



Ultrahigh-Speed Switching Applications

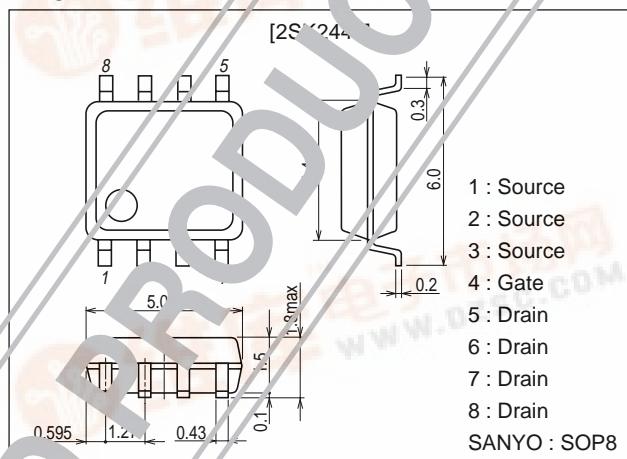
Features

- 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}		± 10	V
Drain Current (DC)	I_D		6	A
Drain Current (Pulse)	I_{DP}	$T_{PW} \leq 10\mu s, \text{ Duty cycle} \leq 1\%$	48	A
Allowable Power Dissipation	P_D	Measured on ceramic board (1200mm ² ×0.8mm)	2.0	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°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	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8\text{V}$, $V_{DS}=0$			± 10	μA
Cutoff Voltage	$V_{GS(\text{off})}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	0.4		1.4	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10\text{V}$, $I_D=6\text{A}$	10	14		S
Static Drain-to-Source ON-State Resistance	$R_{DS(\text{on})1}$	$I_D=6\text{A}$, $V_{GS}=4\text{V}$	30	38		$\text{m}\Omega$
	$R_{DS(\text{on})2}$	$I_D=2\text{A}$, $V_{GS}=2.5\text{V}$	40	58		$\text{m}\Omega$

