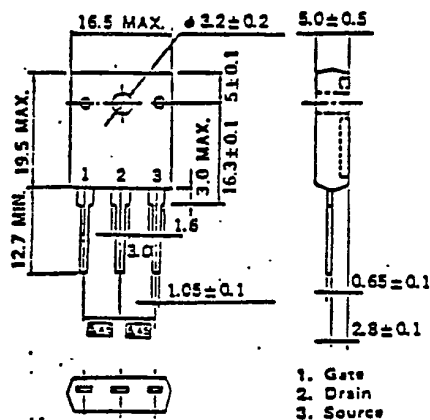


NEC
 ELECTRON DEVICE

MOS FIELD EFFECT TRANSISTOR

2SK720A

FAST SWITCHING N-CHANNEL SILICON POWER MOS FET

 PACKAGE DIMENSIONS
 (Unit: mm)


Features

- Suitable for switching power supplies, DC-DC converters and pulse circuits
- High speed switching
- Low $R_{DS(on)}$
- No second breakdown

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Drain to Source Voltage	V_{DS}	250V
Gate to Source Voltage	V_{GS}	$\pm 20\text{V}$
Continuous Drain Current	$I_D(\text{DC})$	$\pm 20\text{A}$
Pulse Drain Current	$I_D(\text{pulse})$	$\pm 80\text{A}$
Total Power Dissipation	P_T	3.0W
Total Power Dissipation	P_{T**}	120W
Channel Temperature	T_{ch}	150 $^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150 $^\circ\text{C}$
* $P_W \leq 100 \mu\text{s}$, Duty Cycles $\leq 2\%$		
** $T_c = 25^\circ\text{C}$		

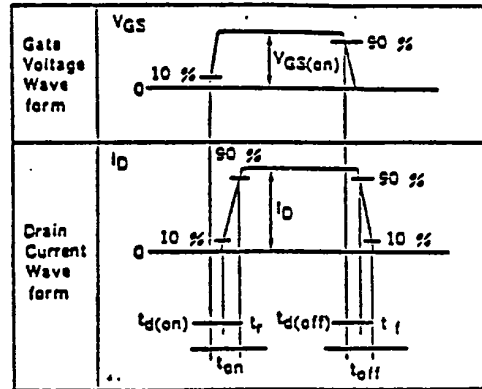
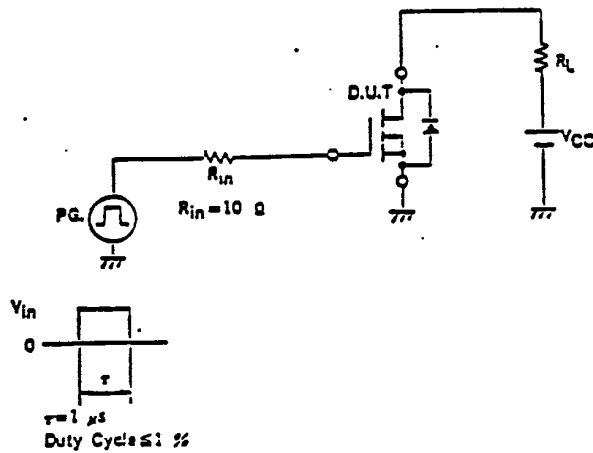
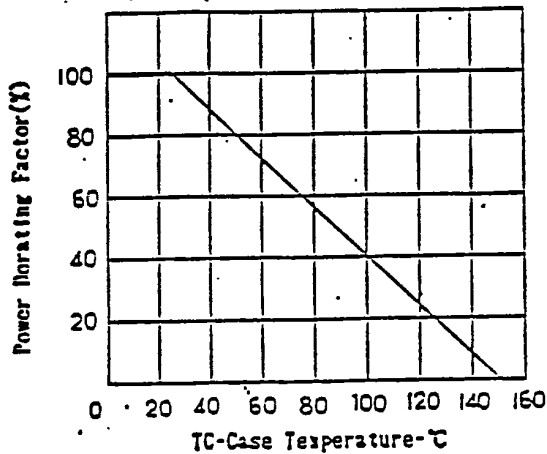
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I_{DSS}			100	μA	$V_{DS} = 250\text{V}, V_{GS} = 0$
Gate to Source Leakage Current	I_{GSS}			± 100	nA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	1.5		3.5	V	$V_{DS} = 10\text{V}, I_D = 1.0\text{mA}$
Forward Transfer Admittance	$ y_{fs} $	5.0			S	$V_{DS} = 10\text{V}, I_D = 10\text{A}$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.18	0.23	Ω	$V_{GS} = 10\text{V}, I_D = 10\text{A}$
Input Capacitance	C_{iss}		1900		pF	$V_{DS} = 10\text{V}, V_{GS} = 0$
Output Capacitance	C_{oss}		630		pF	$f = 1.0\text{MHz}$
Reverse Transfer Capacitance	C_{rss}		320		pF	$I_D = 10\text{A}, V_{GS(on)} = 10\text{V}, V_{cc} = 150\text{V}, R_L = 15 \Omega$
Turn-On Delay Time	$t_d(on)$		30		ns	
Rise Time	t_r		45		ns	
Turn-Off Delay Time	$t_d(off)$		120		ns	
Fall Time	t_f		40		ns	

