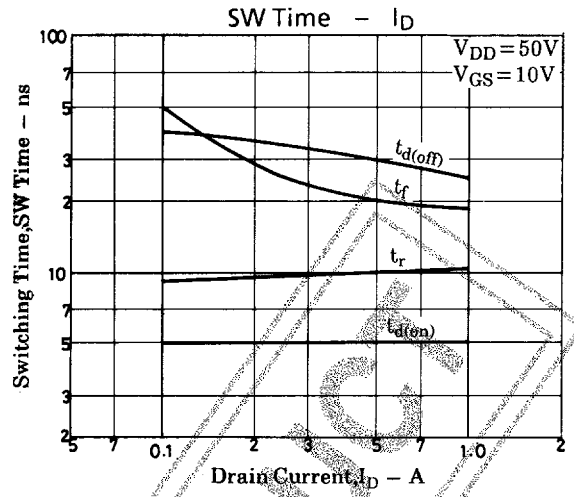
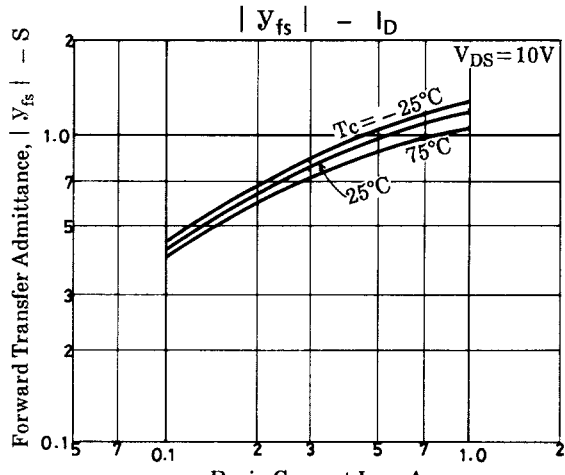
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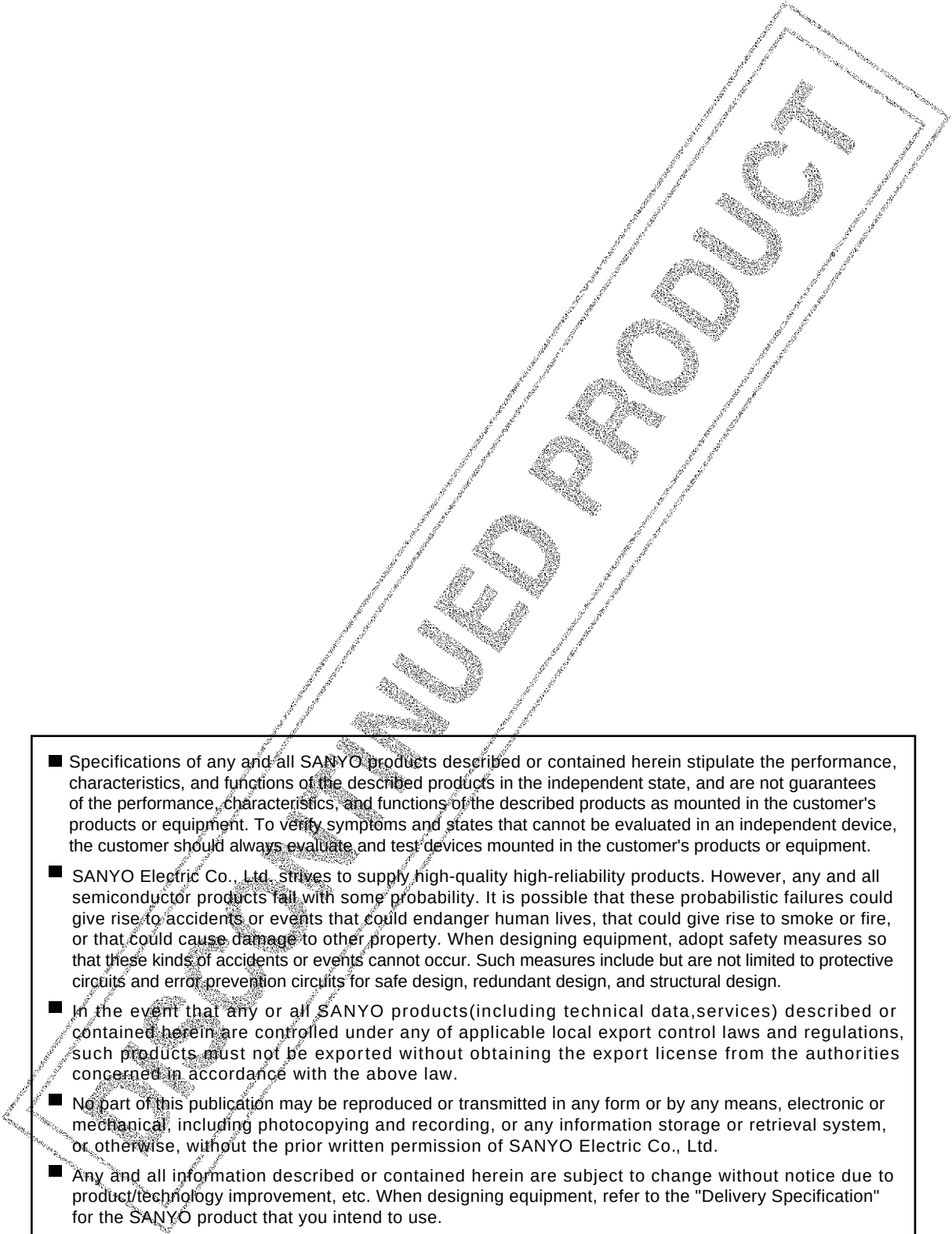
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Parameter	Symbol	Conditions	Ratings	Unit
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$	45	pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$	15	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$	3	pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit	5	ns
Rise Time	t_r	See specified Test Circuit	10	ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit	30	ns
Fall Time	t_f	See specified Test Circuit	20	ns
Diode Forward Voltage	V_{SD}	$I_S=1A, V_{GS}=0$	1.0	V

Switching Time Test Circuit





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