

**2SK2406**

Ultrahigh-Speed Switching, Motor Driver Applications

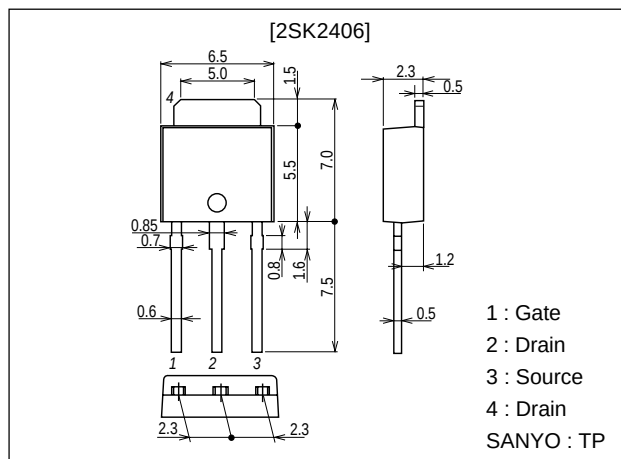
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- High-speed diode.

Package Dimensions

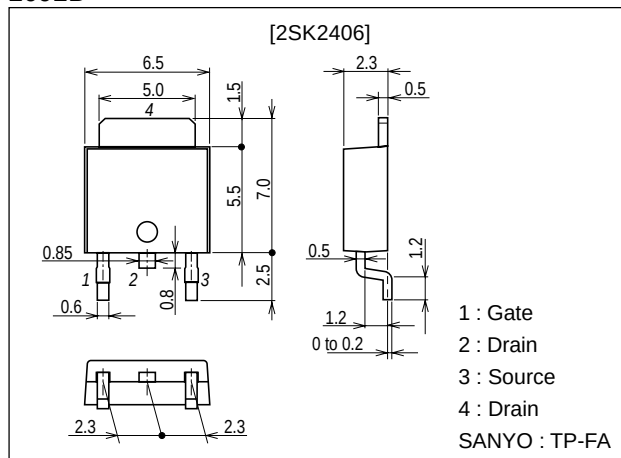
unit:mm

2083B



unit:mm

2092B



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Specifications

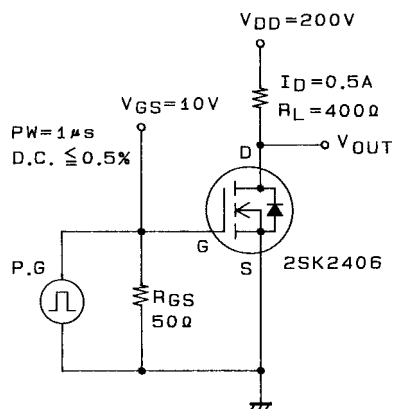
Absolute Maximum Ratings at Ta = 25°C

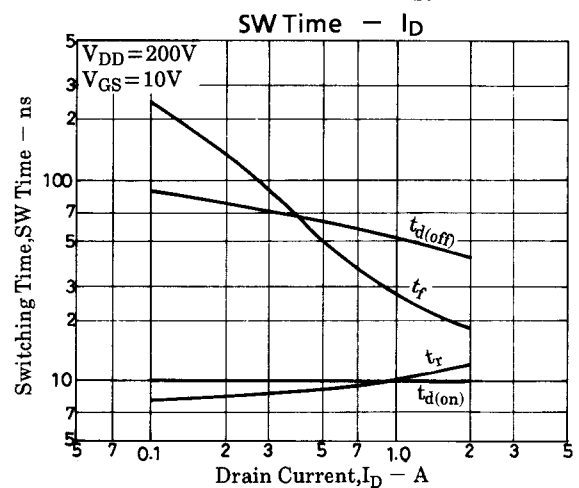
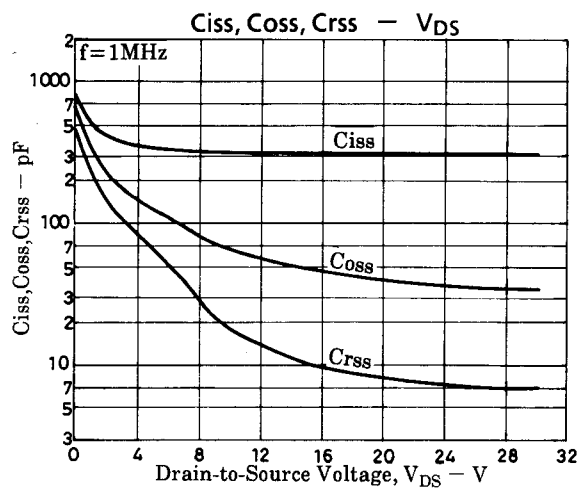
