Ordering number: EN 4645

SANYO

No.4645

2SK1890

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 2SK1890-applied equipment.
  - High-density surface mount applications.
  - Small size of 2SK1890-applied equiment.

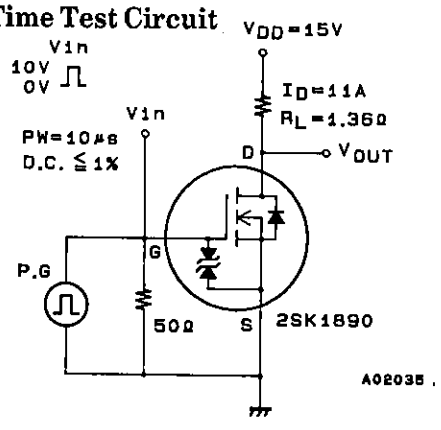
Absolute Maximum Ratings at Ta = 25°C

				unit
Drain-to-Source Voltage	V_{DSS}		30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current(DC)	I_D		22	A
Drain Current(Pulse)	I_{DP}	PW≦10μs, duty cycle≦1%	88	A
Allowable Power Dissipation	P_D		1.65	W
		Tc=25°C	60	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

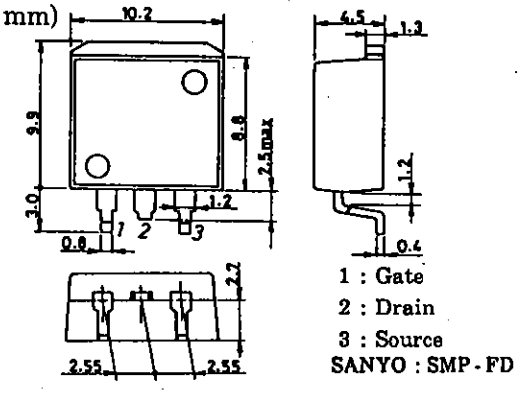
			min	typ	max	unit
D-S Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	30			V
G-S Breakdown Voltage	$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±20			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0			100	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0			±10	μA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	1.0		2.0	V
Forward Transfer Admittance	$\|y_{fs}\|$	V_{DS}=10V, I_D=11A	9	15		S
Static Drain-to-Source ON-State Resistance	$R_{DS(on)}$	I_D=11A, V_{GS}=10V		0.030	0.040	Ω
	$R_{DS(on)}$	I_D=11A, V_{GS}=4V		0.040	0.055	Ω
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		1300		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		720		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		240		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		14		ns
Rise Time	t_r	〃		50		ns
Turn-OFF Delay Time	$t_{d(off)}$	〃		290		ns
Fall Time	t_f	〃		150		ns
Diode Forward Voltage	V_{SD}	I_S=22A, V_{GS}=0		1.0	1.5	V

Switching Time Test Circuit



Package Dimensions 2090A

(unit: mm)



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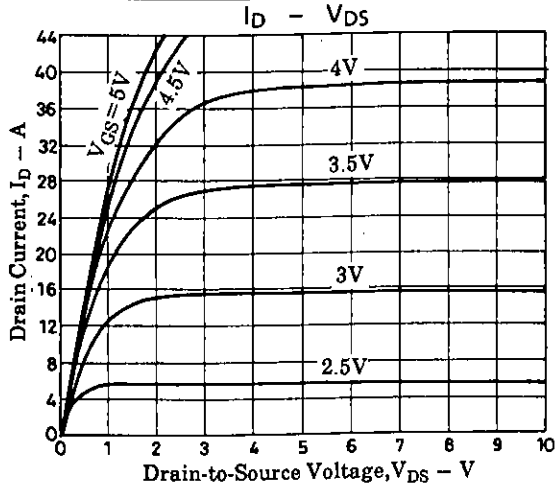
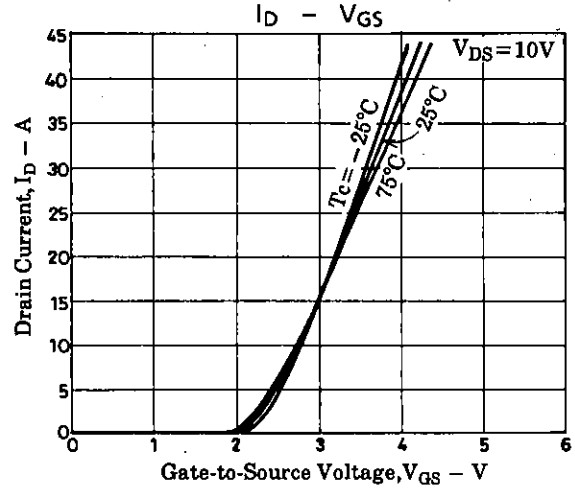
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

