



2SK1907

Ultrahigh-Speed Switching Applications

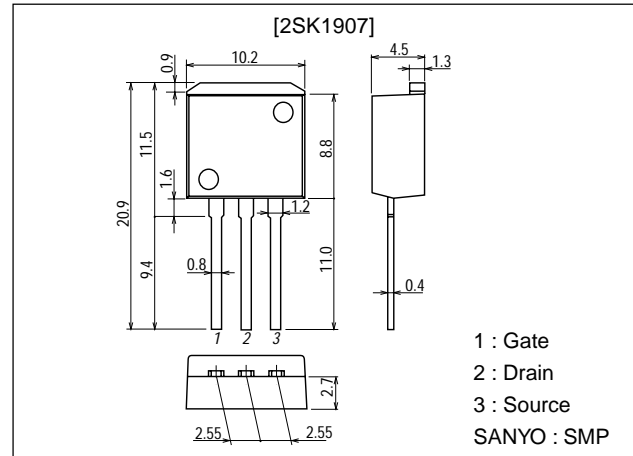
Features

- Low ON resistance.
- Ultrahigh-speed switching.
- Low-voltage drive.
- Surface mount type device making the following possible.
- Reduction in the number of manufacturing processes for 2SK1907-applied equipment.
- High density surface mount applications.
- Small size of 2SK1907-applied equipment.

Package Dimensions

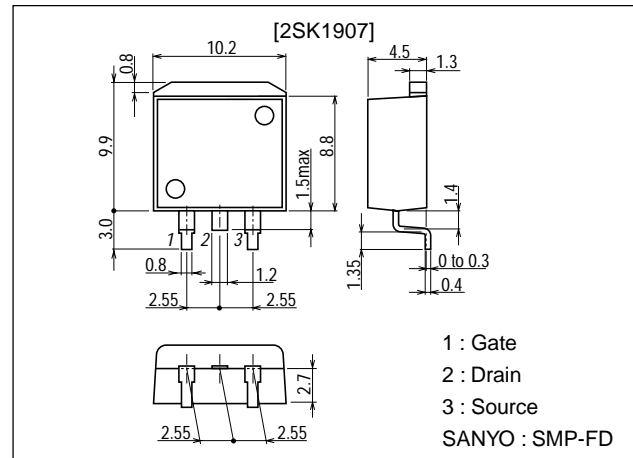
unit:mm

2093A



unit:mm

2090A



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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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Specifications

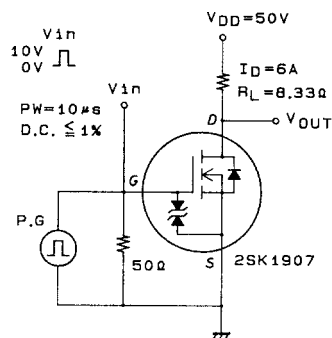
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

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		12	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	P_D		1.65	W
		$T_c = 25^\circ\text{C}$	50	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

