

SANYO	No.4227	2SK1909
		N-Channel MOS Silicon FET Very High-Speed Switching Applications

Features

- Low ON resistance.
- Very high-speed switching.
- Low-voltage drive.
- Surface mount type device making the following possible.
 - Reduction in the number of manufacturing processes for 2SK1909-applied equipment.
 - High density surface mount applications.
 - Small size of 2SK1909-applied equipment.

Absolute Maximum Ratings at Ta = 25°C

Drain to Source Voltage	V_{DSS}		100	V	
Gate to Source Voltage	V_{GSS}		±15	V	
Drain Current(DC)	I_D		25	A	
Drain Current(Pulse)	I_{DP}	$PW \leq 10\mu s, \text{ duty cycle} \leq 1\%$	100	A	
Allowable Power Dissipation	P_D		1.65	W	
		$T_c = 25^\circ C$	70	W	
Channel Temperature	T_{ch}		150	°C	
Storage Temperature	T_{stg}		-55 to +150	°C	

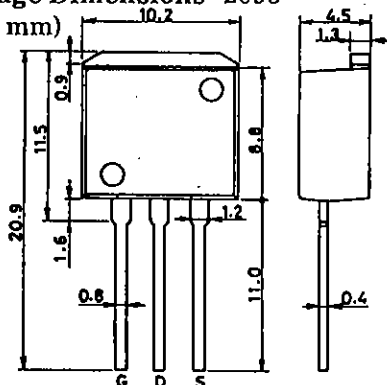
Electrical Characteristics at Ta = 25°C

			min	typ	max	
D-S Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA, V_{GS} = 0$	100			V
G-S Breakdown Voltage	$V_{(BR)GSS}$	$I_G = \pm 100\mu A, V_{DS} = 0$	±15			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} $	$V_{DS} = 10V, I_D = 12A$	15	24.5		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	$I_D = 12A, V_{GS} = 10V$		60	80	mΩ
	$R_{DS(on)}$	$I_D = 12A, V_{GS} = 4V$		80	110	mΩ

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Package Dimensions 2093

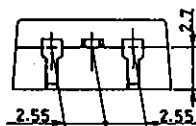
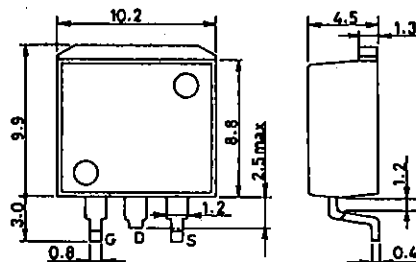
(unit : mm)



G : Gate
D : Drain
S : Source
SANYO : SMP

Package Dimensions 2090

(unit : mm)



