

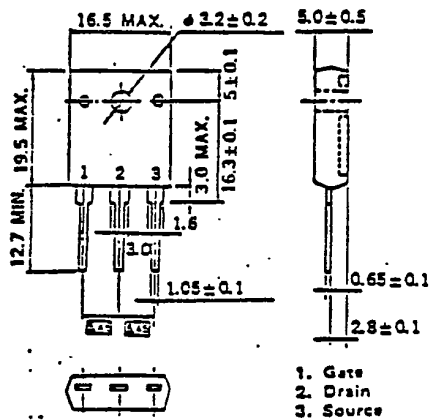
NEC
ELECTRON DEVICE

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 RDS(on)
- No second breakdown

Absolute Maximum Ratings (Ta=25°C)

Drain to Source Voltage	V _{DSS}	250V
Gate to Source Voltage	V _{GSS}	± 20V
Continuous Drain Current	I _D (DC)	± 20A
Pulse Drain Current	I _D (pulse)	± 80A
Total Power Dissipation	P _T	3.0W
Total Power Dissipation	P _T **	120W
Channel Temperature	T _{ch}	150 °C
Storage Temperature	T _{stg}	-55 to +150 °C

* PW ≤ 100 μs, Duty Cycles ≤ 2 %
** T_c = 25 °C

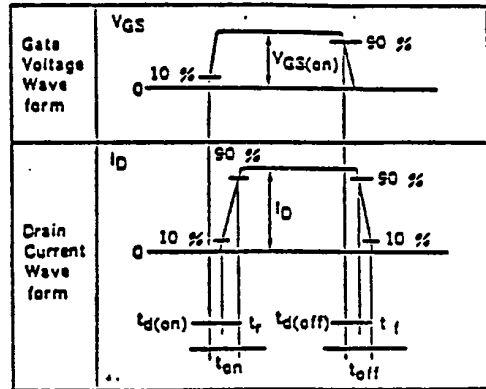
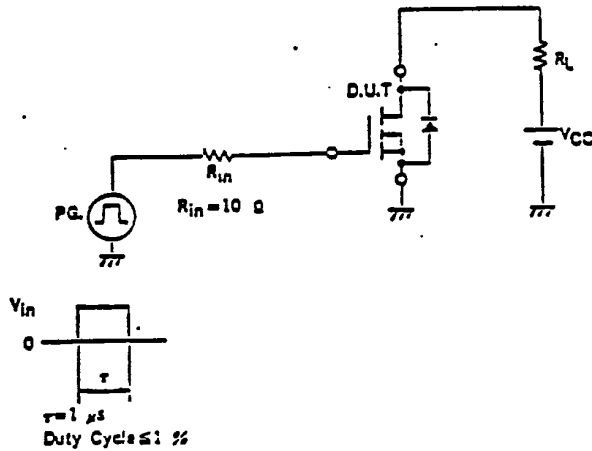
Electrical Characteristics (Ta=25 °C)

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain Leakage Current	I _{DSS}			100	μA	V _D =250V, V _G =0
Gate to Source Leakage Current	I _{GSS}			±100	nA	V _G =±20V, V _D =0
Gate to Source Cutoff Voltage	V _G (off)	1.5		3.5	V	V _D =10V, I _D =1.0mA
Forward Transfer Admittance	y _{fs}	5.0			S	V _D =10V, I _D =10A
Drain to Source On-State Resistance	R _{DS(on)}		0.18	0.23	Ω	V _G =10V, I _D =10A
Input Capacitance	C _{iss}		1900		pF	V _D =10V,
Output Capacitance	C _{oss}		630		pF	V _G =0,
Reverse Transfer Capacitance	C _{rss}		320		pF	f=1.0MHz
Turn-On Delay Time	t _d (on)		30		ns	I _D =10A.
Rise Time	t _r		45		ns	V _G (on)=10V,
Turn-Off Delay Time	t _d (off)		120		ns	V _{CC} =150V,
Fall Time	t _f		40		ns	R _L =15 Ω

