

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

2SK1198

www.DataSheet4U.com

DESCRIPTION The 2SK1198 is N-channel MOS Field Effect Power Transistor designed for switching power supplies, AC Adapters.

- 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 35 W

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

V_{DS} Drain to Source Voltage 700 V

V_{GS} Gate to Source Voltage ± 20 V

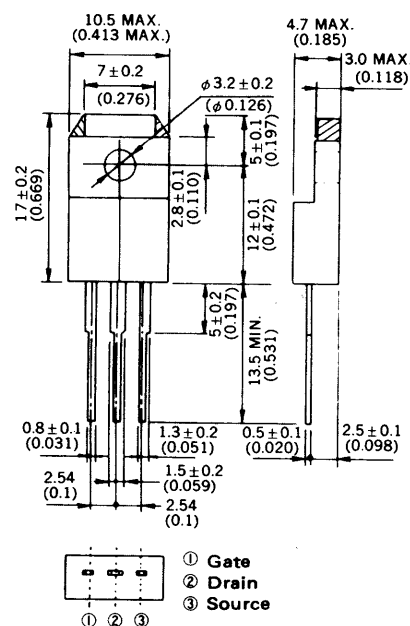
$I_{D(DC)}$ Drain Current (DC) ± 2 A

$I_{D(pulse)}$ Drain Current (pulse)* ± 8.0 A

* $PW \leq 10$ μs , Duty Cycle ≤ 1 %

PACKAGE DIMENSIONS

in millimeters (inches)



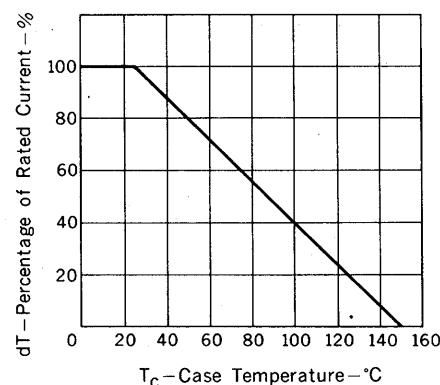
ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
I_{DSS}	Drain Leakage Current			100	μA	$V_{DS} = 700$ 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	1.0			S	$V_{DS} = 10$ V, $I_D = 1$ A
$R_{DS(on)}$	Drain to Source On-State Resistance		2.5	3.2	Ω	$V_{GS} = 10$ V, $I_D = 1$ A
C_{iss}	Input Capacitance		950		pF	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ MHz
C_{oss}	Output Capacitance		350		pF	
C_{rss}	Reverse Transfer Capacitance		200		pF	
$t_{d(on)}$	Turn-On Delay Time		10		ns	$I_D = 1$ A, $V_{DD} \approx 150$ V $V_{GS(on)} = 10$ V $R_L = 150$ Ω $R_{in} = 10$ Ω
t_r	Rise Time		10		ns	
$t_{d(off)}$	Turn-Off Delay Time		60		ns	
t_f	Fall Time		20		ns	

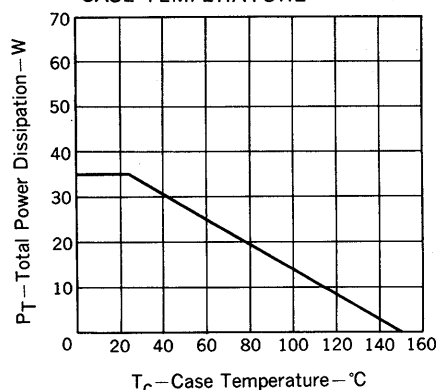
NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

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

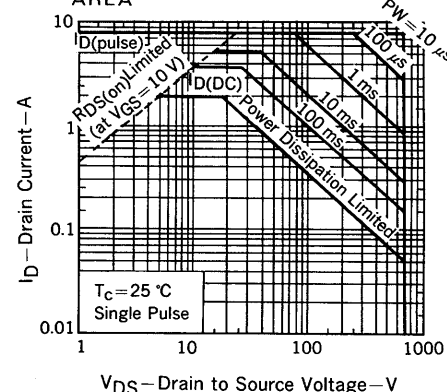
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



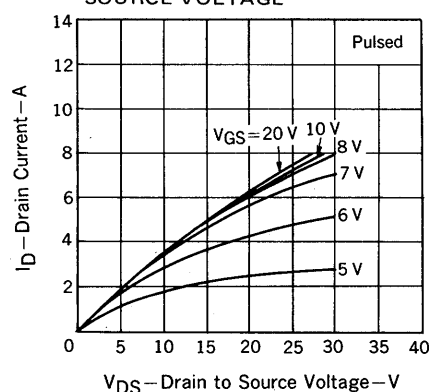
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