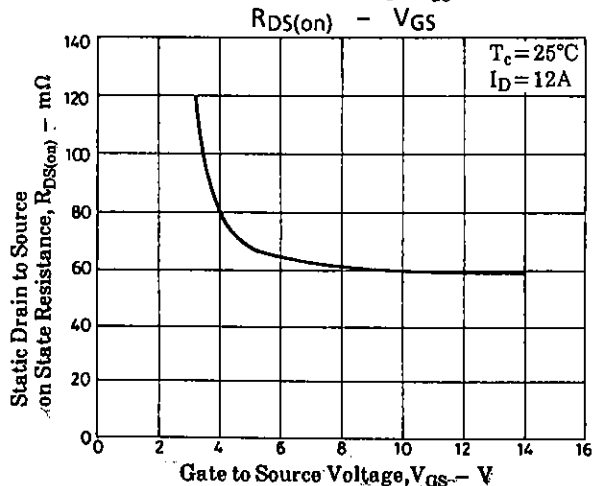
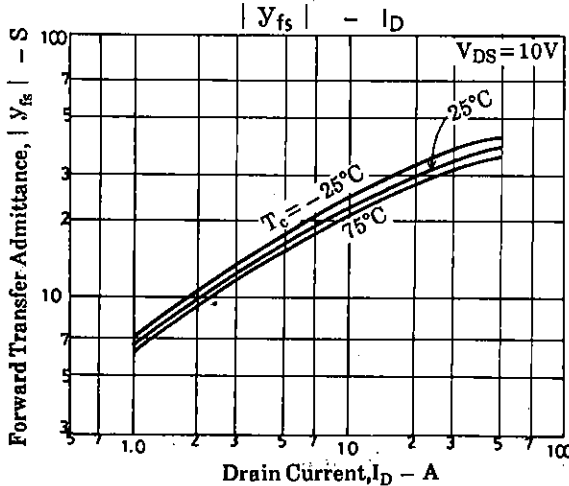
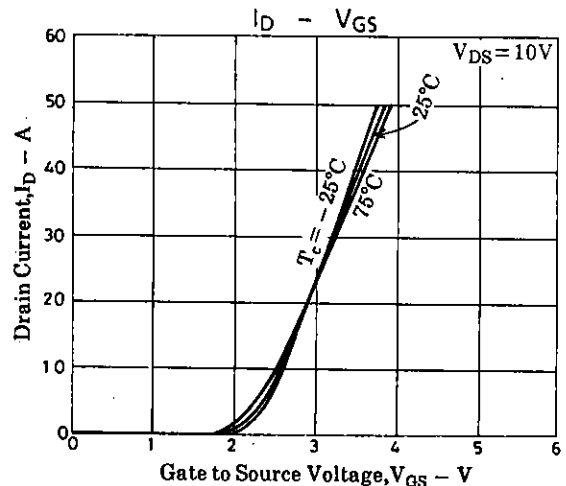
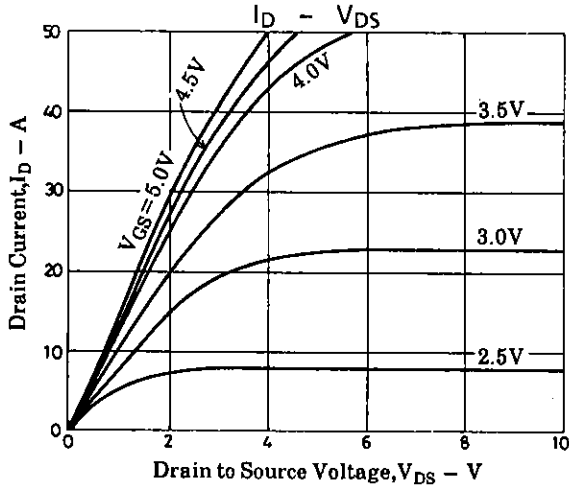
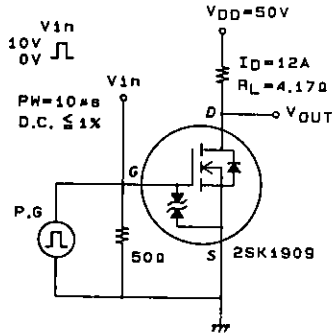
G : Gate
D : Drain
S : Source
SANYO : SMP-FD

