

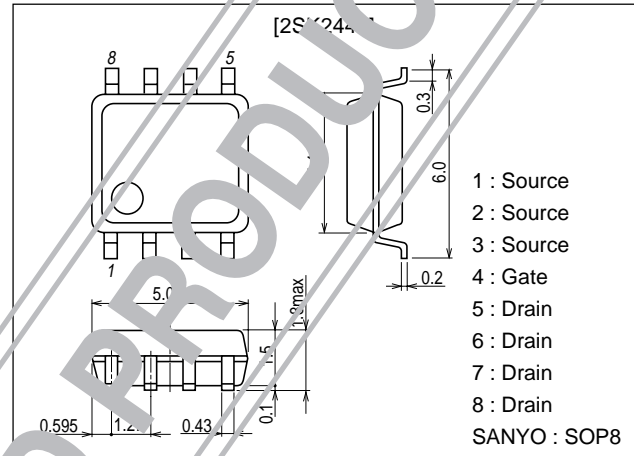
**SANYO****Ultrahigh-Speed Switching Applications****Features**

- Low ON resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

**Package Dimensions**

unit:mm

2116

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		20	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 12$	V
Drain Current (DC)	$I_D$		7	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 100\mu\text{s}$ , duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	$P_D$	Mounted on ceramic board (1000mm <sup>2</sup> ×0.8mm)	2.0	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	$V_{(BR)DSS}$	$I_D=1\text{mA}$ , $V_{GS}=0$	20			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=16\text{V}$ , $V_{GS}=0$			100	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10\text{V}$ , $V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$ , $I_D=1\text{mA}$	0.4		1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$ , $I_D=7\text{A}$	12	18		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)1}$	$I_D=7\text{A}$ , $V_{GS}=4\text{V}$		25	32	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=2\text{A}$ , $V_{GS}=2.5\text{V}$		37	48	$\text{m}\Omega$

Continued on next page.