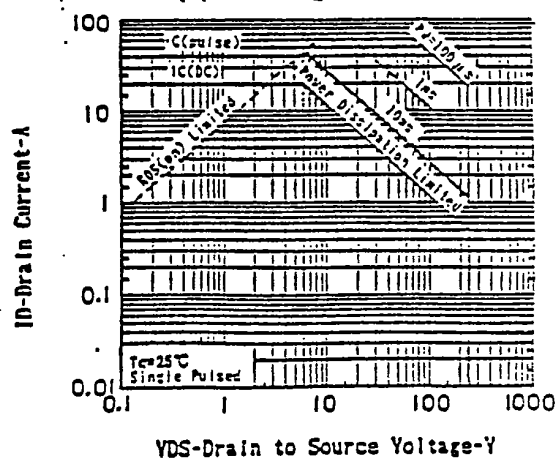
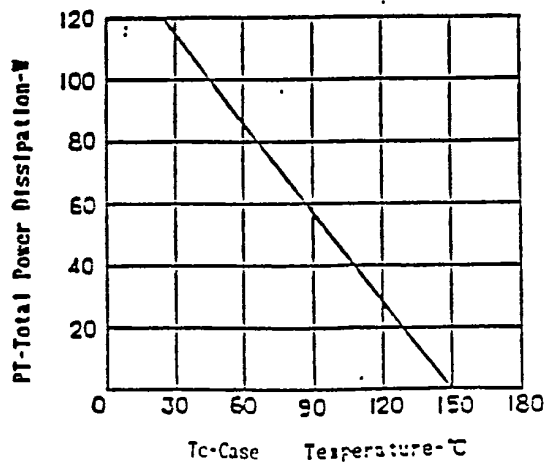
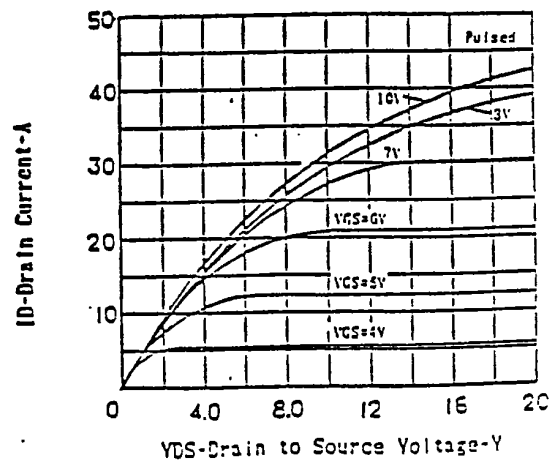
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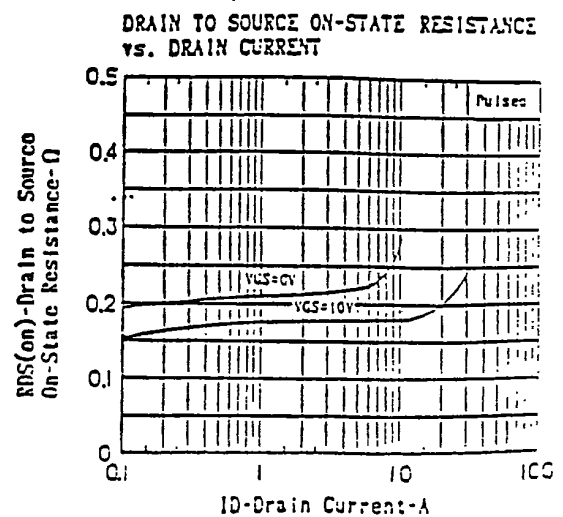
