

**2SK1691**

Ultrahigh-Speed Switching Applications

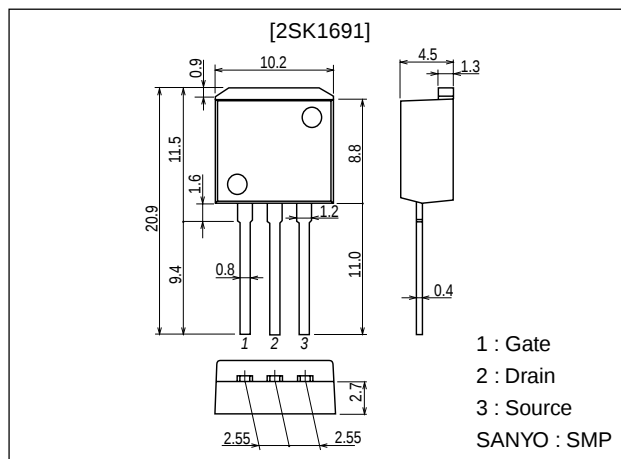
Features

- Low ON resistance.
- Ultrahigh-speed switching.

Package Dimensions

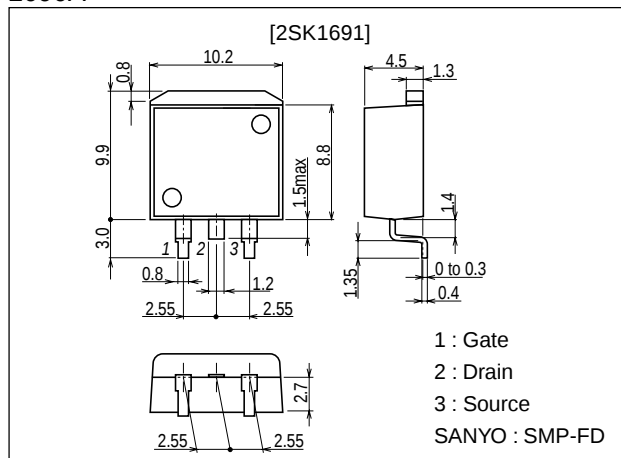
unit:mm

2093A



unit:mm

2090A



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61599TH (KT)/70193TH (KOTO) BX-0293 No.4224-1/4

Specifications

Absolute Maximum Ratings at Ta = 25°C

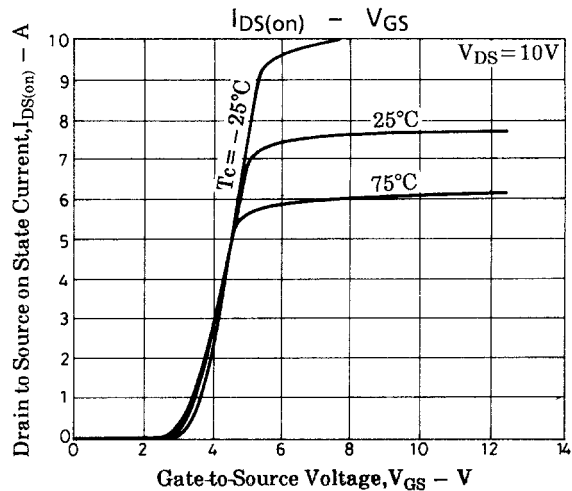
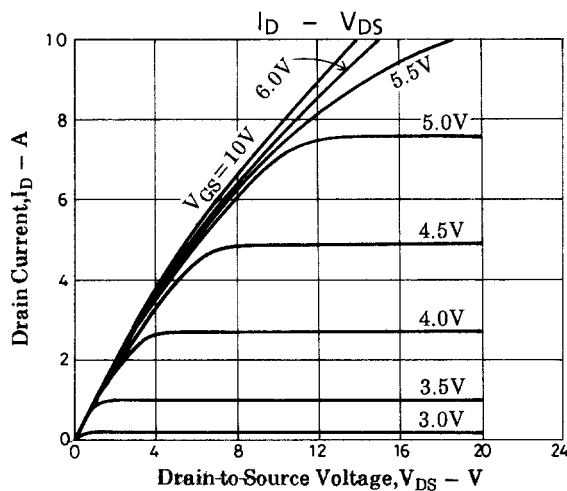
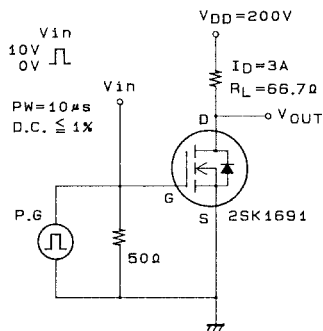
Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		450	V
Gate-to-Source Voltage	V_{GS}		±30	V
Drain Current (DC)	I_D		5	A
Drain Current (pulse)	I_{DP}		20	A
Allowable Power Dissipation	P_D		1.65	W
		Tc=25°C	60	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

