

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

Phase-out/Discontinued

2SK822

DESCRIPTION The 2SK822 is N-channel MOS Field Effect Power Transistor designed for switching power supplies, DC-DC converters.

- FEATURES**
- Suitable for switching power supplies, actuator controls, and pulse circuits.
 - Low $R_{DS(on)}$
 - No second breakdown
 - Isolated mold package

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150$ °C

Channel Temperature 150 °C Maximum

Maximum Power Dissipation ($T_c = 25$ °C)

Total Power Dissipation 90 W

Maximum Voltages and Currents ($T_a = 25$ °C)

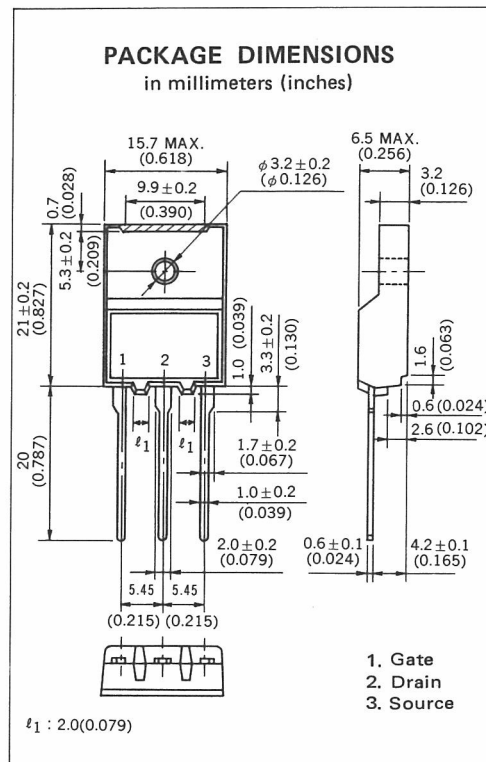
V_{DSS} Drain to Source Voltage 250 V

V_{GSS} Gate to Source Voltage ± 20 V

$I_{D(DC)}$ Drain Current (DC) ± 22 A

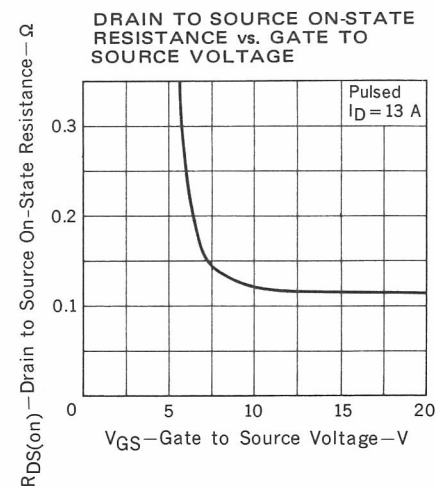
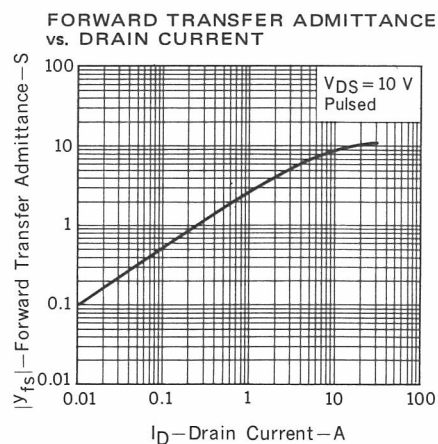
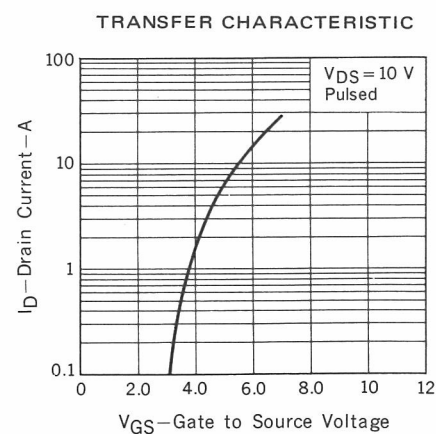
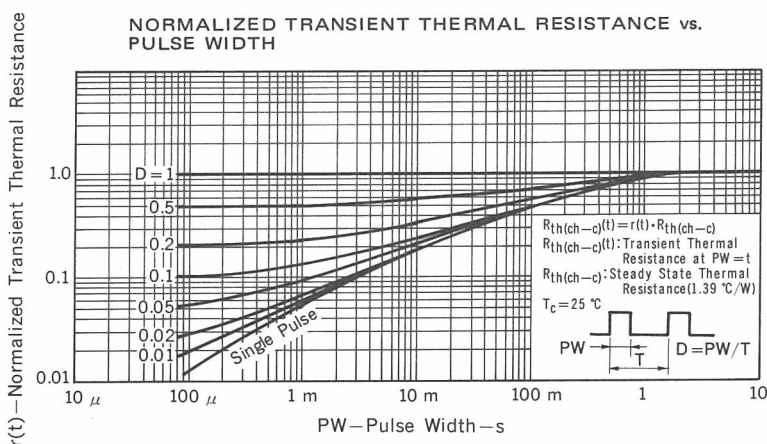
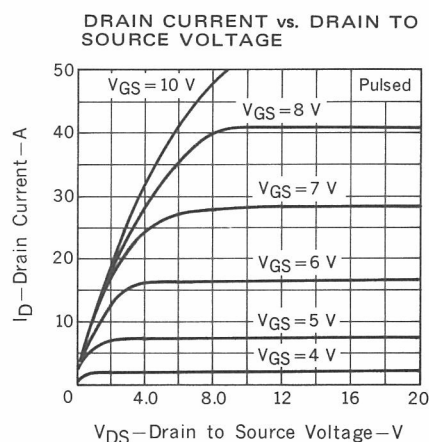
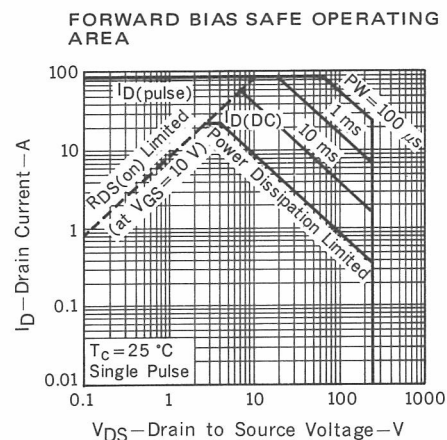
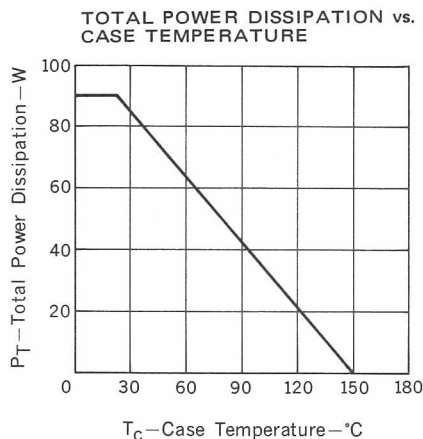
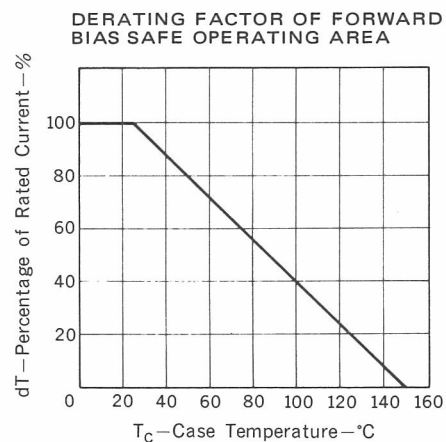
$I_{D(pulse)}$ Drain Current (pulse)* ± 88 A