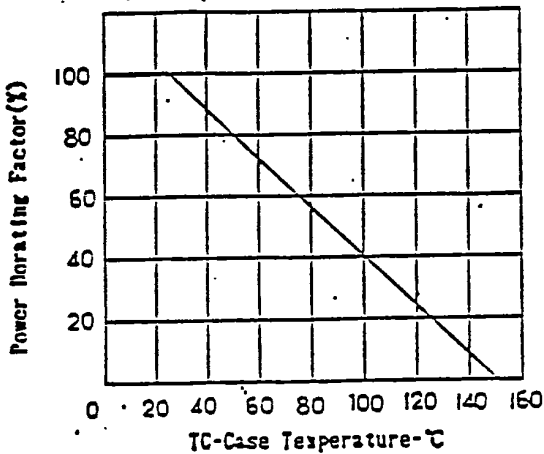
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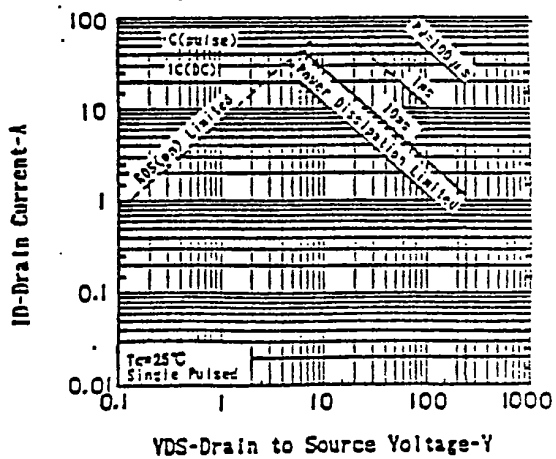
TURN-ON AND TURN-OFF TIME TEST CIRCUIT



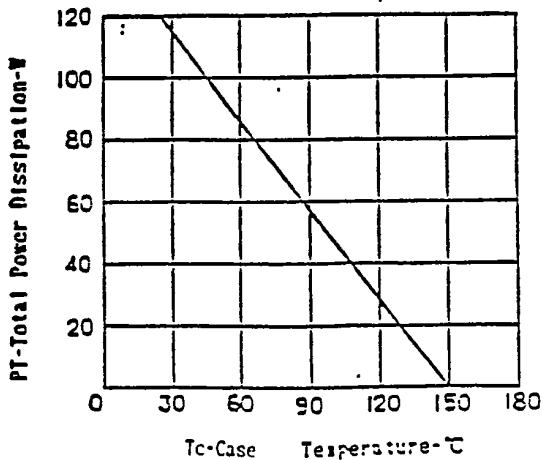
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