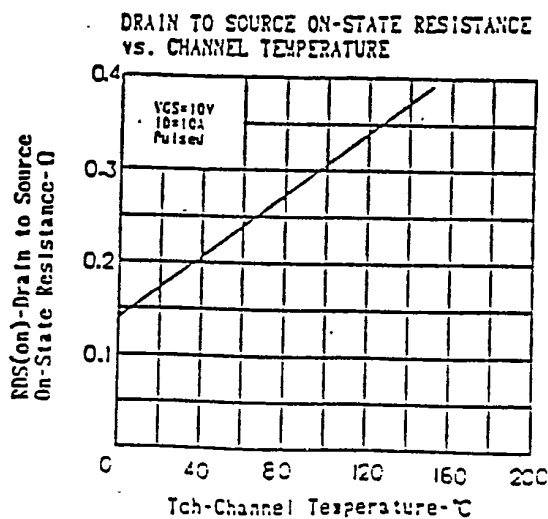
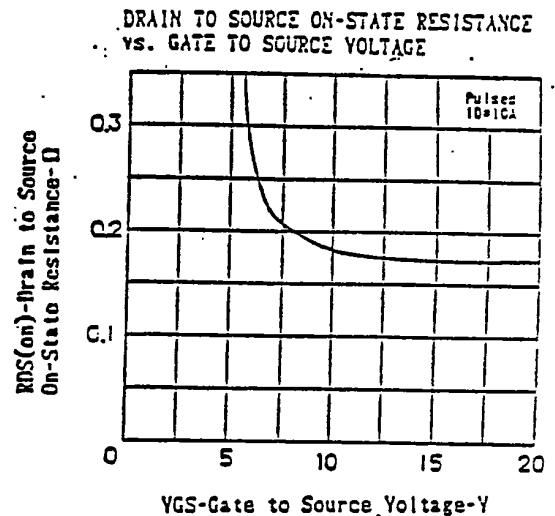
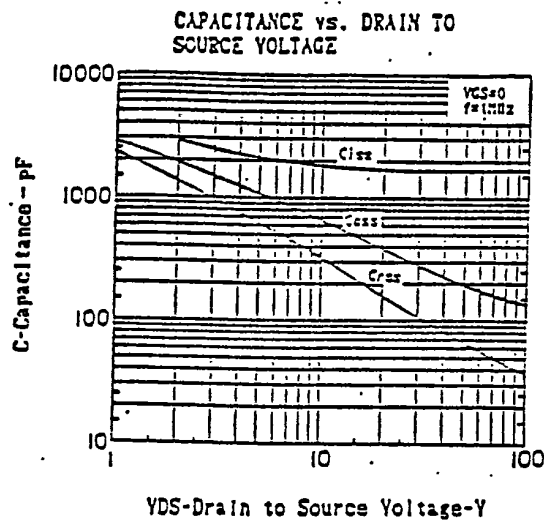
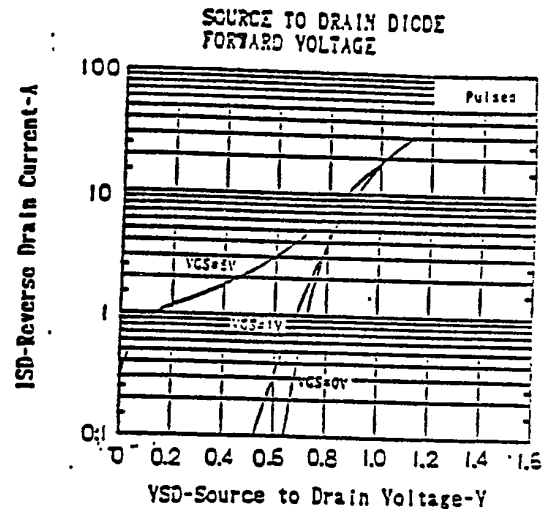
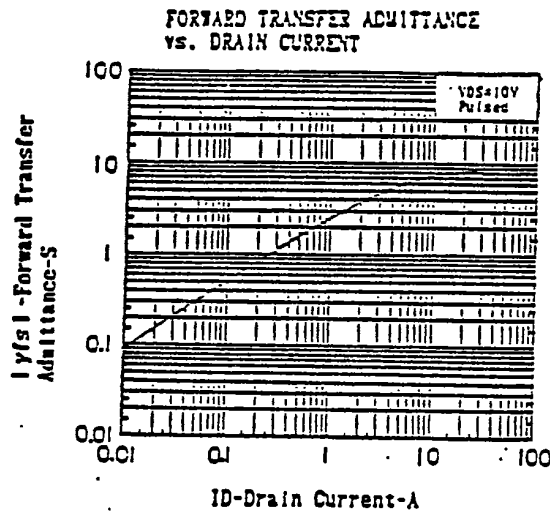
TURN-ON AND TURN-OFF TIME TEST CIRCUIT

