

N-CHANNEL MOS FIELD EFFECT POWER TRANSISTOR

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2SK798

DESCRIPTION The 2SK798 is N-Channel MOS Field Effect Power Transistor designed for solenoid, motor and lamp driver.

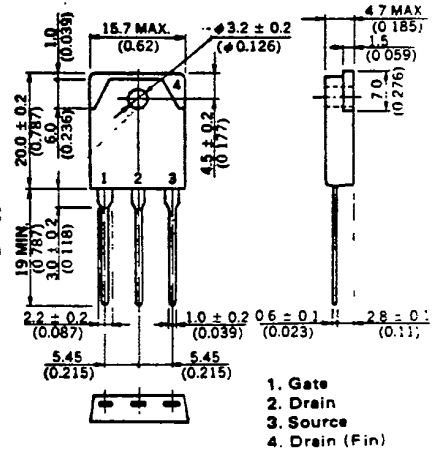
- FEATURES**
- 4 V Gate Drive – Logic level –
 - Low $R_{DS(on)}$
 - No Secondary Breakdown

ABSOLUTE MAXIMUM RATINGS

- Maximum Temperatures
- Storage Temperature -55 to +150 °C
 - Channel Temperature 150 °C Maximum
- Maximum Power Dissipations
- Total Power Dissipation ($T_a = 25\text{ °C}$) 3.0 W
 - Total Power Dissipation ($T_c = 25\text{ °C}$) 150 W
- Maximum Voltages and Currents ($T_a = 25\text{ °C}$)
- V_{DSS} Drain to Source Voltage 100 V
 - V_{GSS} Gate to Source Voltage ± 20 V
 - $I_{D(DC)}$ Drain Current (DC) ± 40 A
 - $I_{D(pulse)}$ Drain Current (pulse)* ± 160 A

* $PW \leq 300\ \mu s$, Duty Cycle $\leq 2\%$

PACKAGE DIMENSIONS
in millimeters (inches)