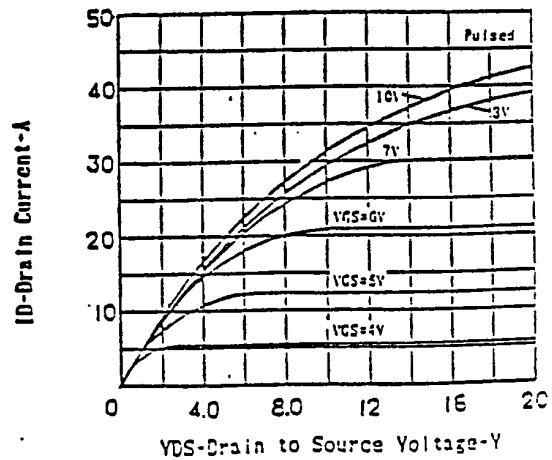
FORWARD BIAS SAFE OPERATING AREA



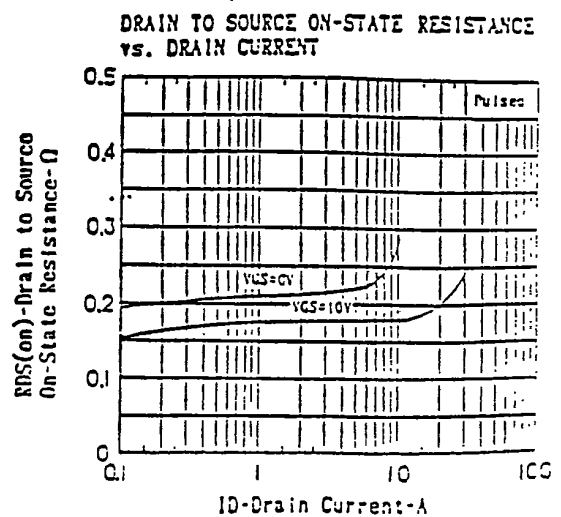
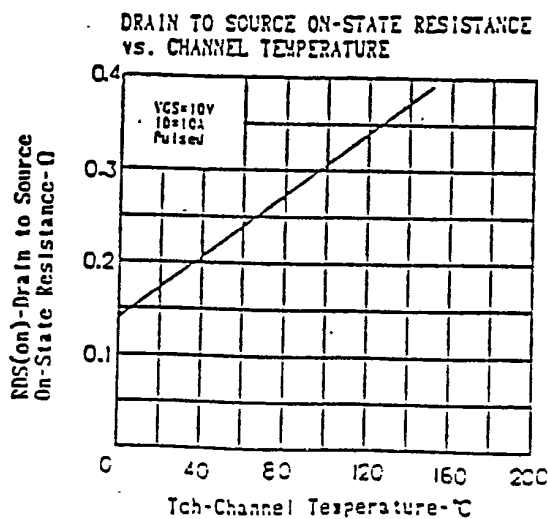
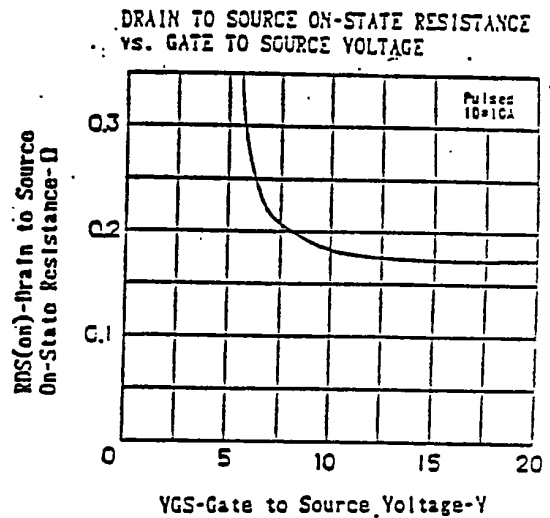
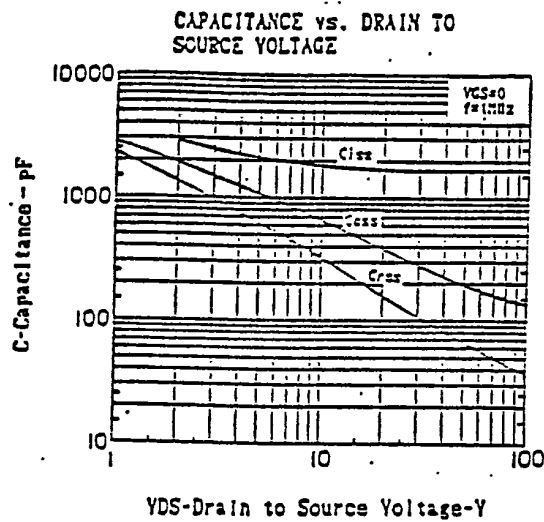
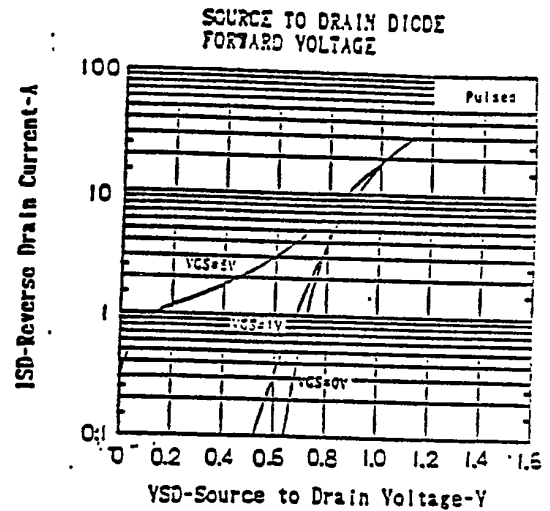
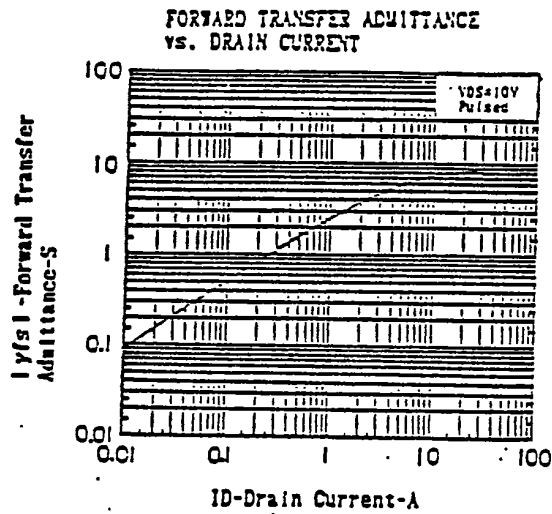
TOTAL POWER DISSIPATION vs. CASE TEMPERATURE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