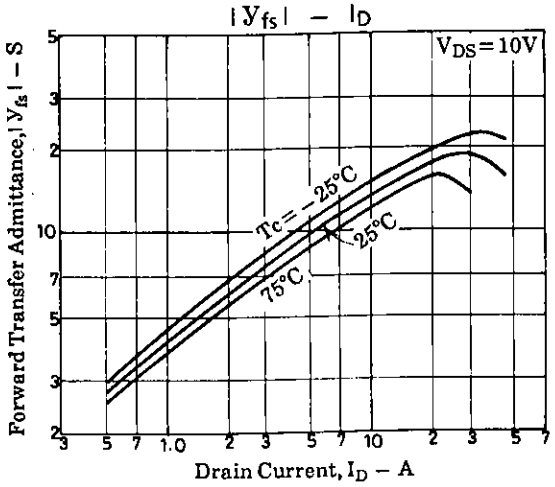
I_D – V_{DS}



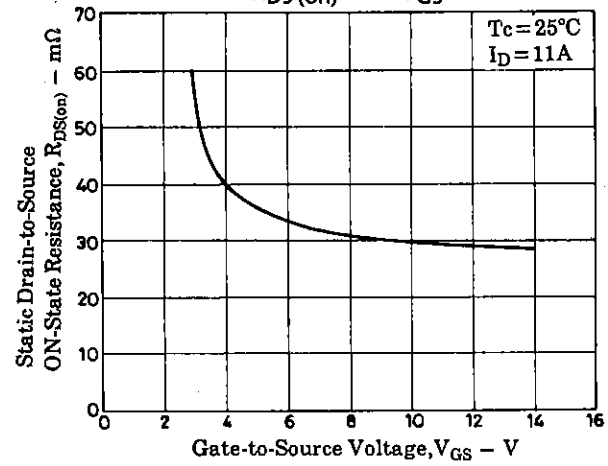
I_D – V_{GS}



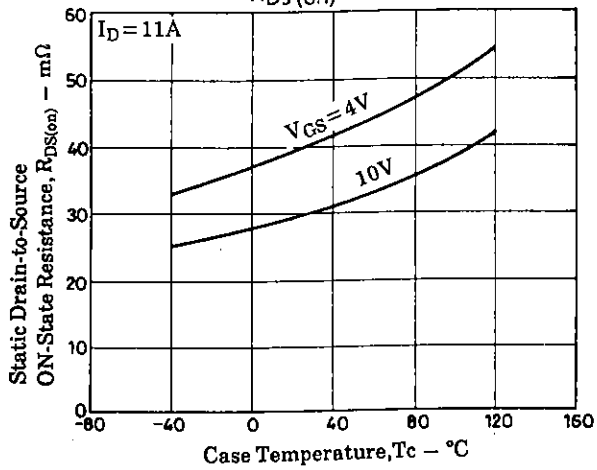
$|Y_{fs}|$ – I_D



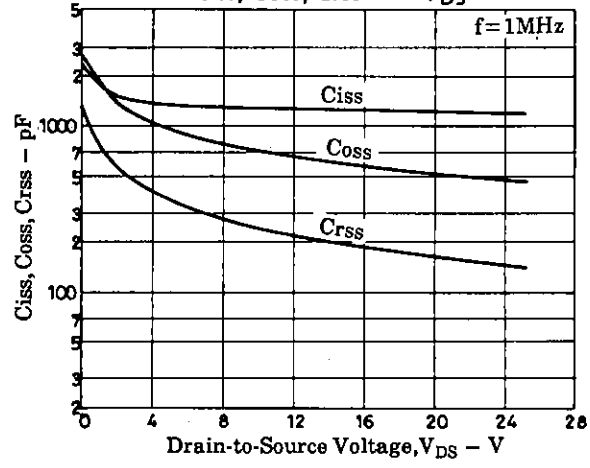
$R_{DS(on)}$ – V_{GS}



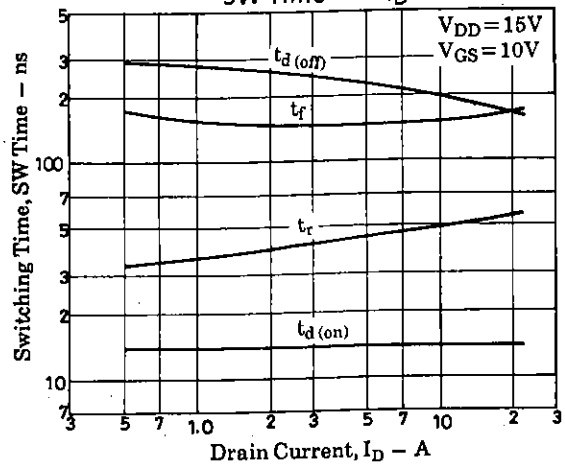
$R_{DS(on)}$ – Tc



Ciss, Coss, Crss – V_{DS}



SW Time – I_D



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