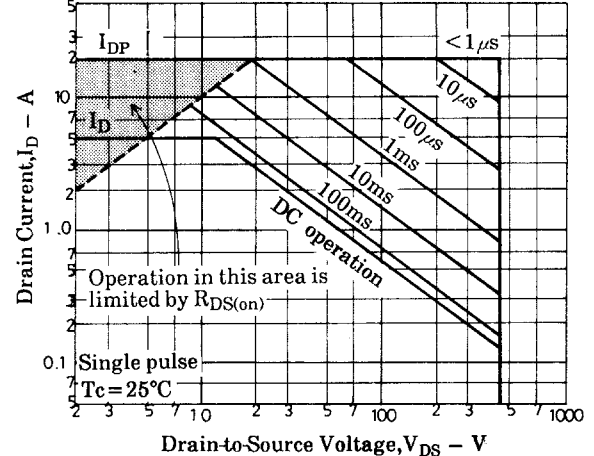
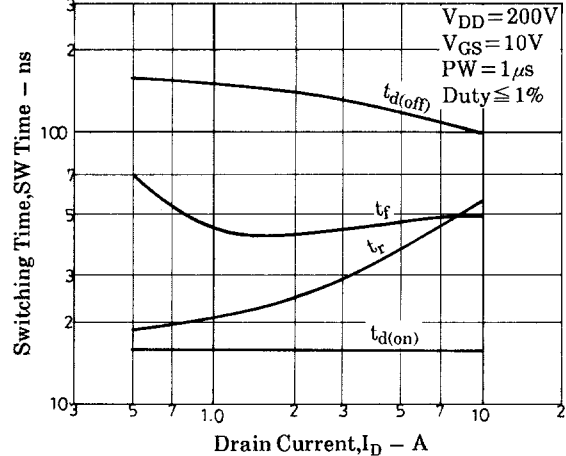
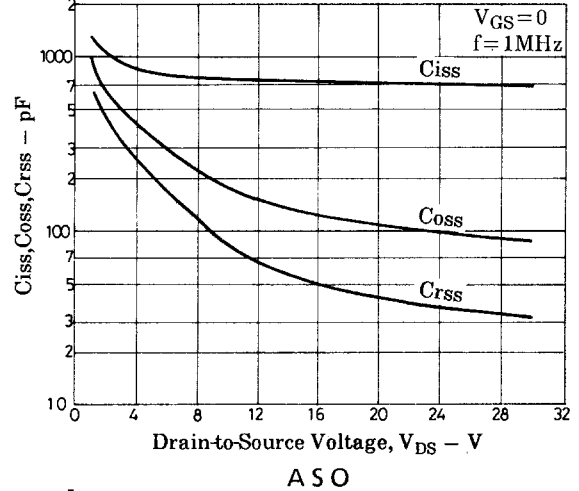
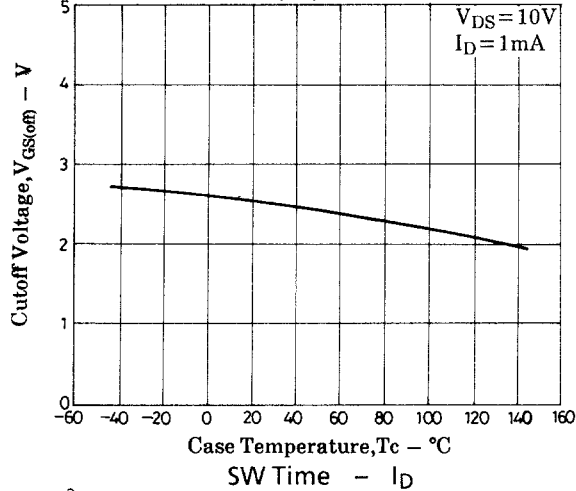
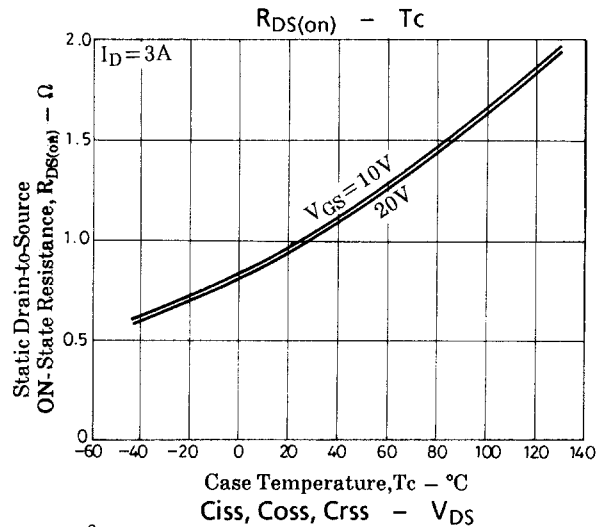
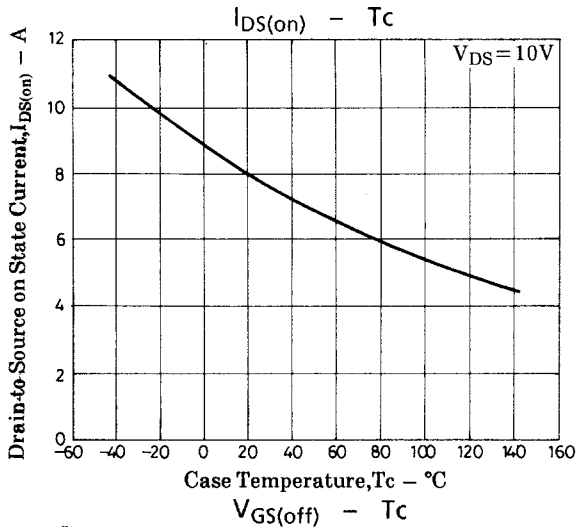
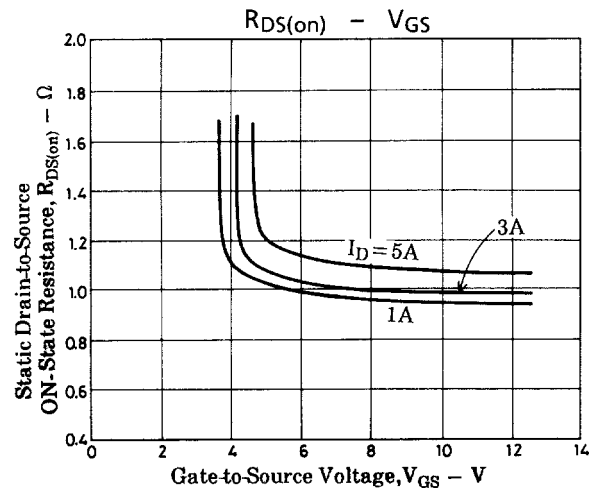
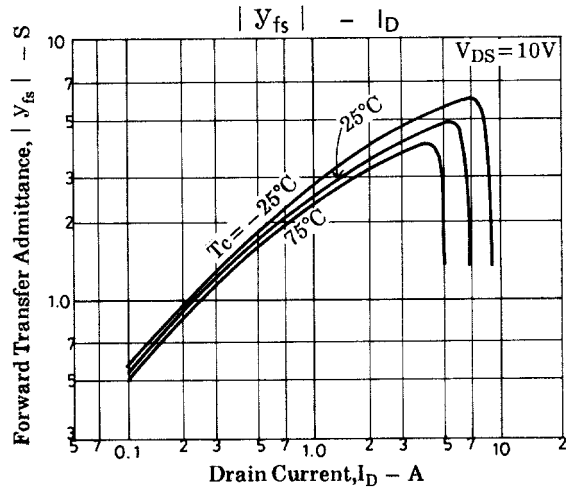
Electrical Characteristics at Ta = 25°C