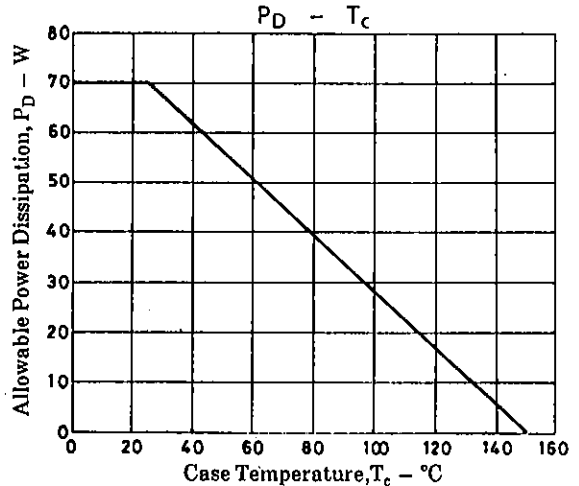
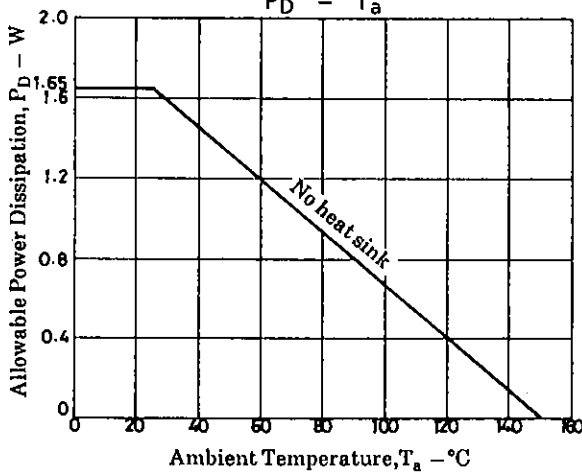
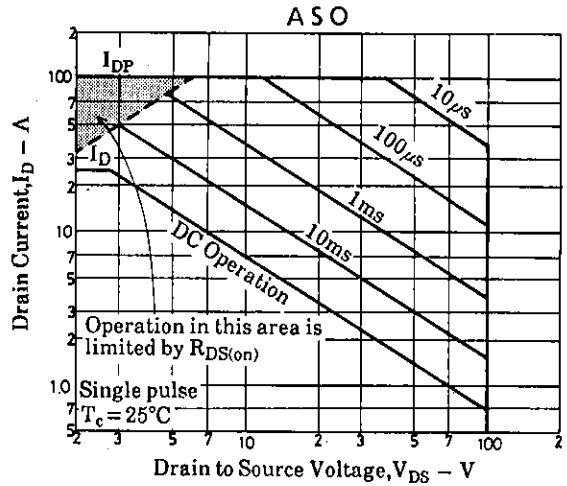
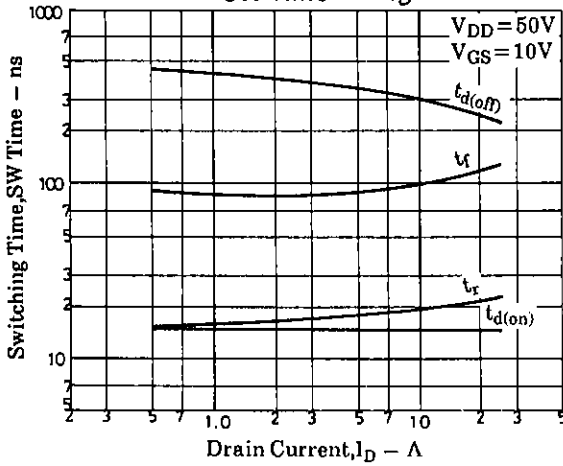
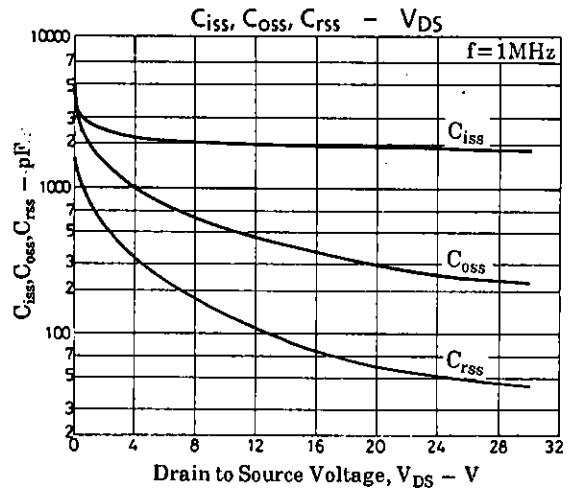
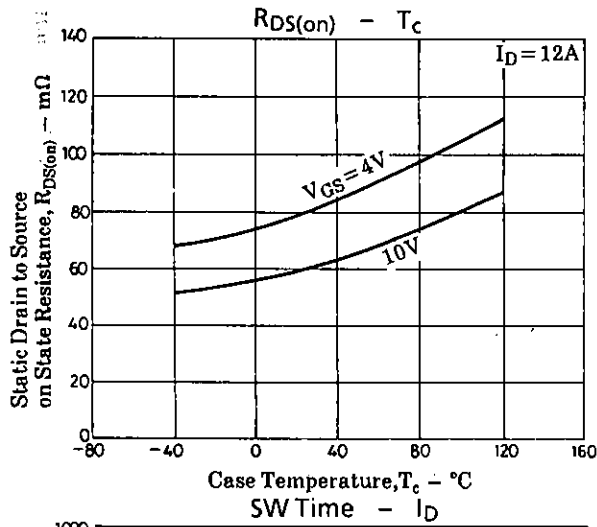
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			min	typ	max	unit
Input Capacitance	C_{iss}	$V_{DS} = 20V, f = 1MHz$		1900		pF
Output Capacitance	C_{oss}	$V_{DS} = 20V, f = 1MHz$		300		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 20V, f = 1MHz$		60		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		15		ns
Rise Time	t_r	"		20		ns
Turn-OFF Delay Time	$t_{d(off)}$	"		290		ns
Fall Time	t_f	"		100		ns
Diode Forward Voltage	V_{SD}	$I_S = 25A, V_{GS} = 0$	1.0	1.5		V

Switching Time Test Circuit





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