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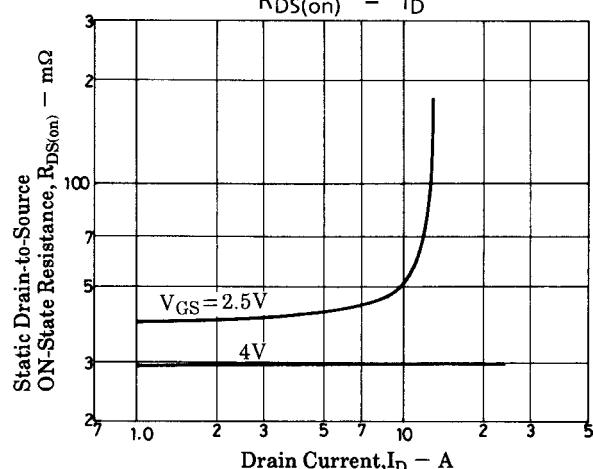
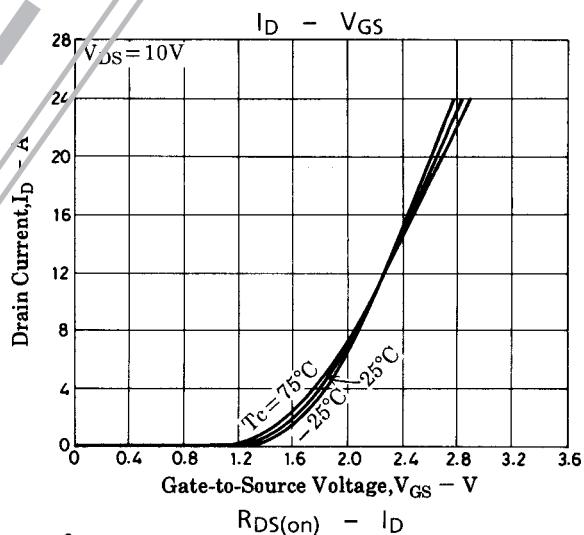
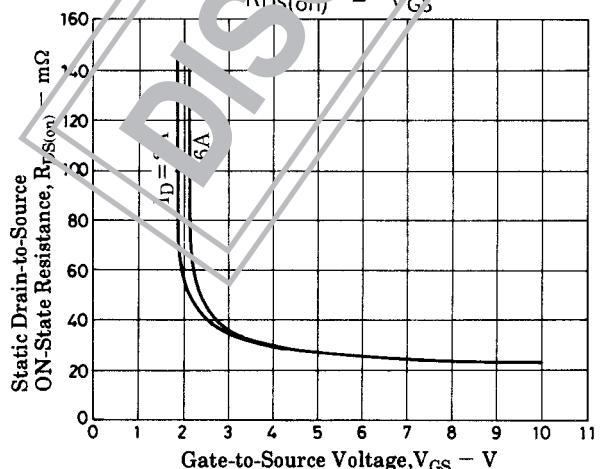
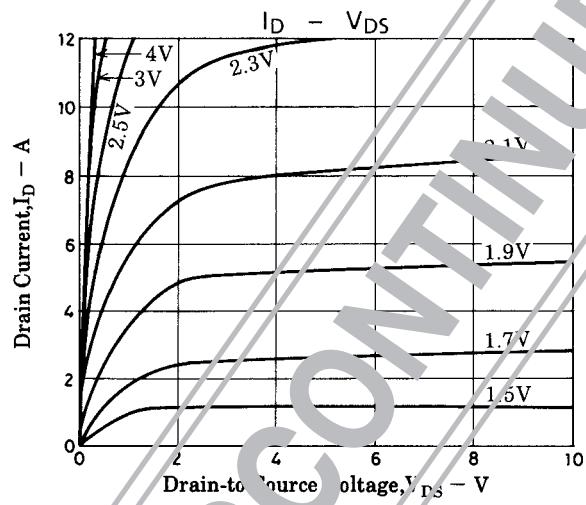
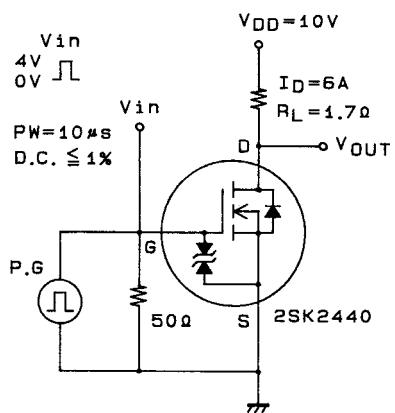
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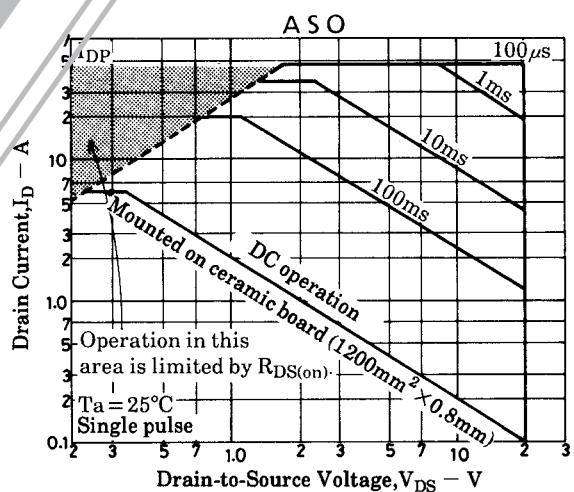
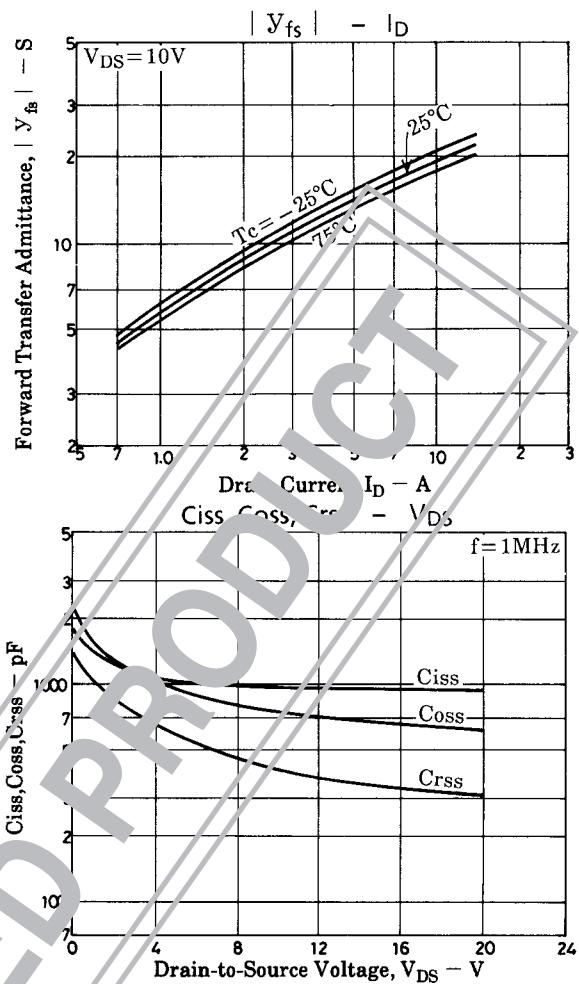
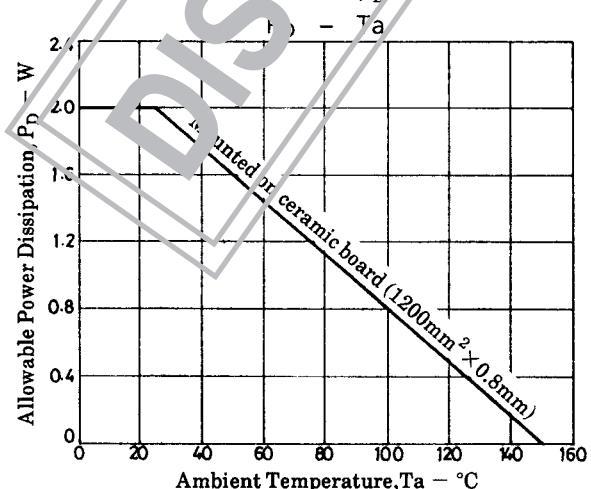
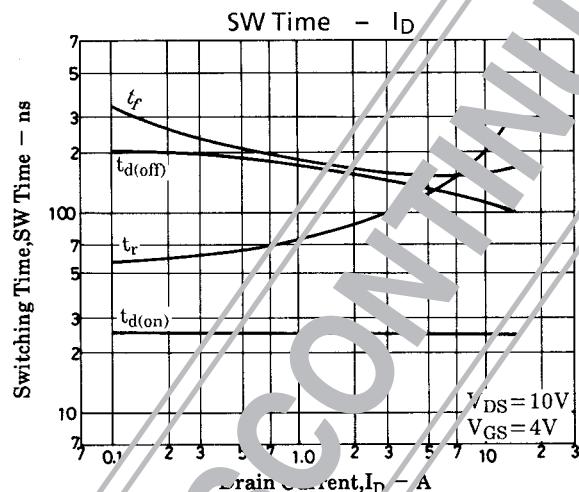
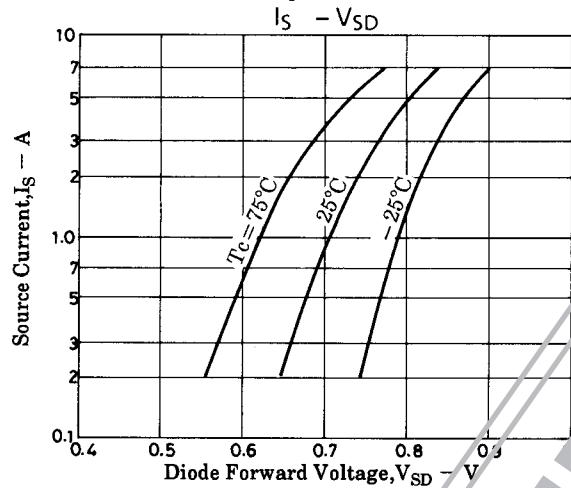
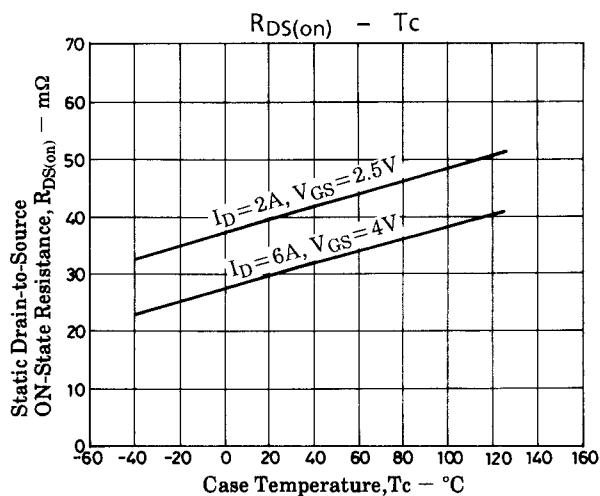
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		1000		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		750		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		400		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		25		ns
Rise Time	t_r	See specified Test Circuit		135		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		135		ns
Fall Time	t_f	See specified Test Circuit		150		ns
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0$	1.0	1.2	1.4	V

Switching Time Test Circuit



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