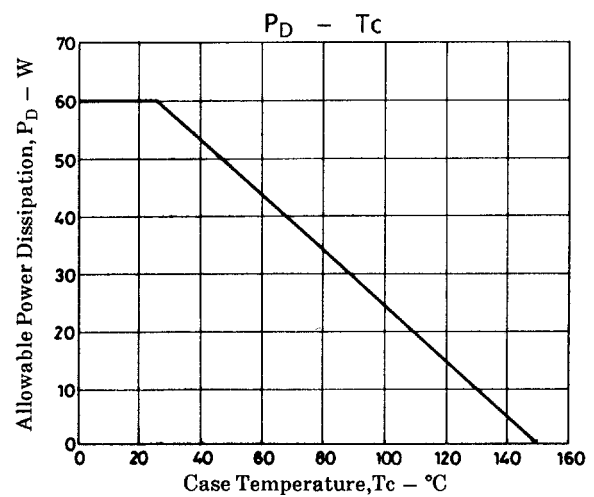
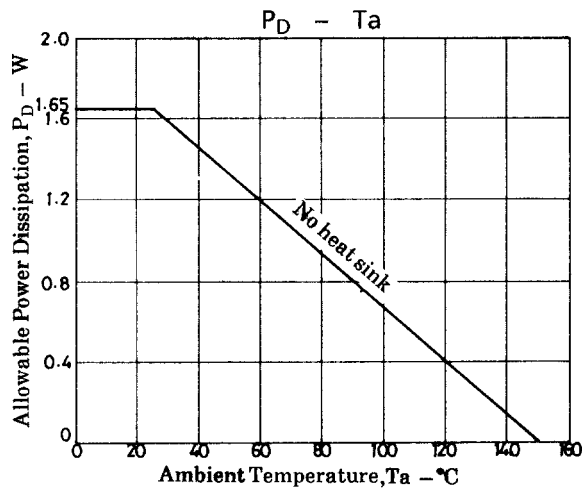
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0$	450			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=450V, V_{GS}=0$			1.0	mA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=±30V, V_{DS}=0$			±100	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	2.0		3.0	V
Forward Transfer Admittance	yfs	$V_{DS}=10V, I_D=3A$	2.0	4.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=3A, V_{GS}=10V$		1.0	1.4	Ω
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		700		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		100		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		40		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		15		ns
Rise Time	t_r	See specified Test Circuit		30		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		130		ns
Fall Time	t_f	See specified Test Circuit		45		ns
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0$			1.8	V

(Note) Be careful in handling the 2SK1691 because it has no protection diode between gate and source.

Switching Time Test Circuit







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