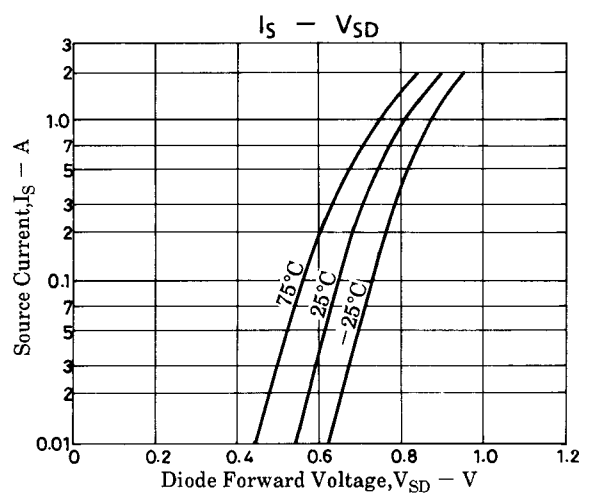
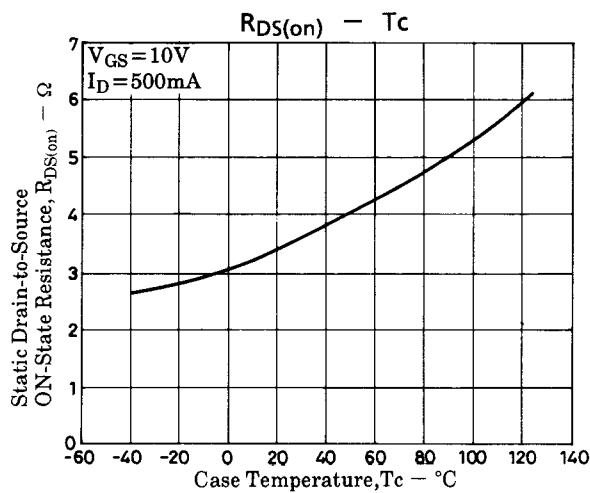
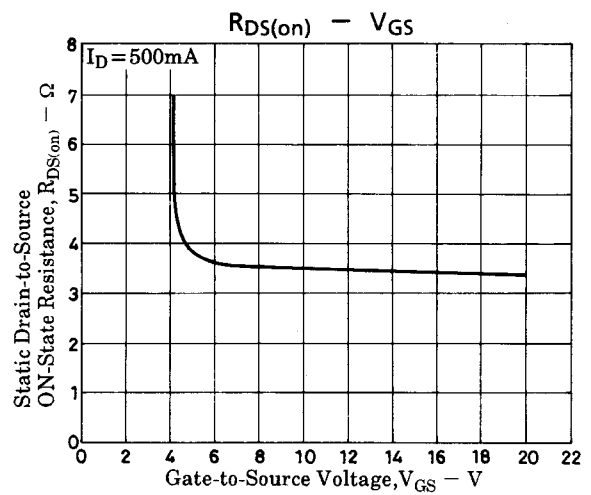
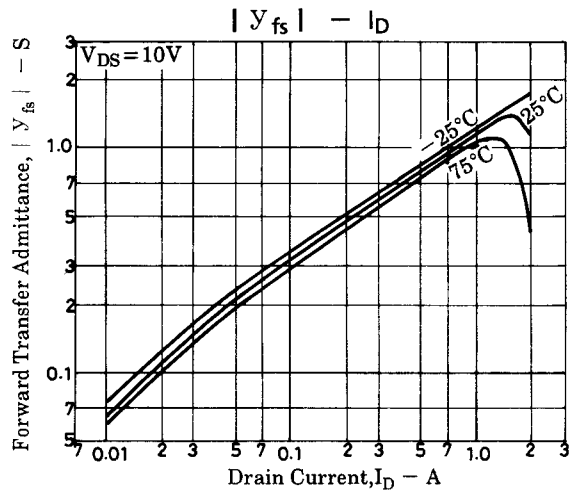
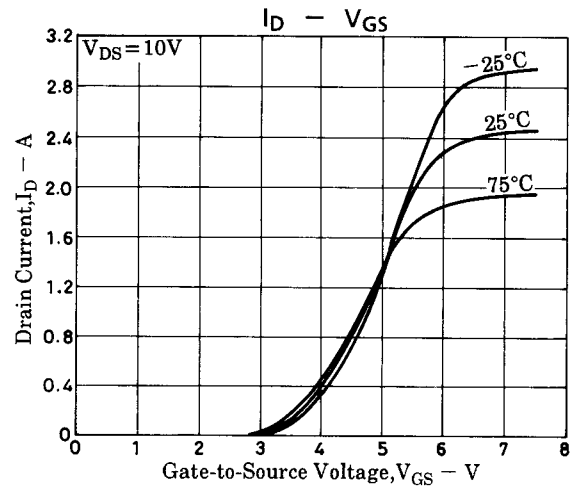
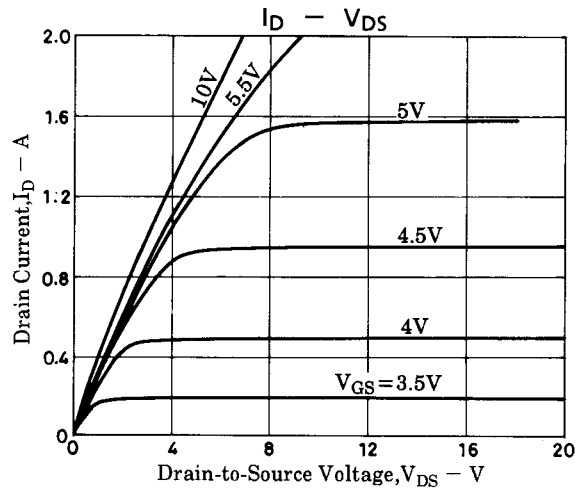
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		450	V
Gate-to-Source Voltage	V_{GS}		±30	V
Drain Current (DC)	I_D		1	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	4	A
Allowable Power Dissipation	P_D		1	W
		$T_c = 25^\circ C$	30	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

