Ordering number: EN4223

SANYO

No.4223

2SK1690

N-Channel MOS Silicon FET

Very High-Speed Switching Applications

Features

- Low ON resistance.
- Very high-speed switching.

Absolute Maximum Ratings at Ta = 25°C

				unit
Drain to Source Voltage	V_{DSS}		450	V
Gate to Source Voltage	V_{GSS}		±30	V
Drain Current(DC)	I_D		3	A
Drain Current(Pulse)	I_{DP}		12	A
Allowable Power Dissipation	P_D		1.65	W
		Tc = 25°C	50	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
D-S 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			1.0	mA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = ±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	$\lvert y_{fs} \rvert$	V_{DS} = 10V, I_D = 1.5A	1.1	2.2		S
Static Drain to Source on State Resistance	$R_{DS(on)}$	I_D = 1.5A, V_{GS} = 10V		2.0	2.6	Ω

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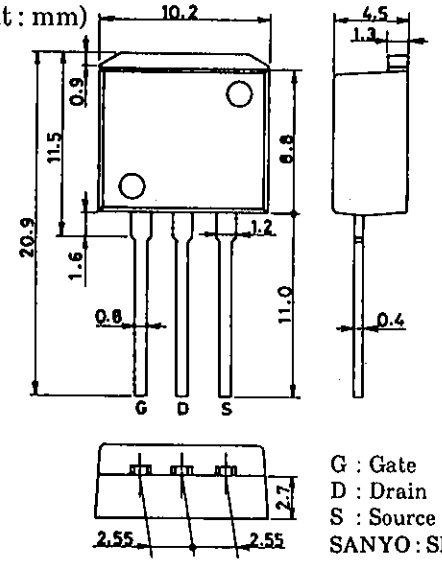
(Note) Be careful in handling the 2SK1690 because it has no protection diode between gate and source.

Package Dimensions 2093

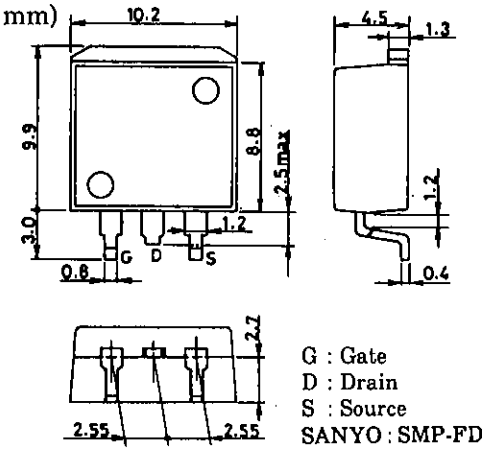
(unit : mm)



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

Package Dimensions 2090

(unit : mm)

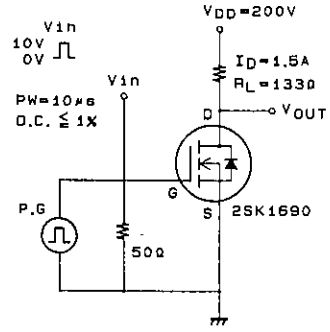


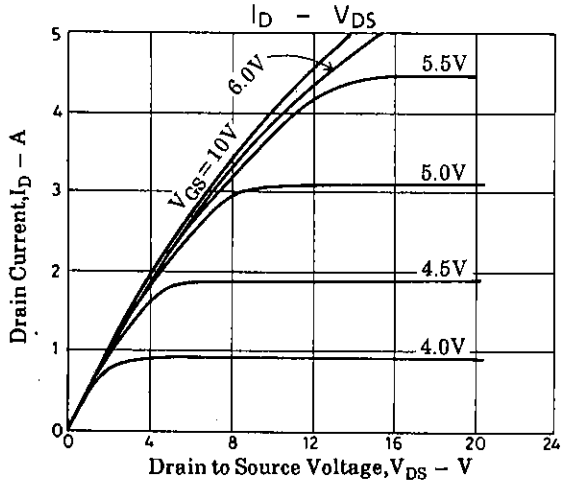
G : Gate
D : Drain
S : Source
SANYO : SMP-FD

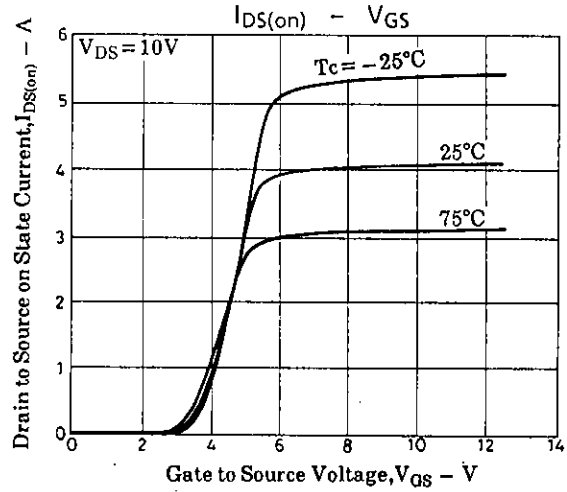
Continued from preceding page.