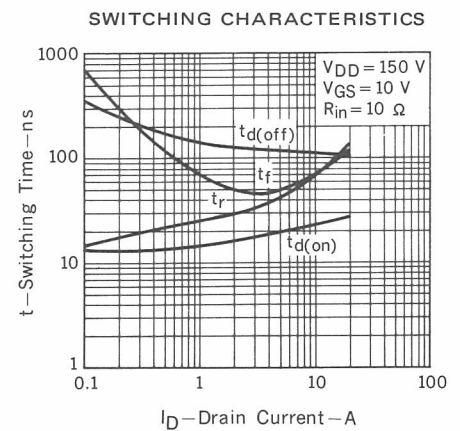
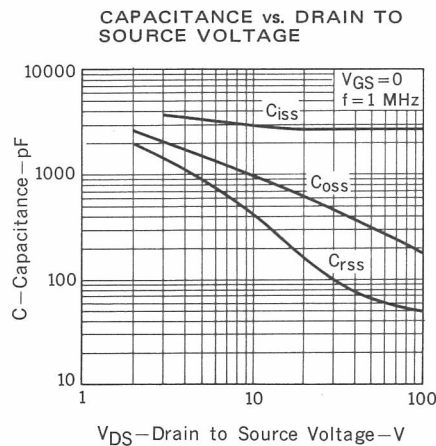
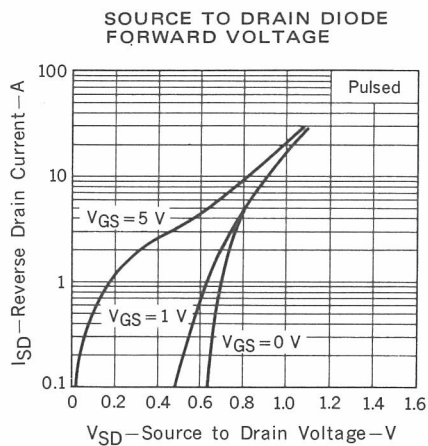
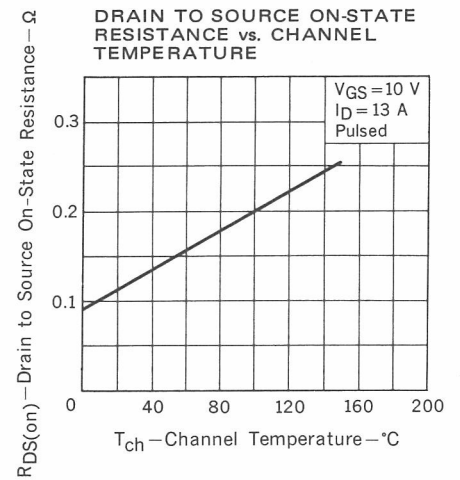
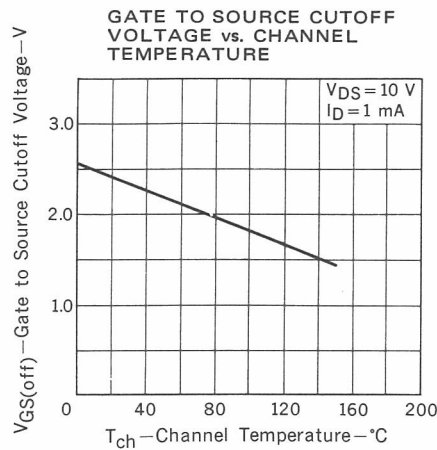
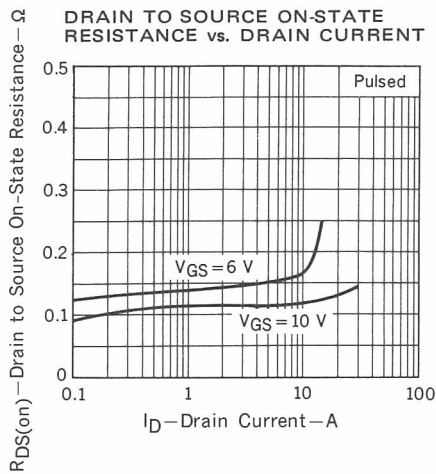
* $PW \leq 100$ μs , Duty Cycle ≤ 2 %



ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{DSS}	Drain Leakage Current			100	μA	$V_{DS} = 250$ V, $V_{GS} = 0$
I_{GSS}	Gate to Source Leakage Current			± 100	nA	$V_{GS} = \pm 20$ V, $V_{DS} = 0$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.5		3.5	V	$V_{DS} = 10$ V, $I_D = 1$ mA
$ Y_{fs} $	Forward Transfer Admittance	5.0			S	$V_{DS} = 10$ V, $I_D = 13$ A
$R_{DS(on)}$	Drain to Source On-State Resistance		0.12	0.15	Ω	$V_{GS} = 10$ V, $I_D = 13$ A
C_{iss}	Input Capacitance		2950		pF	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ MHz
C_{oss}	Output Capacitance		990		pF	
C_{rss}	Reverse Transfer Capacitance		450		pF	
$t_{d(on)}$	Turn-On Delay Time		25		ns	$I_D = 13$ A $V_{DD} \div 150$ V $V_{GS(on)} = 10$ V $R_L = 11.5$ Ω $R_{in} = 10$ Ω
t_r	Rise Time		85		ns	
$t_{d(off)}$	Turn-Off Delay Time		115		ns	
t_f	Fall Time		85		ns	

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



SWITCHING TIME TEST CIRCUIT