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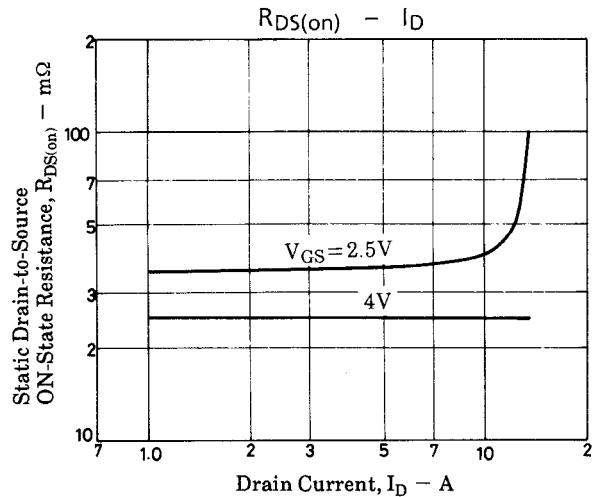
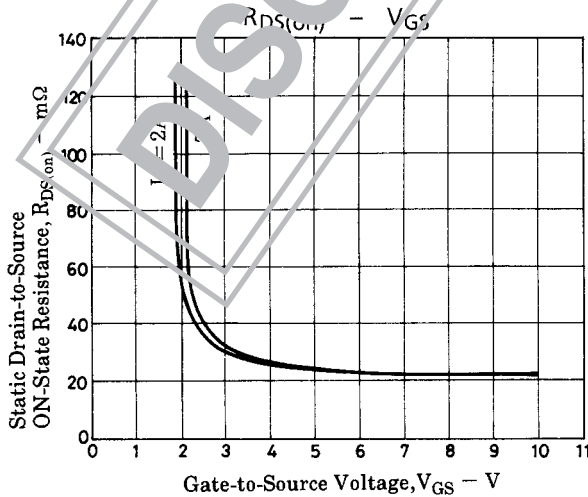
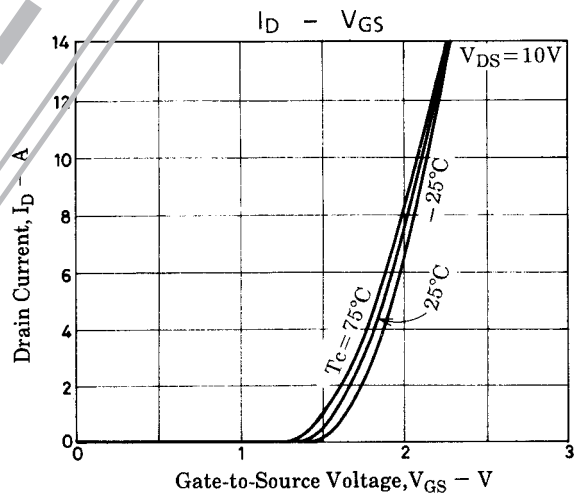
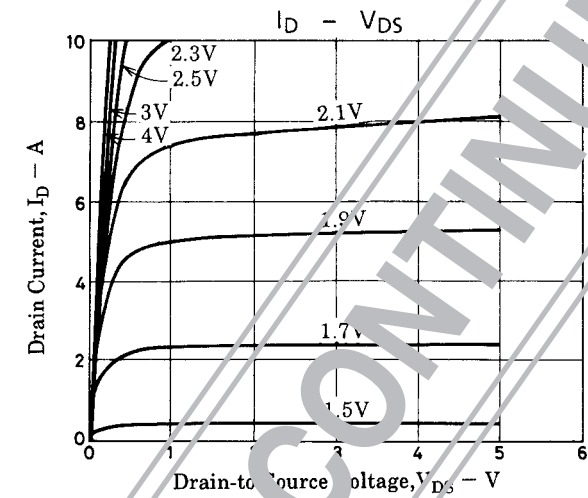
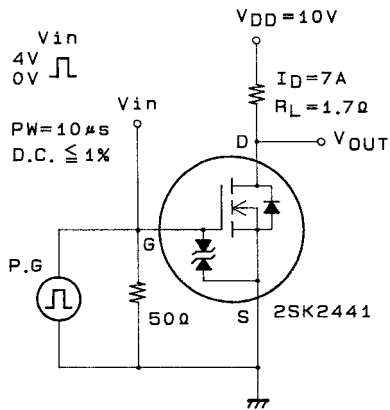
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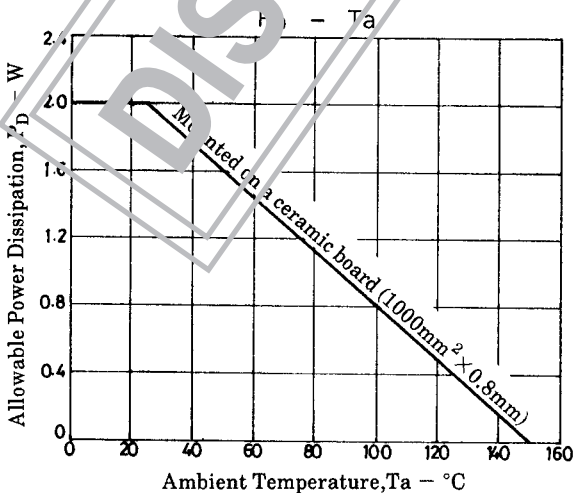
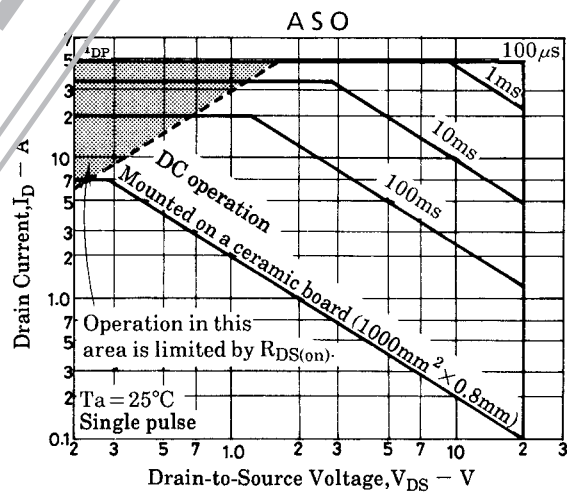
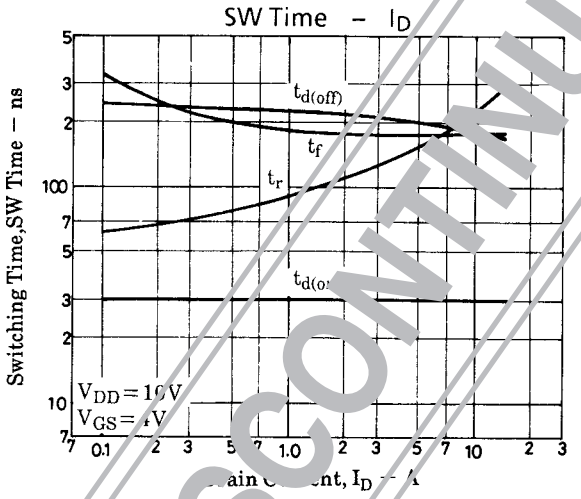