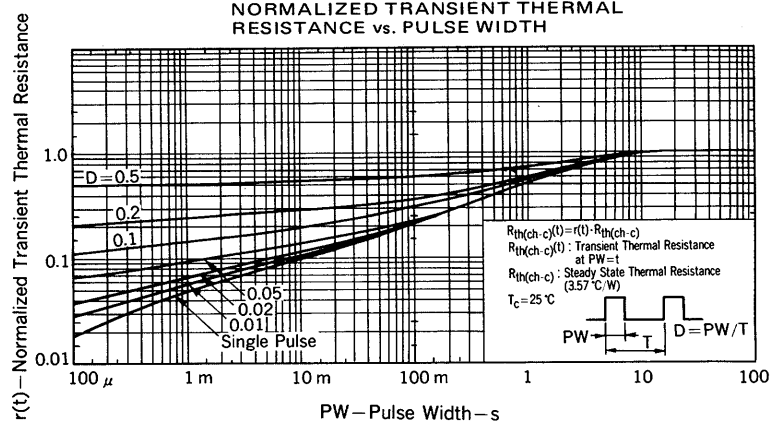
FORWARD BIAS SAFE OPERATING AREA



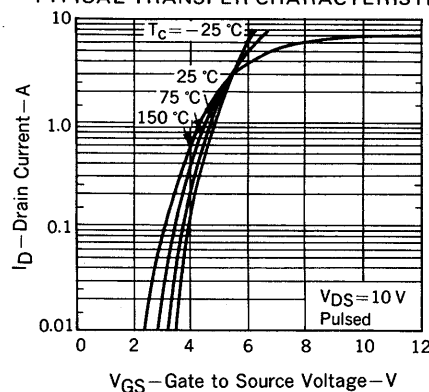
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



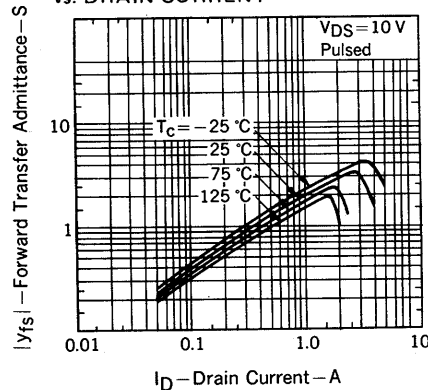
NORMALIZED TRANSIENT THERMAL RESISTANCE vs. PULSE WIDTH



