

No.4177

2SK1813

N-Channel MOS Silicon FET

High-Speed
Switching Applications**Features**

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

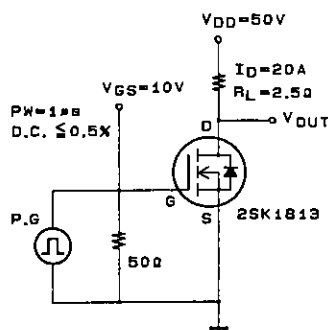
Absolute Maximum Ratings at Ta = 25°C

			unit
Drain to Source Voltage	V _{DSS}	100	V
Gate to Source Voltage	V _{GS}	±20	V
Drain Current(DC)	I _D	30	A
Drain Current(Pulse)	I _{DP}	PW ≤ 10 μs, duty cycle ≤ 1%	120
Allowable Power Dissipation	P _D	Tc = 25°C	1.65
			70
Junction Temperature	T _j		150
Storage Temperature	T _{stg}		-55 to +150

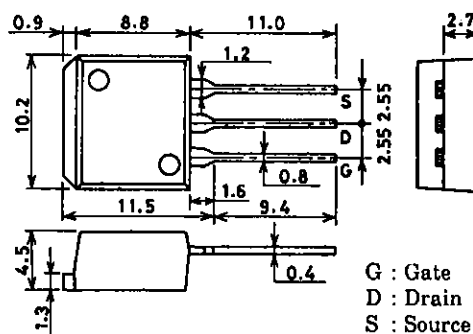
Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
D-S Breakdown Voltage	V _{DSS}	I _D = 1mA, V _{GS} = 0	100			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} = ±20V, V _{DS} = 0			±100	nA
Cutoff Voltage	V _{GS(off)}	V _{DS} = 10V, I _D = 1mA	1.5		2.5	V
Forward Transfer Admittance	Y _{fs}	V _{DS} = 10V, I _D = 20A	13	22		S
Static Drain to Source on State Resistance	R _{DSON}	I _D = 20A, V _{GS} = 10V	0.040	0.055		Ω
Input Capacitance	C _{iss}	V _{DS} = 20V, f = 1MHz		2400		pF
Output Capacitance	C _{oss}	V _{DS} = 20V, f = 1MHz		700		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} = 20V, f = 1MHz		200		pF
Turn-ON Delay Time	t _{d(on)}	I _D = 20A, V _{GS} = 10V V _{DD} = 50V, R _{GS} = 50Ω		30		ns
Rise Time	t _r		90		ns	
Turn-OFF Delay Time	t _{d(off)}		320		ns	
Fall Time	t _f		130		ns	
Diode Forward Voltage	V _{SD}	I _F = 30A, V _{GS} = 0			1.8	V

(Note) Be careful in handling the 2SK1813 because it has no protection diode between gate and source.

