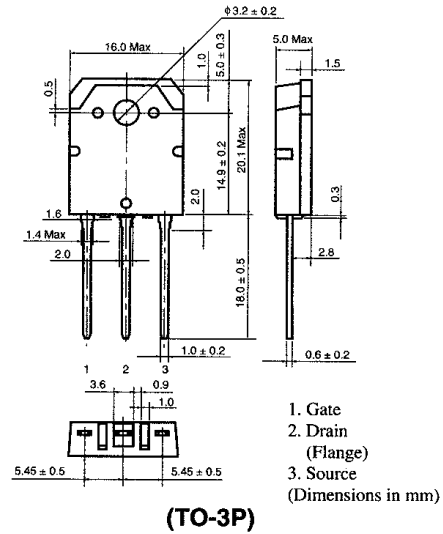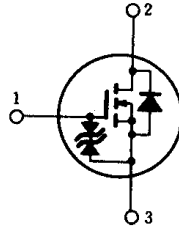# 2SK641, 2SK642

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。
- スイッチングスピードが速い。
- 駆動電力が小さい。
- 2次降伏がない。
- スイッチングレギュレータ，DC－DCコンバータ，などに最適。

1. Gate
2. Drain (Flange)
3. Source
(Dimensions in mm)

(TO-3P)

■ ABSOLUTE MAXIMUM RATINGS （Ta＝25℃）

Item	Symbol	2SK641	2SK642	Unit
Drain-Source Voltage	V_{DSS}	450	500	V
Gate-Source Voltage	V_{GSS}	±20		V
Drain Current	I_D	10		A
Drain Peak Current	$I_{D(pulse)}$*	30		A
Body-Drain Diode Reverse Drain Current	I_{DR}	10		A
Channel Dissipation	P_{ch}**	100		W
Channel Temperature	T_{ch}	150		℃
Storage Temperature	T_{stg}	−55～+150		℃

*PW≦10μs, duty cycle≦1%   **Value at Tc－25℃

POWER VS. TEMPERATURE DERATING
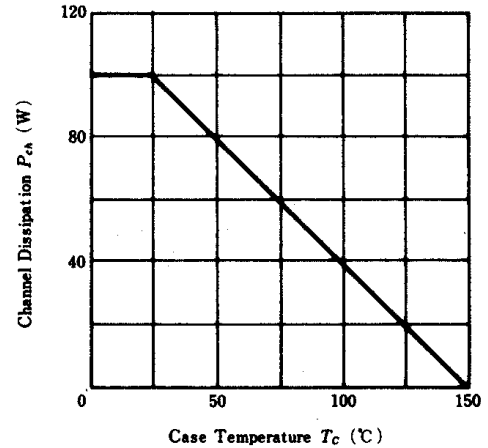
■ ELECTRICAL CHARACTERISTICS （Ta＝25℃）

Item		Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	2SK641	$V_{(BR)DSS}$	I_D－10mA, V_{GS}－0	450	—	—	V
	2SK642			500	—	—	
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	I_G－±100μA, V_{DS}－0	±20	—	—	V
Gate-Source Leak Current		I_{GSS}	V_{GS}－±16V, V_{DS}－0	—	—	±10	μA
Zero Gate Voltage Drain Current	2SK641	I_{DSS}	V_{DS}－360V, V_{GS}－0	—	—	250	μA
	2SK642		V_{DS}－400V, V_{GS}－0				
Gate-Source Cutoff Voltage		$V_{GS(off)}$	I_D－1mA, V_{DS}－10V	2.0	—	4.0	V
Static Drain-Source on State Resistance	2SK641	$R_{DS(on)}$	I_D－5A, V_{GS}－10V*	—	0.6	0.8	Ω
	2SK642			—	0.7	1.0	
Forward Transfer Admittance		$|y_{fs}|$	I_D－5A, V_{DS}－10V*	4.0	7.0	—	S
Input Capacitance		C_{iss}		—	1300	—	pF
Output Capacitance		C_{oss}	V_{DS}－10V, V_{GS}－0, f－1MHz	—	470	—	pF
Reverse Transfer Capacitance		C_{rss}		—	65	—	pF
Turn-on Delay Time		$t_{d(on)}$		—	15	—	ns
Rise Time		t_r		—	55	—	ns
Turn-off Delay Time		$t_{d(off)}$	I_D－5A, V_{GS}－10V, R_L－6Ω	—	100	—	ns
Fall Time		t_f		—	60	—	ns
Body-Drain Diode Forward Voltage		V_{DF}	I_F－10A, V_{GS}－0	—	1.0	—	V
Body-Drain Diode Reverse Recovey Time		t_{rr}	I_F－10A, V_{GS}－0, di_F/dt－100A/μs	—	450	—	ns

*Pulse Test