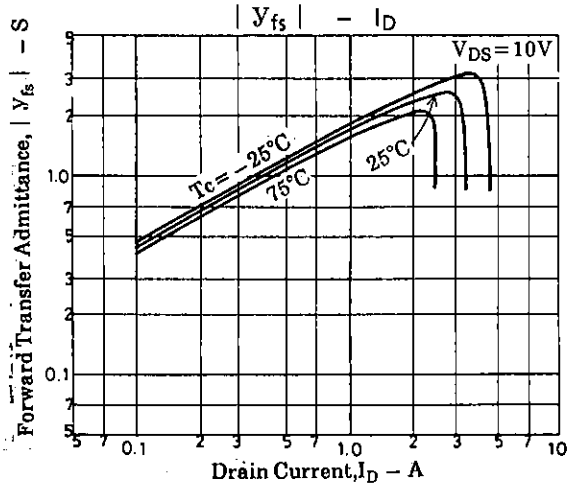
			min	typ	max	unit
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		400		pF
Output Capacitance	Coss	$V_{DS}=20V, f=1MHz$		60		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=20V, f=1MHz$		25		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		12		ns
Rise Time	t_r	〃		20		ns
Turn-OFF Delay Time	$t_{d(off)}$	〃		80		ns
Fall Time	t_f	〃		35		ns
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0$			1.8	V