Switching Time Test Circuit**Package Dimensions 2089**

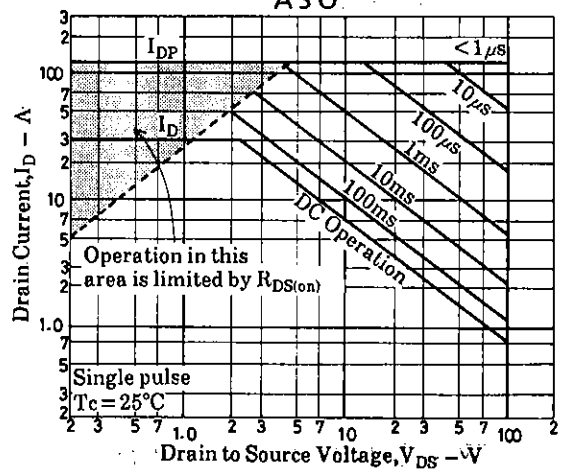
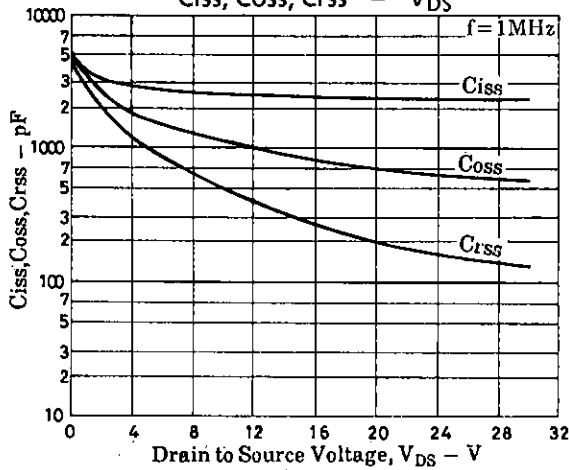
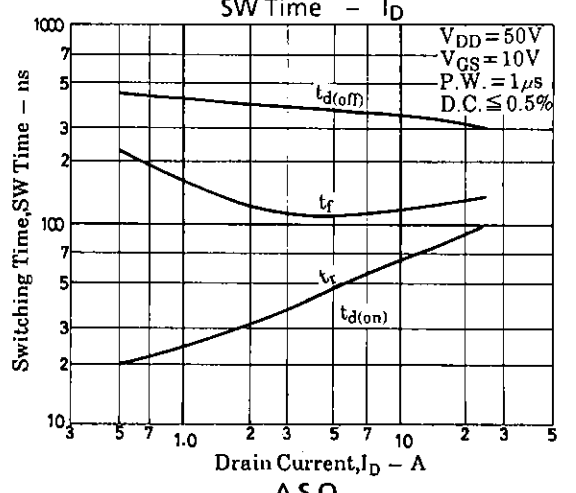
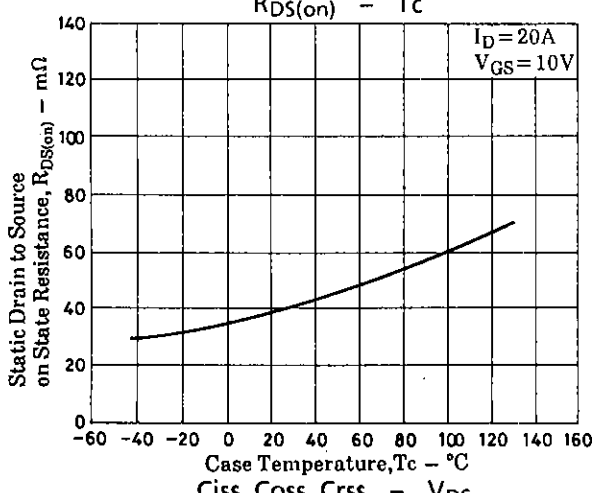
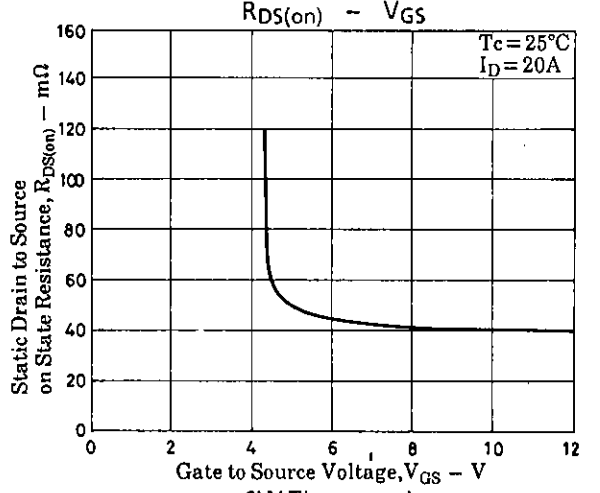
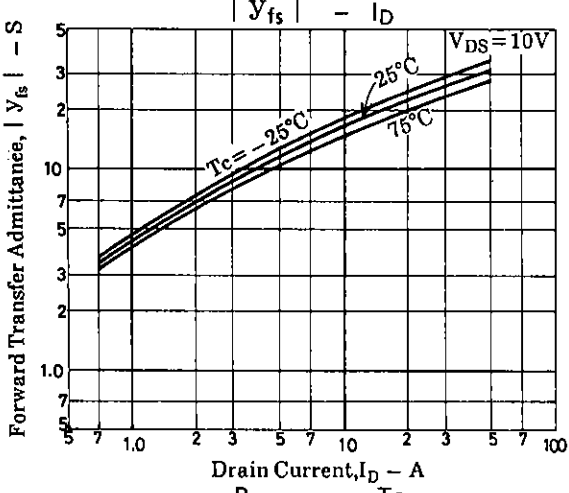
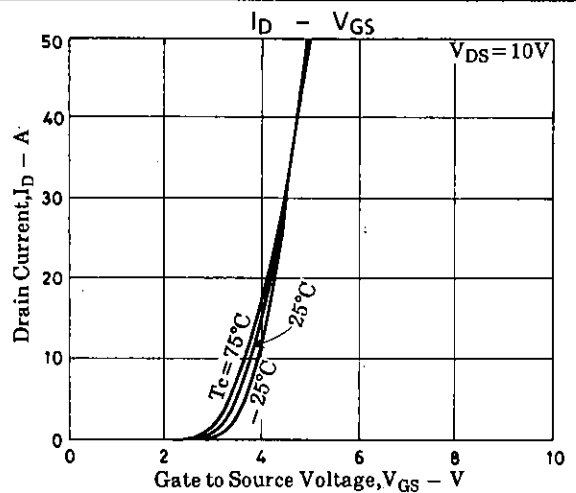
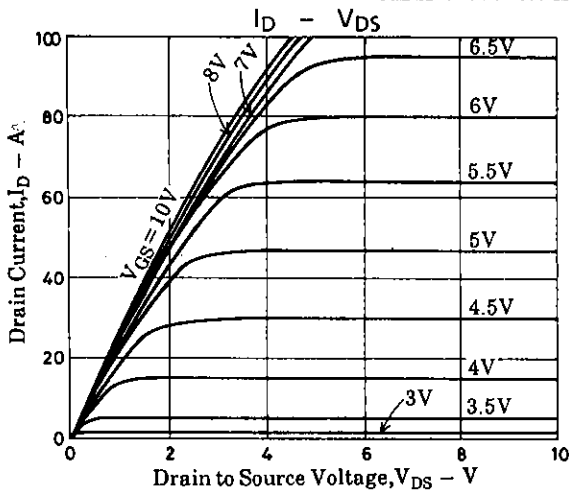
(unit : mm)