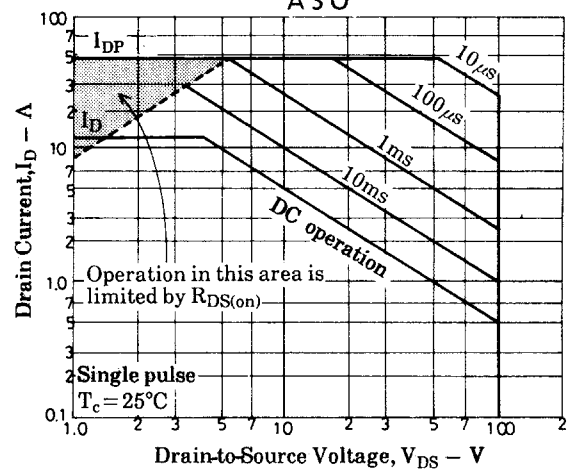
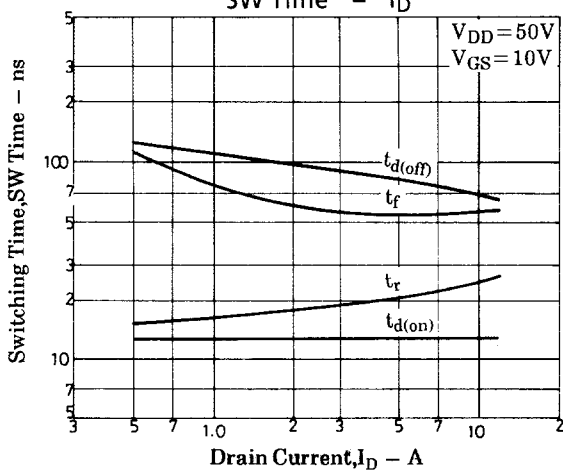
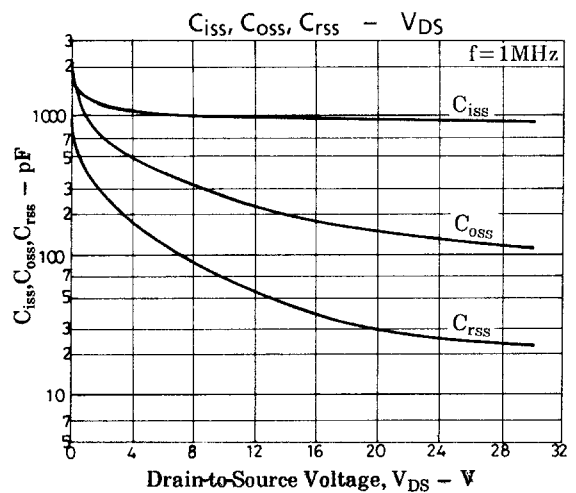
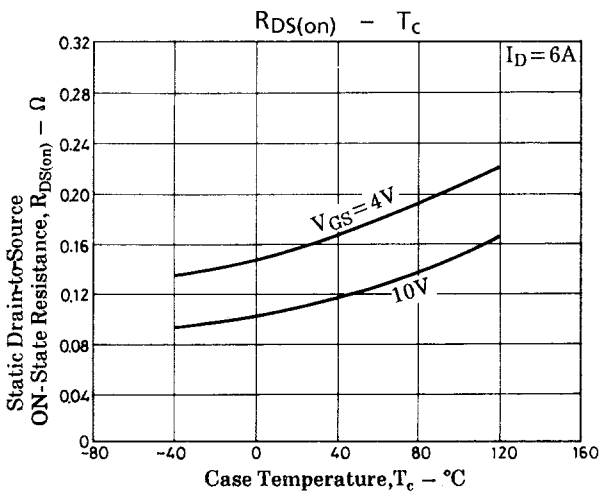
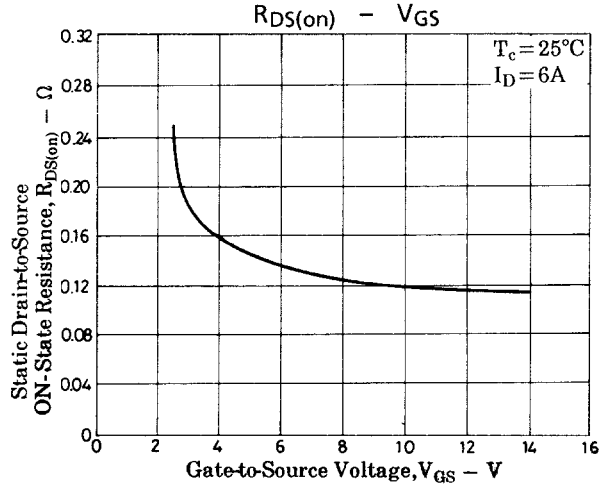
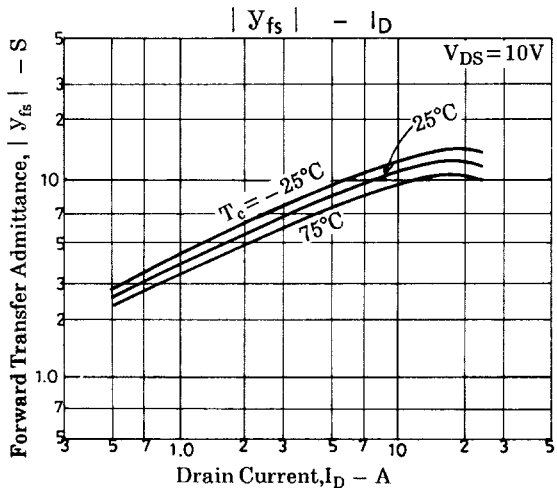
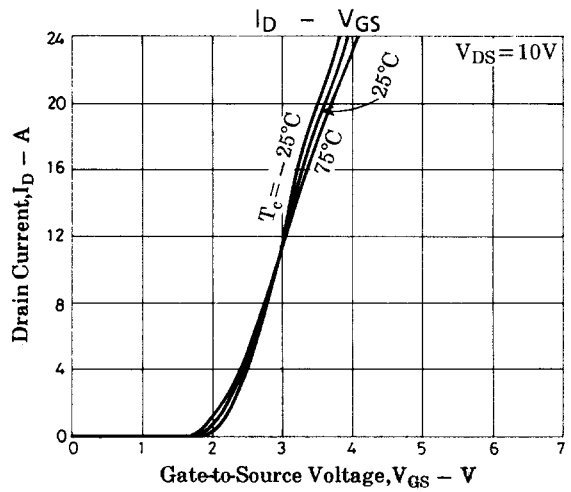
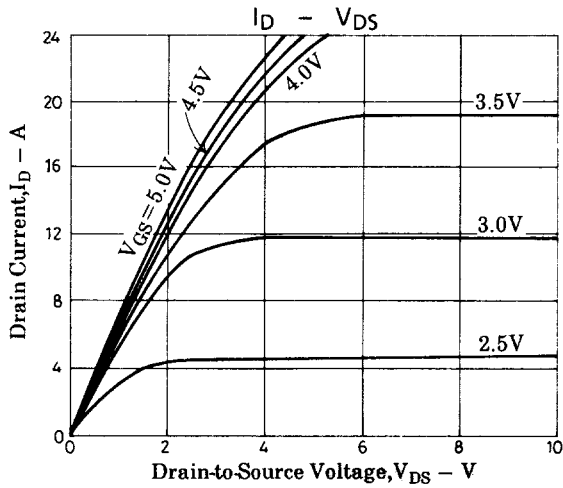
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0$	100			V
Gate-to-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu\text{A}$, $V_{DS} = 0$	± 15			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100\text{V}$, $V_{GS} = 0$			100	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 12\text{V}$, $V_{DS} = 0$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$	1.0		2.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}$, $I_D = 6\text{A}$	6	9.5		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	$I_D = 6\text{A}$, $V_{GS} = 10\text{V}$		0.12	0.16	Ω
	$R_{DS(on)}$	$I_D = 6\text{A}$, $V_{GS} = 4\text{V}$		0.16	0.22	Ω
Input Capacitance	C_{iss}	$V_{DS} = 20\text{V}$, $f = 1\text{MHz}$		950		pF
Output Capacitance	C_{oss}	$V_{DS} = 20\text{V}$, $f = 1\text{MHz}$		150		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20\text{V}$, $f = 1\text{MHz}$		30		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		13		ns
Rise Time	t_r	See specified Test Circuit		22		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		80		ns
Fall Time	t_f	See specified Test Circuit		55		ns
Diode Forward Voltage	V_{SD}	$I_S = 12\text{A}$, $V_{GS} = 0$		1.0	1.5	V