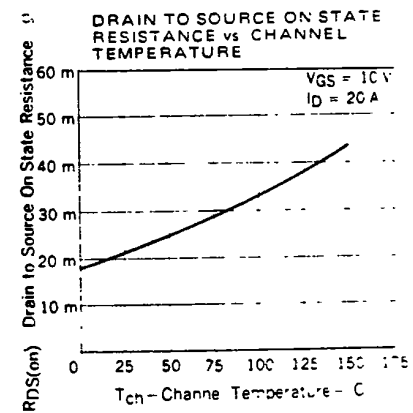
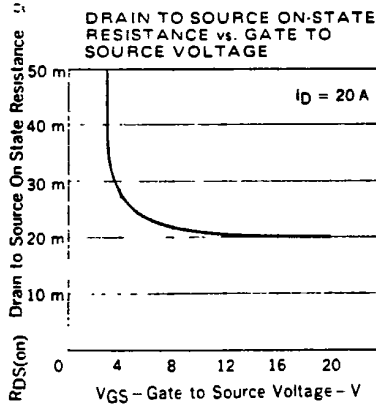
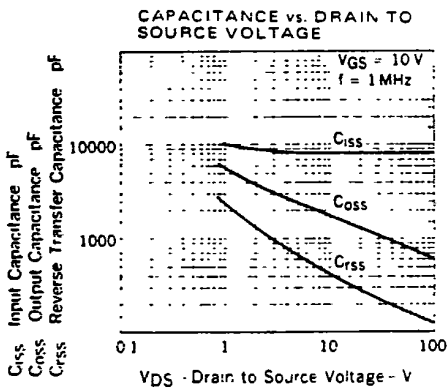
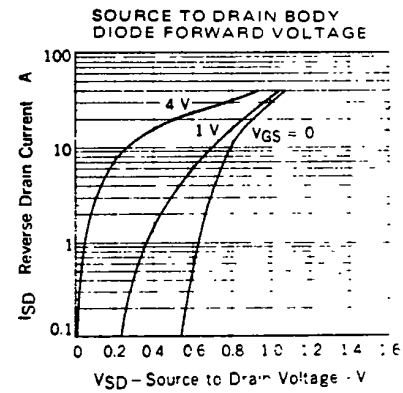
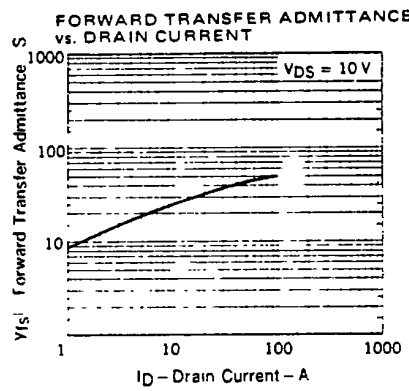
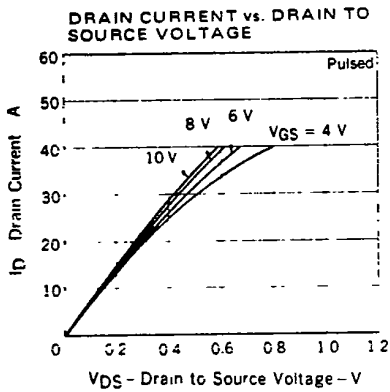
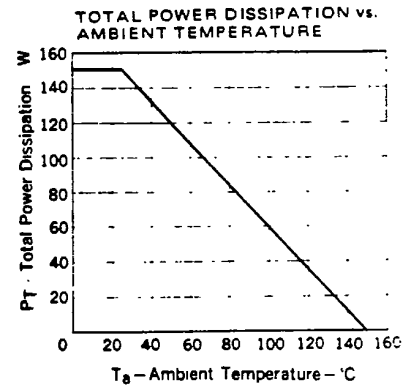
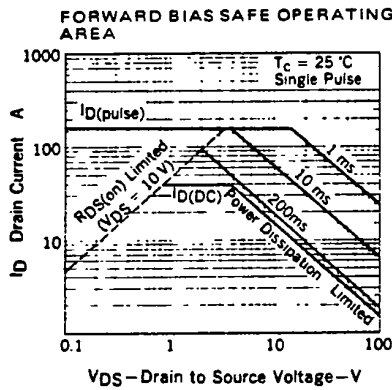
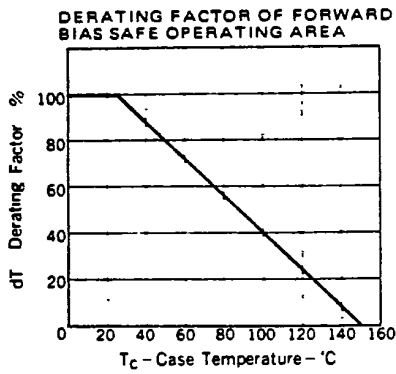
ELECTRICAL CHARACTERISTICS ($T_a = 25\text{ °C}$)