DERATING FACTOR OF FORWARD BIAS
SAFE OPERATING AREA

FORWARD BIAS SAFE OPERATING AREA

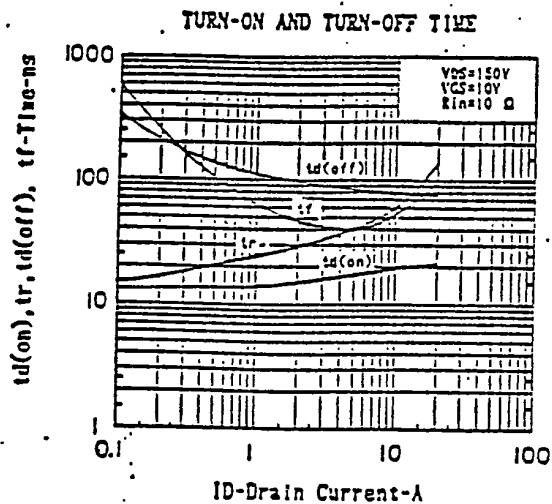
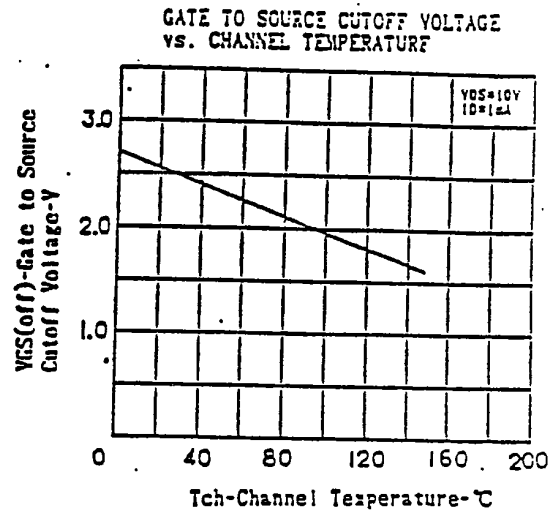
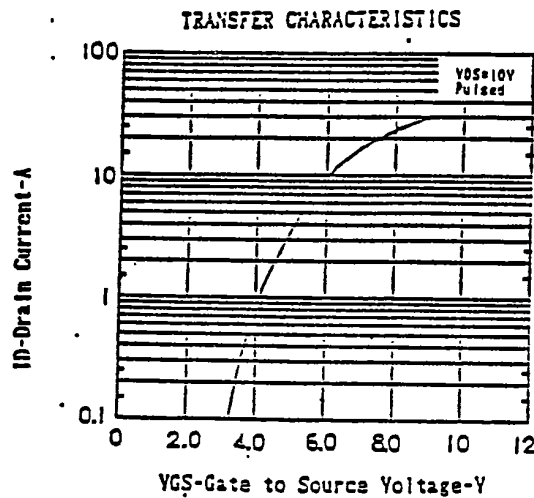
TOTAL POWER DISSIPATION vs.
CASE TEMPERATUREDRAIN CURRENT vs. DRAIN TO
SOURCE VOLTAGE

NEC ELECTRON DEVICE 2SK720A



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