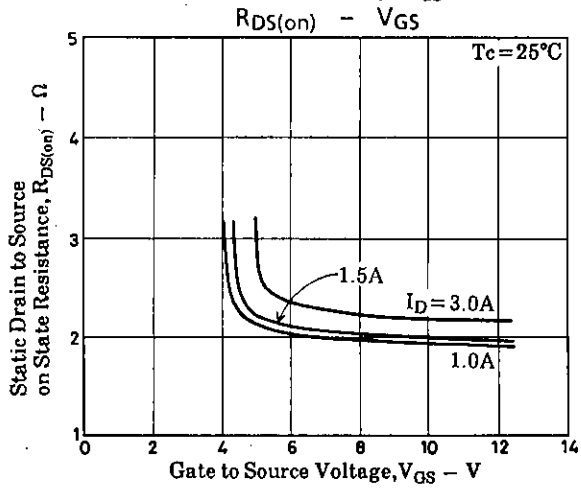
Switching Time Test Circuit



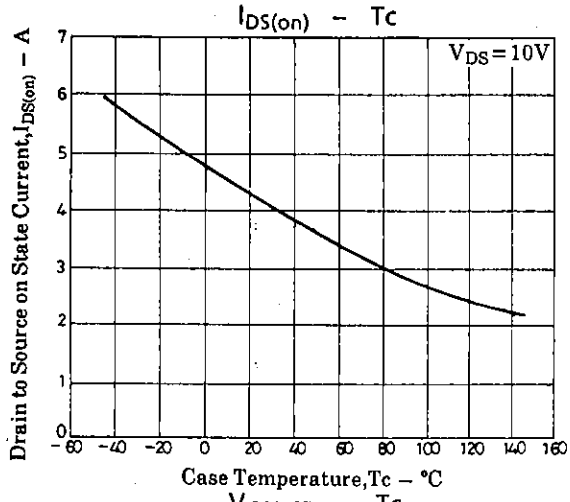




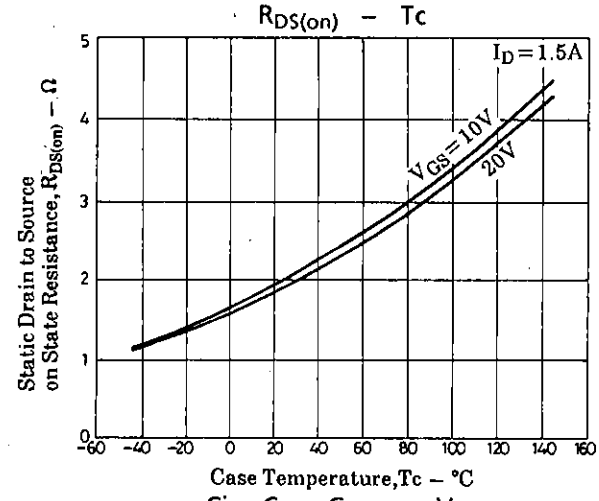




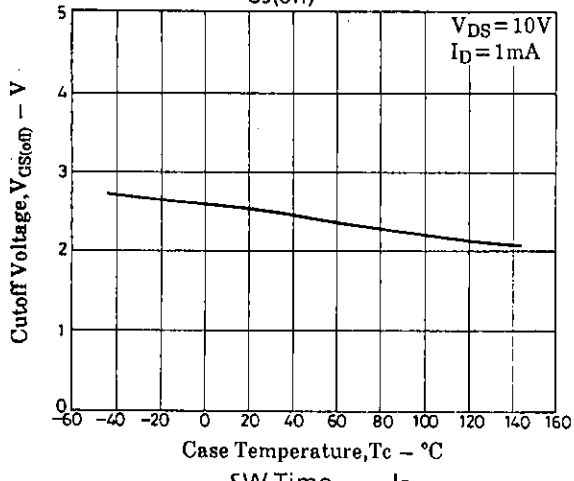
$I_{DS(on)}$ – Tc



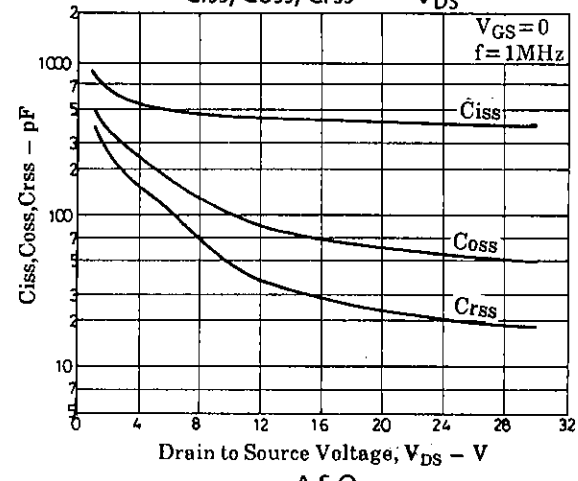
$R_{DS(on)}$ – Tc



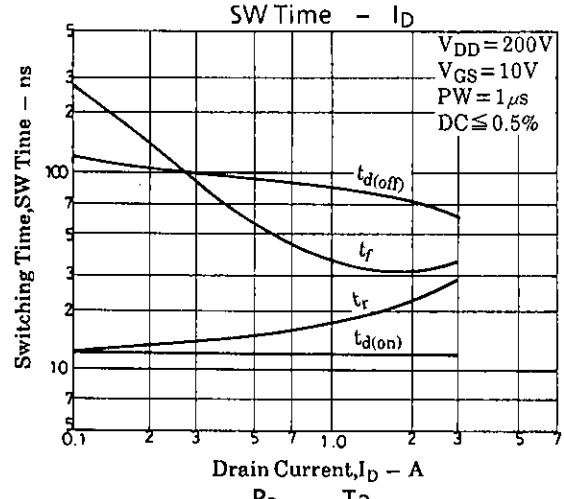
$V_{GS(off)}$ – Tc



Ciss, Coss, Crss – V_{DS}



SW Time – I_D



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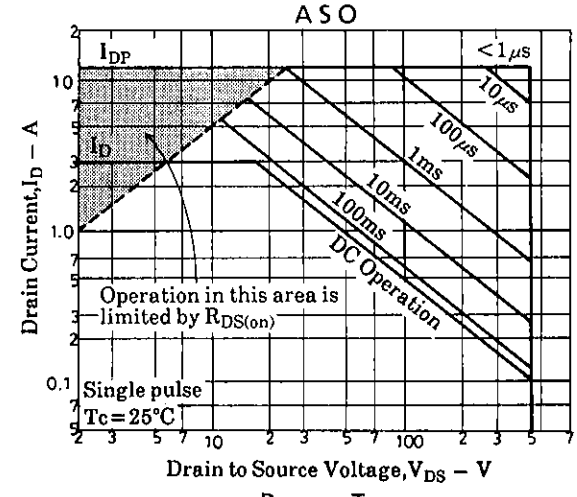
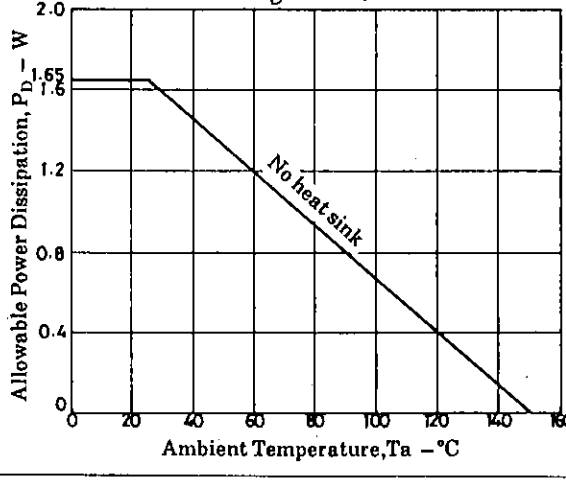


P_D – Ta



P_D – Tc