Ordering number: EN 659K

SANYO

No.659K

2SK223

N-Channel Silicon Junction FET

High Voltage Driver Applications

Features

- Ultrahigh withstand voltage ($V_{GDS} \geqq -80V$).
- Due to low gate leakage currents even at high voltages, the 2SK223 is suitable for a wide range of applications ($I_{GDL} = 1nA/V_{DS} = 50V$, $I_D = 1mA$).
- High $|y_{fs}|$ ($|y_{fs}| = 20mS/V_{DS} = 30V$, $f = 1kHz$).

Absolute Maximum Ratings at Ta = 25°C

			unit
Drain-to-Source Voltage	V_{DSS}	80	V
Gate-to-Drain Voltage	V_{GDS}	−80	V
Gate Current	I_G	10	mA
Allowable Power Dissipation	P_D	400	mW
Junction Temperature	Tj	125	°C
Storage Temperature	Tstg	−40 to +125	°C

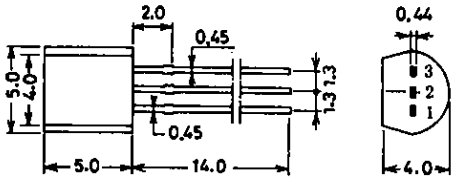
Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -100\mu A$	−80			V
Gate Cutoff Current	I_{GSS}	$V_{GS} = -30V, V_{DS} = 0$			−1.0	nA
Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0$	1.2※		24※	mA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 30V, I_D = 10\mu A$	−0.75			V
Forward Transfer Admittance	$\|y_{fs}\|$	$V_{DS} = 30V, V_{GS} = 0, f = 1kHz$	20			mS
Input Capacitance	Ciss	$V_{DS} = 30V, V_{GS} = 0, f = 1MHz$		12		pF
Reverse Transfer Capacitance	Crss	$V_{DS} = 30V, V_{GS} = 0, f = 1MHz$		2.5		pF
Noise Figure	NF	$V_{DS} = 10V, I_D = 3mA, Rg = 10k\Omega$, $f = 1kHz$		1.5		dB

※ The 2SK223 is classified by I_{DSS} as follows (unit : mm) :

1.2 D 3.0	2.5 E 6.0	5.0 F 12.0	10.0 G 24.0

Package Dimensions 2019B
(unit : mm)



