

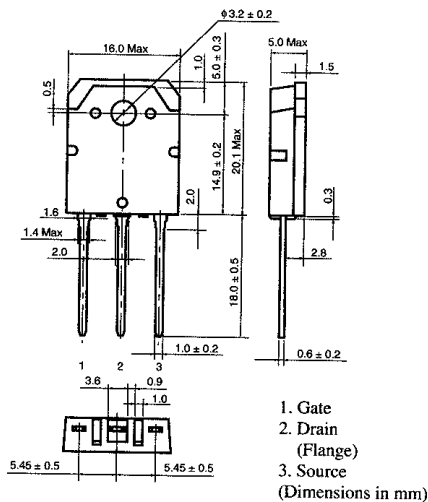
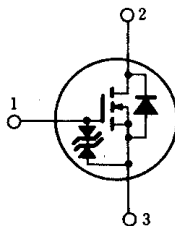
# 2SK685

## SILICON N-CHANNEL MOS FET

高速度電力スイッチング

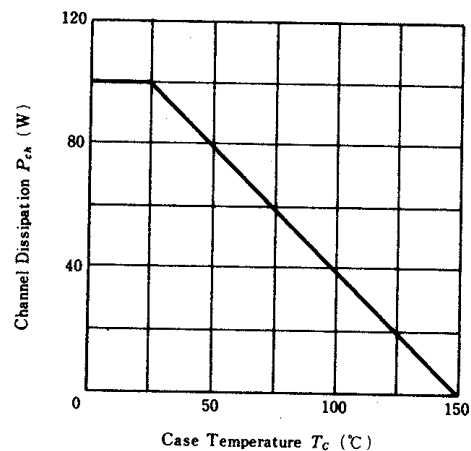
### ■ 特長

- オン抵抗が低い。
- スwitchングスピードが速い。
- 駆動電力が小さい。
- 2次降伏がない。
- スwitchングレギュレータ, DC-DCコンバータ, モータドライバなどに最適。



(TO-3P)

### POWER VS. TEMPERATURE DERATING



### ■ ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	1000	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Drain Current	$I_D$	5	A
Drain Peak Current	$I_{D(pulse)}$ *	15	A
Body-Drain Diode Reverse Drain Current	$I_{DR}$	5	A
Channel Dissipation	$P_{ch}$ **	100	W
Channel Temperature	$T_{ch}$	150	°C
Storage Temperature	$T_{stg}$	$-55 \sim +150$	°C

\*PW $\leq 10\mu\text{s}$ , duty cycle $\leq 1\%$  \*\*Value at  $T_c=25^\circ\text{C}$

### ■ ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10\text{mA}$ , $V_{GS}=0$	1000	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=\pm 100\mu\text{A}$ , $V_{DS}=0$	$\pm 20$	—	—	V
Gate-Source Leak Current	$I_{GSS}$	$V_{GS}=\pm 16\text{V}$ , $V_{DS}=0$	—	—	$\pm 10$	$\mu\text{A}$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=800\text{V}$ , $V_{GS}=0$	—	—	250	$\mu\text{A}$
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D=1\text{mA}$ , $V_{DS}=10\text{V}$	2.0	—	4.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D=3\text{A}$ , $V_{GS}=10\text{V}$ *	—	1.5	2.0	$\Omega$
Forward Transfer Admittance	$ y_{fs} $	$I_D=3\text{A}$ , $V_{DS}=20\text{V}$ *	2.0	3.5	—	S
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}$ , $V_{GS}=0$ , $f=1\text{MHz}$	—	1900	—	pF
Output Capacitance	$C_{oss}$		—	1200	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	760	—	pF
Turn-on Delay Time	$t_{d(on)}$	$I_D=3\text{A}$ , $V_{GS}=10\text{V}$ , $R_L=10\Omega$	—	25	—	ns
Rise Time	$t_r$		—	240	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	220	—	ns
Fall Time	$t_f$		—	230	—	ns
Body-Drain Diode Forward Voltage	$V_{DF}$	$I_F=5\text{A}$ , $V_{GS}=0$	—	1.3	—	V
Body-Drain Diode Reverse Recovery Time	$t_{rr}$	$I_F=5\text{A}$ , $V_{GS}=0$ , $di_F/dt=100\text{A}/\mu\text{s}$	—	150	—	ns

\*Pulse Test

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