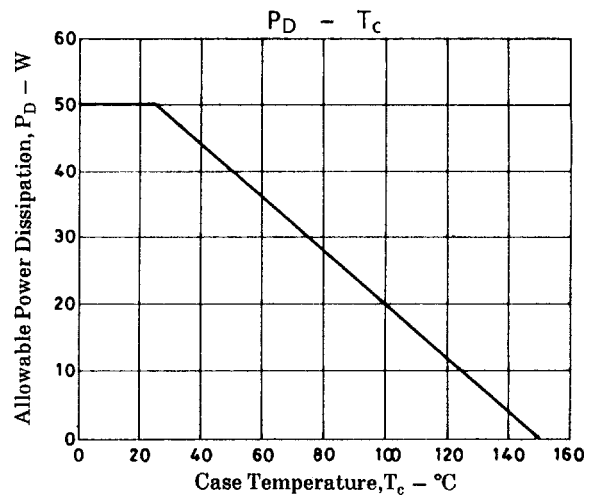
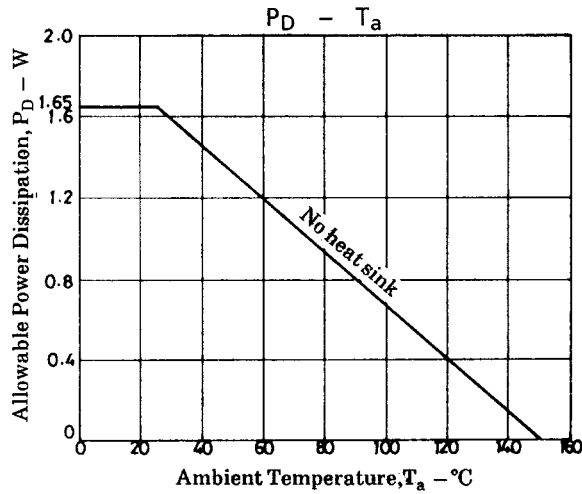
Switching Time Test Circuit



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