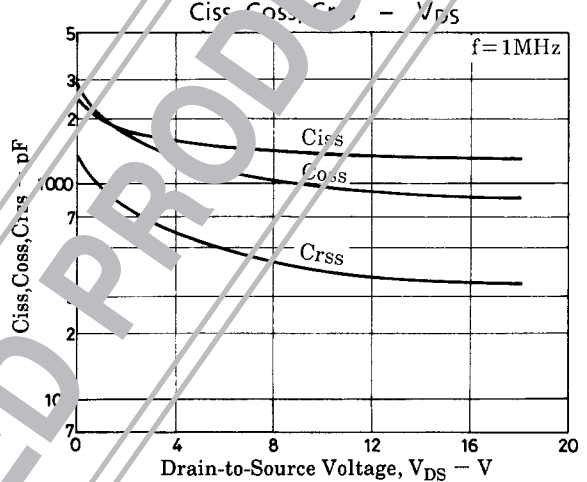
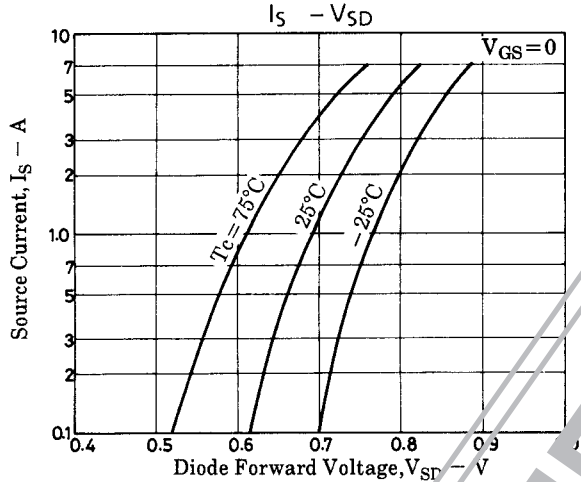
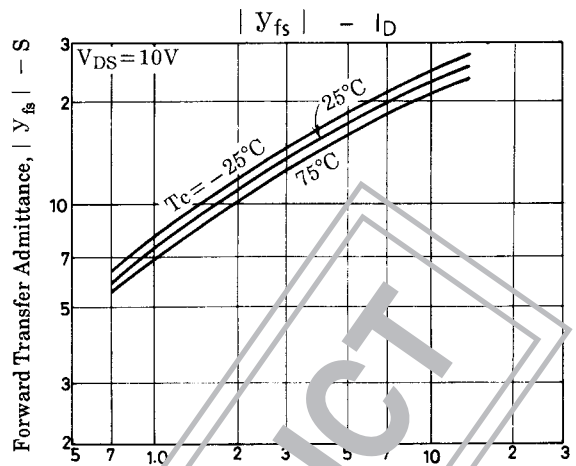
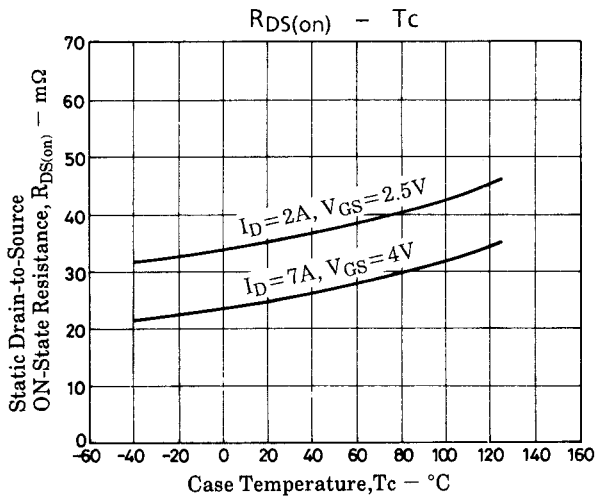
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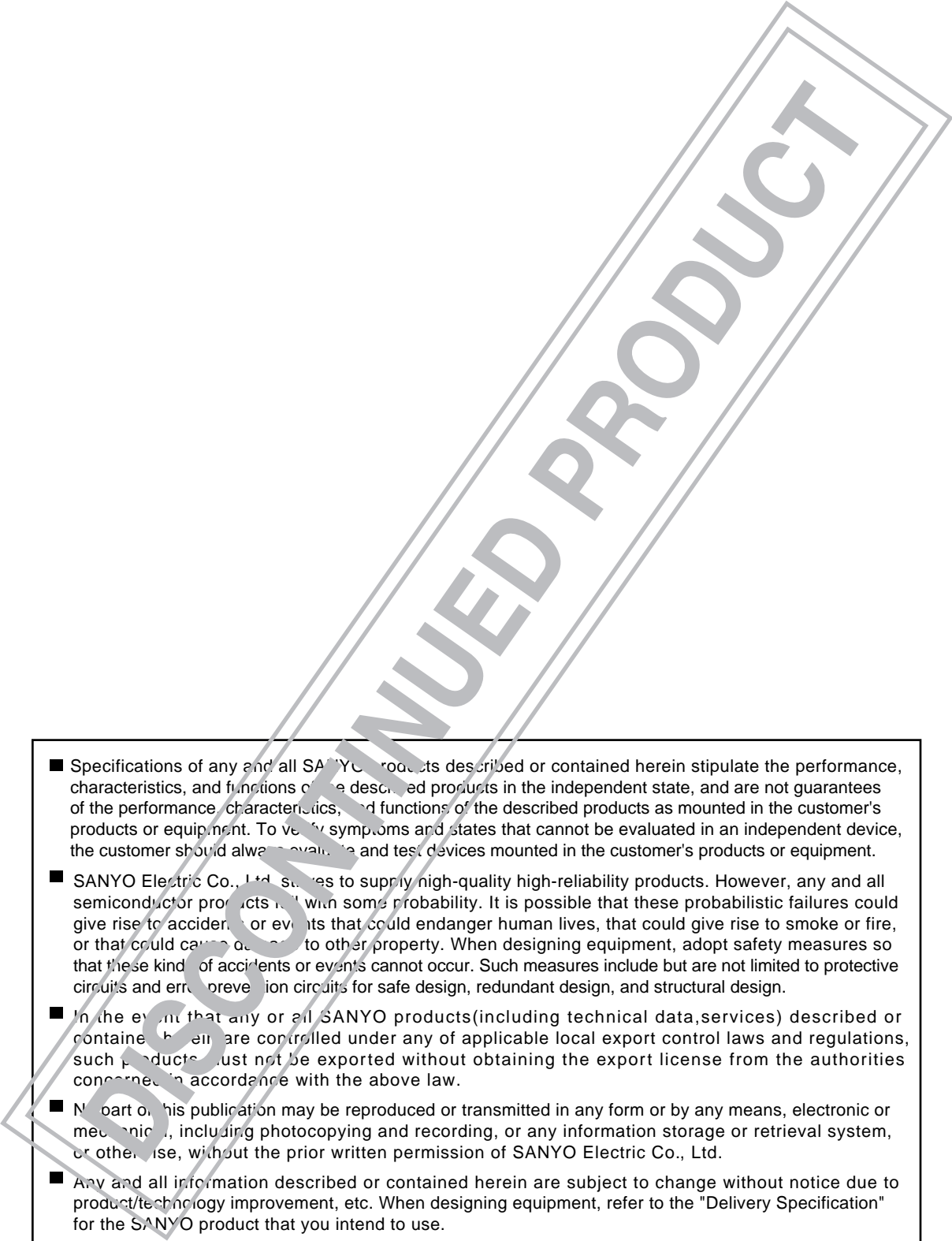
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=10V, f=1MHz$		1300		pF
Output Capacitance	Coss	$V_{DS}=10V, f=1MHz$		950		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=10V, f=1MHz$		400		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		30		ns
Rise Time	$t_r$	See specified Test Circuit		190		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		190		ns
Fall Time	$t_f$	See specified Test Circuit		180		ns
Diode Forward Voltage	$V_{SD}$	$I_S=7A, V_{GS}=0$		1.0	1.2	V

## Switching Time Test Circuit



# 2SK2441



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