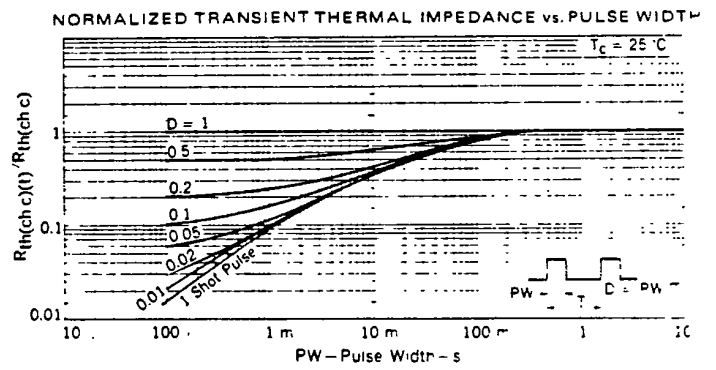
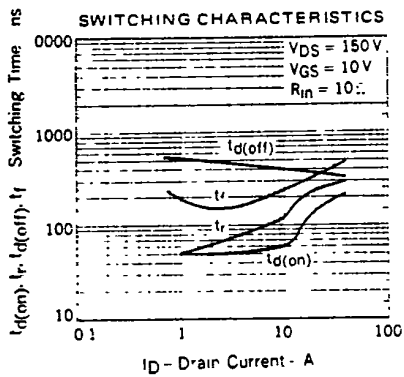
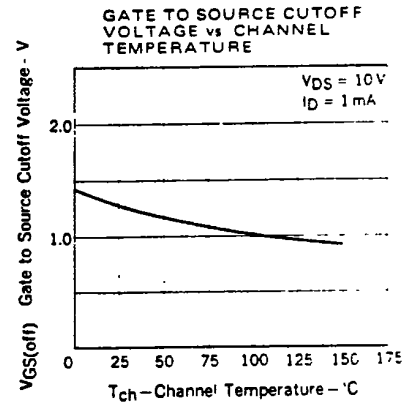
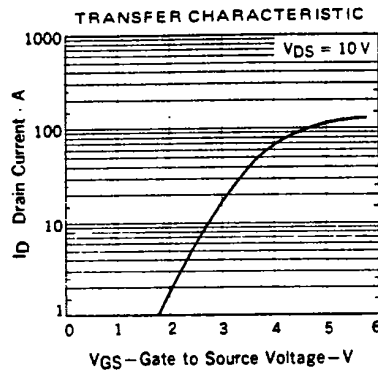
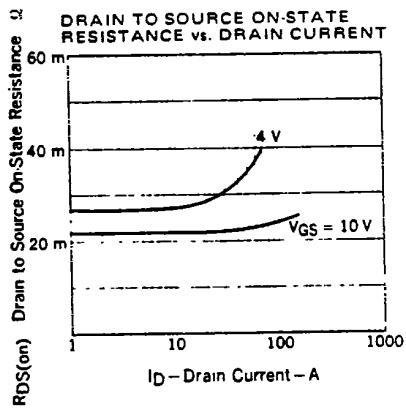
SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$R_{DS(on)}$	Drain to Source On-State Resistance			31	m Ω	$V_{GS} = 10\text{ V}$, $I_D = 20\text{ A}$
$R_{DS(on)}$	Drain to Source On-State Resistance			40	m Ω	$V_{GS} = 4\text{ V}$, $I_D = 20\text{ A}$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1.0		2.5	V	$V_{DS} = 10\text{ V}$, $I_D = 1\text{ mA}$
$ Y_{fs} $	Forward Transfer Admittance	5.0			S	$V_{DS} = 10\text{ V}$, $I_D = 20\text{ A}$
I_{DSS}	Drain Leakage Current			100	μA	$V_{DS} = 100\text{ V}$, $V_{GS} = 0$
I_{GSS}	Gate to Source Leakage Current			± 100	nA	$V_{GS} = \pm 20\text{ V}$, $V_{DS} = 0$
C_{iss}	Input Capacitance		8000		pF	$V_{DS} = 10\text{ V}$
C_{oss}	Output Capacitance		1800		pF	$V_{GS} = 0$
C_{rss}	Reverse Transfer Capacitance		450		pF	$f = 1\text{ MHz}$
$t_{d(on)}$	Turn-On Delay Time		60		ns	$I_D = 20\text{ A}$, $V_{CC} = 50\text{ V}$ $R_L = 2.5\ \Omega$ $R_{in} = 10\ \Omega$
t_r	Rise Time		120		ns	
$t_{d(off)}$	Turn-Off Delay Time		400		ns	
t_f	Fall Time		250		ns	

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





SWITCHING TIME TEST CIRCUIT