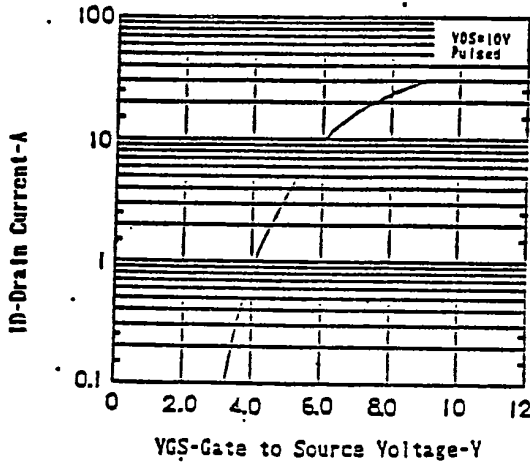
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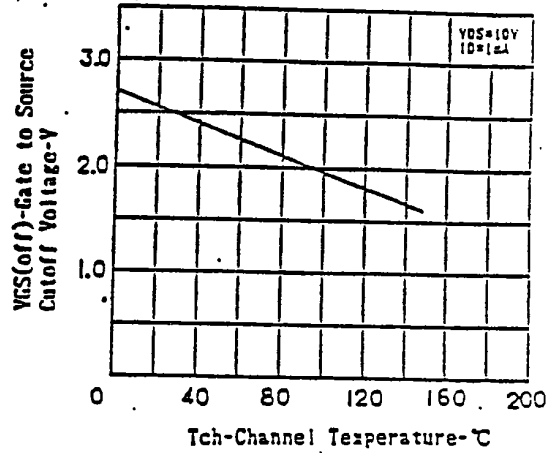
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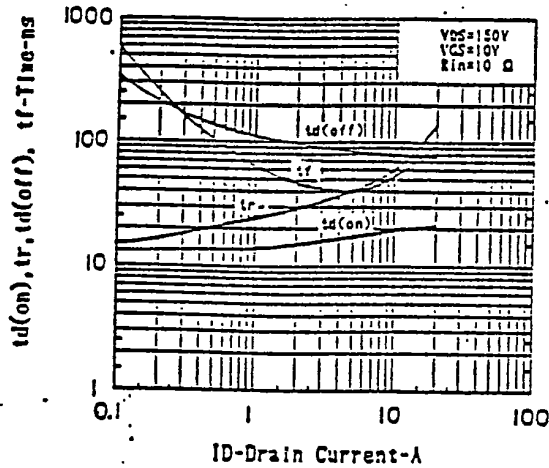
TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



TURN-ON AND TURN-OFF TIME



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