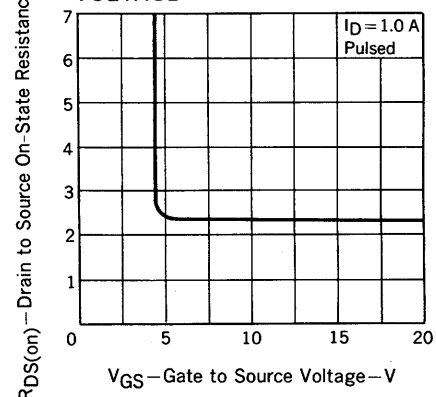
TYPICAL TRANSFER CHARACTERISTICS

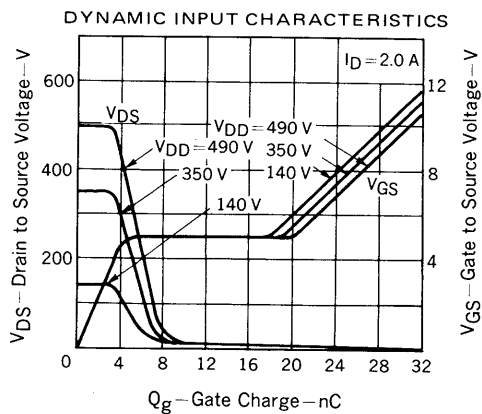
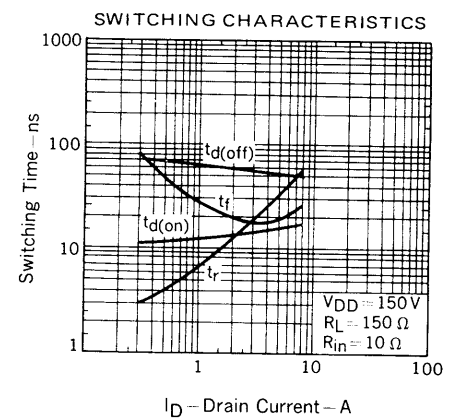
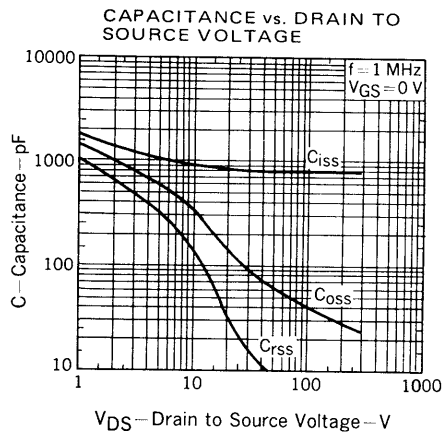
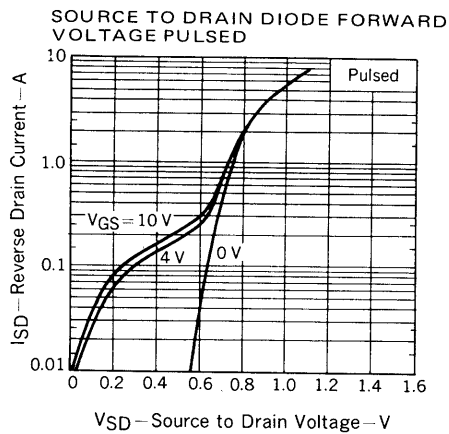
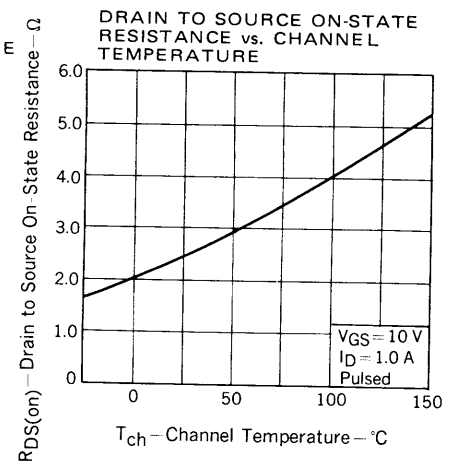
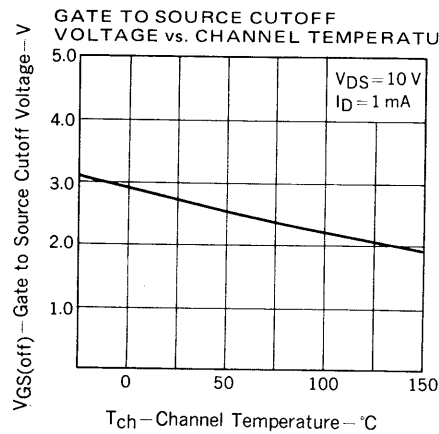
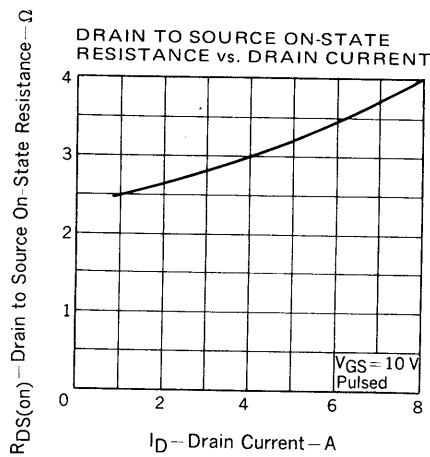


FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT

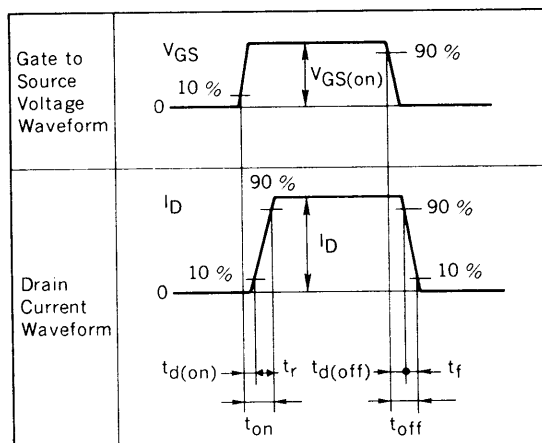
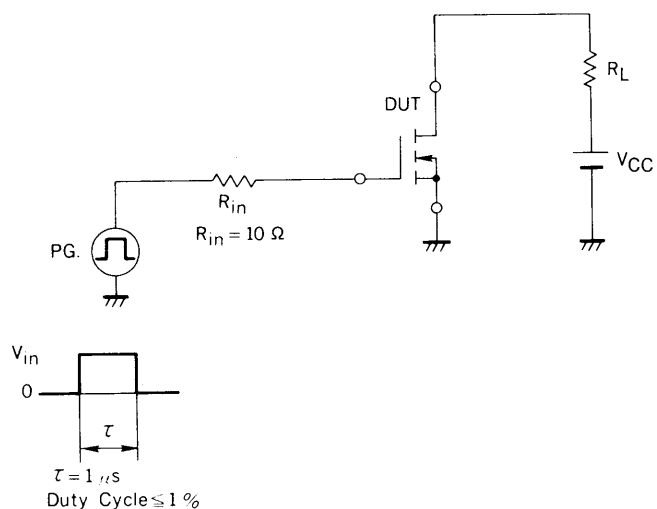


DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE





SWITCHING TIME TEST CIRCUIT 1



TEST CIRCUIT 2 GATE CHARGE