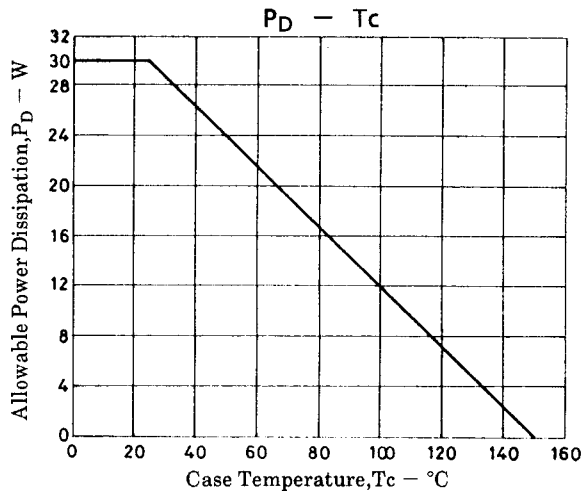
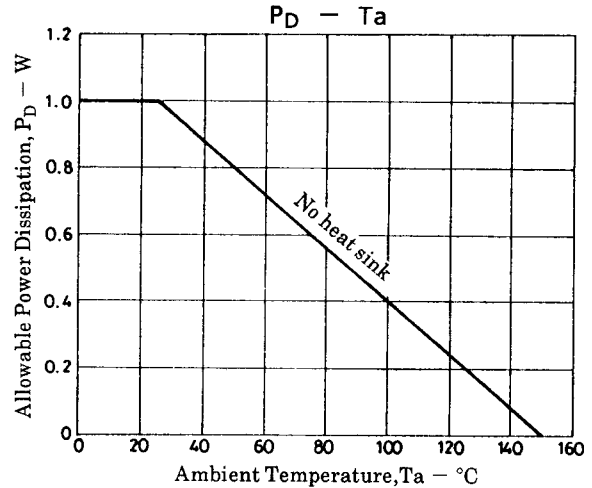
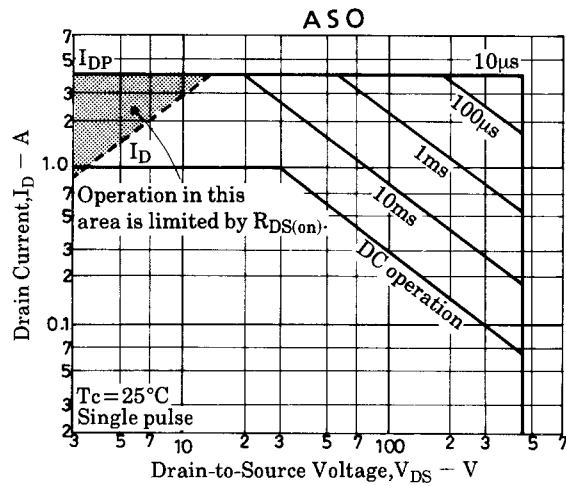
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA$, $V_{GS} = 0$	450			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 450V$, $V_{GS} = 0$			1	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} $	$V_{DS} = 10V$, $I_D = 0.5A$	0.4	0.8		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 0.5A$, $V_{GS} = 10V$		3.5	4.5	Ω
Input Capacitance	C_{iss}	$V_{DS} = 20V$, $f = 1MHz$		300		pF
Output Capacitance	C_{oss}	$V_{DS} = 20V$, $f = 1MHz$		40		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20V$, $f = 1MHz$		8		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		10		ns
Rise Time	t_r	See specified Test Circuit		9		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		60		ns
Fall Time	t_f	See specified Test Circuit		50		ns
Diode Forward Voltage	V_{SD}	$I_S = 1A$, $V_{GS} = 0$		0.8	1.2	V
Diode Reverse Time	t_{rr}	$I_S = 1A$, $di/dt = 100A/\mu s$		80	120	ns

Switching Time Test Circuit







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