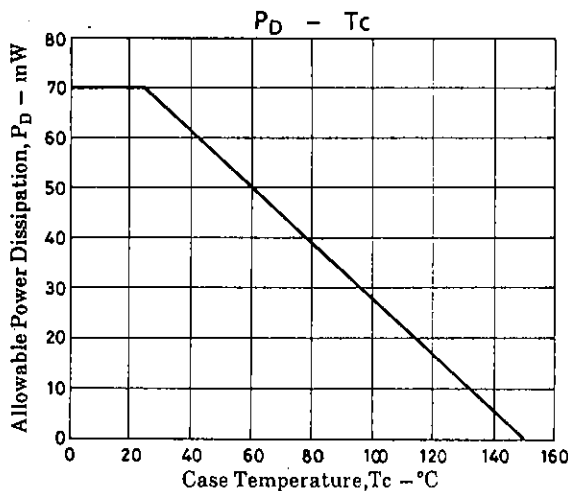
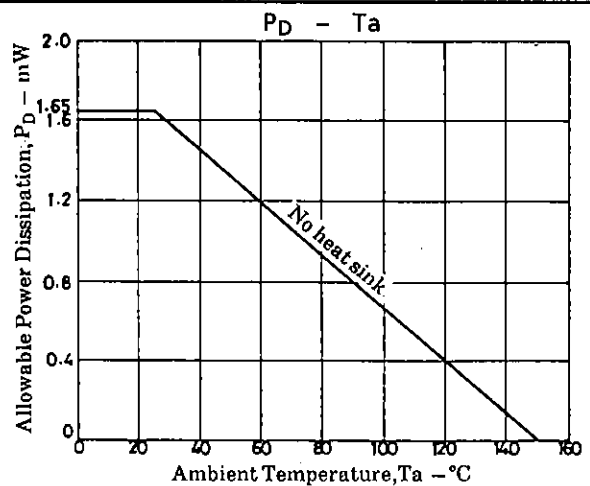
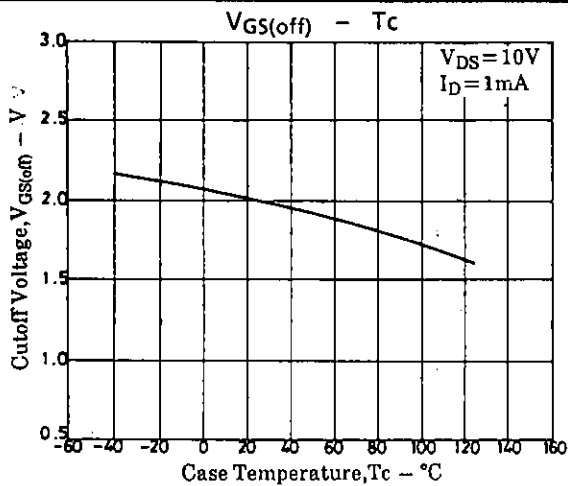


G : Gate
D : Drain
S : Source
SANYO : TO-220MF

SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

10694TH(KOTO) 8-7448 No.4177-1/3





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