JEDEC: TO-92
EIAJ : SC-43
SANYO: NP

1 : Source
2 : Gate
3 : Drain

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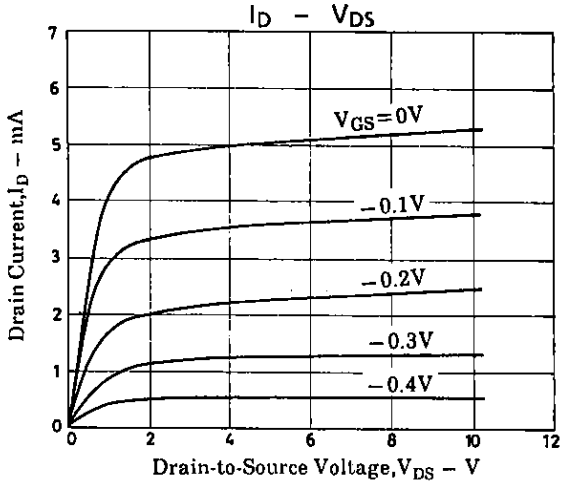
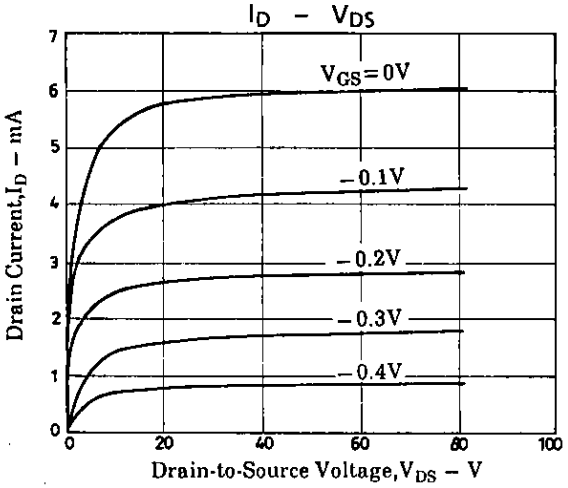
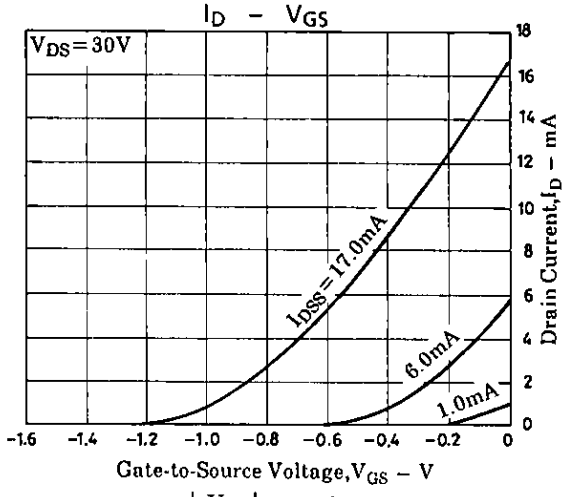
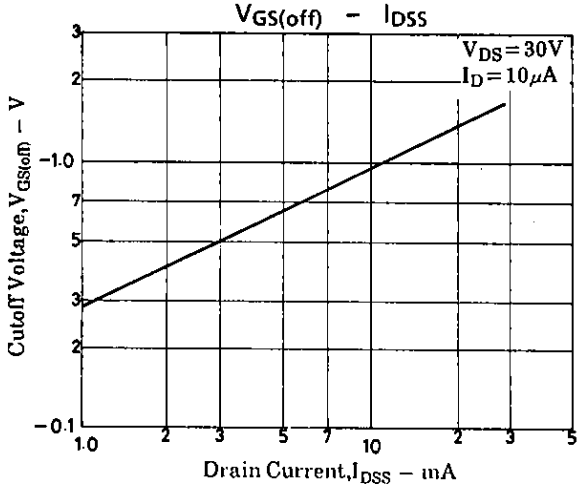
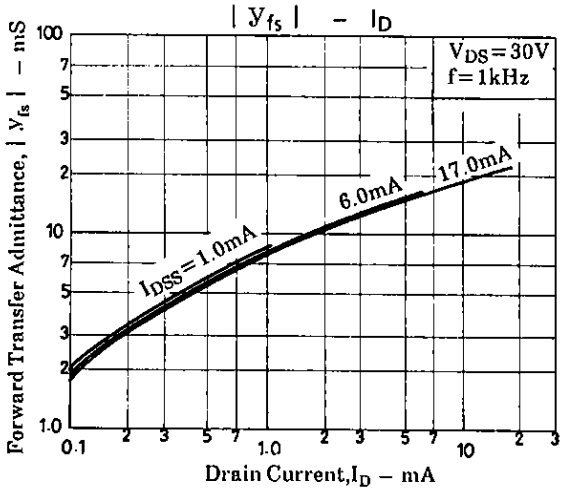
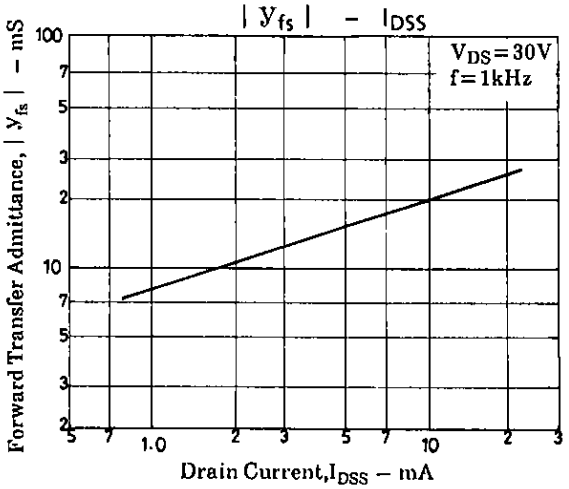

I_D – V_{DS}
V_{GS}=0V
–0.1V
–0.2V
–0.3V
–0.4V
Drain Current, I_D – mA
Drain-to-Source Voltage, V_{DS} – V

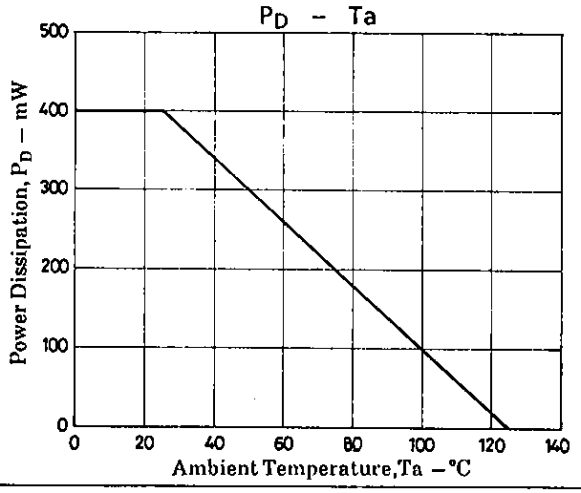

I_D – V_{DS}
V_{GS}=0V
–0.1V
–0.2V
–0.3V
–0.4V
Drain Current, I_D – mA
Drain-to-Source Voltage, V_{DS} – V


I_D – V_{GS}
V_{DS}=30V
I_{DSS}=17.0mA
6.0mA
1.0mA
Drain Current, I_D – mA
Gate-to-Source Voltage, V_{GS} – V


$V_{GS(off)}$ – I_{DSS}
V_{DS}=30V
I_D=10μA
Cutoff Voltage, $V_{GS(off)}$ – V
Drain Current, I_{DSS} – mA


$|y_{fs}|$ – I_D
V_{DS}=30V
f=1kHz
I_{DSS}=1.0mA
6.0mA
17.0mA
Forward Transfer Admittance, $|y_{fs}|$ – mS
Drain Current, I_D – mA


$|y_{fs}|$ – I_{DSS}
V_{DS}=30V
f=1kHz
Forward Transfer Admittance, $|y_{fs}|$ – mS
Drain Current, I_{DSS} – mA


P_D – Ta
Power Dissipation, P_D – mW
Ambient Temperature, Ta – °C