T-39-09

SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR

2SK528

SILICON N CHANNEL MOS TYPE
(π-MOS)

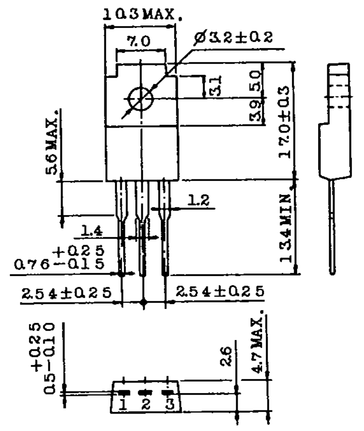
INDUSTRIAL APPLICATIONS

HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS.
SWITCHING REGULATOR, DC-DC CONVERTER AND MOTOR DRIVE APPLICATIONS.

FEATURES:

- High Breakdown Voltage : $V_{(BR)DSS}$=400V
- High Forward Transfer Admittance : $|Y_{fs}|$=1.2S(Typ.)
- Low Leakage Current : I_{GSS}=±100nA(Max.) @ V_{GS}=±20V
  I_{DSS}=1mA(Max.) @ V_{DS}=400V
- Enhancement-Mode : V_{th}=1.5~3.5V @ I_D=1mA
- TO-220 Isolation Package Which Requires Neither Insulating Bushing Nor Mica Insulator.

Unit in mm



1. GATE
2. DRAIN
3. SOURCE

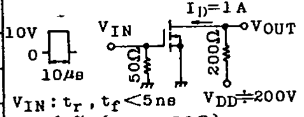
JEDEC	–
EIAJ	–
TOSHIBA	2-10L1B

Weight : 2.1g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSX}	400	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D	2	A
	Pulse	I_{DP}	4	
Drain Power Dissipation (Tc=25°C)		P_D	30	W
Channel Temperature		Tch	150	°C
Storage Temperature Range		Tstg	-55~150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	V_{GS}=±20V, V_{DS}=0	-	-	±100	nA
Drain Cut-off Current		I_{DSS}	V_{DS}=400V, V_{GS}=0	-	-	1.0	mA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	I_D=10mA, V_{GS}=0	400	-	-	V
Gate Threshold Voltage		V_{th}	V_{DS}=10V, I_D=1mA	1.5	-	3.5	V
Forward Transfer Admittance		$\|Y_{fs}\|$	V_{DS}=10V, I_D=1A	0.6	1.2	-	S
Drain-Source ON Resistance		$R_{DS(ON)}$	I_D=1A, V_{GS}=10V	-	1.6	2.2	Ω
Drain-Source ON Voltage		$V_{DS(ON)}$	I_D=4A, V_{GS}=10V	-	8.5	12	V
Input Capacitance		C_{iss}	V_{DS}=10V, V_{GS}=0, f=1MHz	-	410	600	pF
Reverse Transfer Capacitance		C_{rss}	V_{DS}=10V, V_{GS}=0, f=1MHz	-	35	70	pF
Output Capacitance		C_{oss}	V_{DS}=10V, V_{GS}=0, f=1MHz	-	115	170	pF
Switching Time	Rise Time	t_r	 V_{IN}: t_r, t_f<5ns V_{DD}≑200V D.U≦1% (Z_{OUT}=50Ω)	-	20	40	ns
	Turn-on Time	t_{on}		-	30	60	ns
	Fall Time	t_f		-	35	70	ns
	Turn-off Time	t_{off}		-	100	200	ns

THIS TRANSISTOR IS AN ELECTROSTATIC SENSITIVE DEVICE. PLEASE HANDLE WITH CAUTION.

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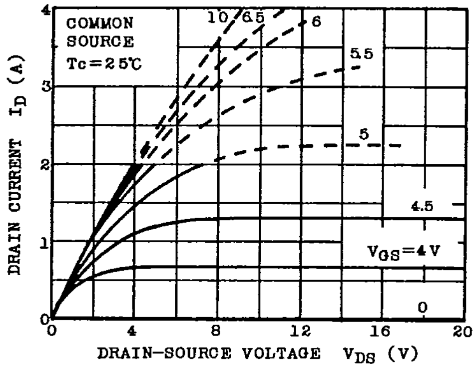
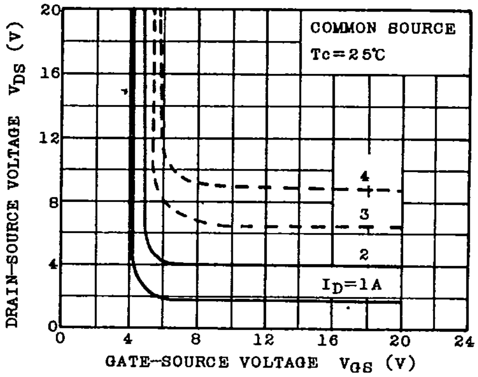
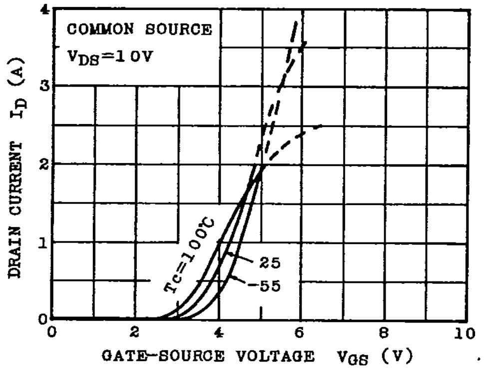
I_D — V_{DS}



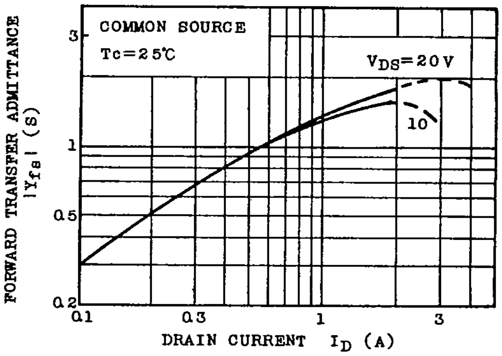
V_{DS} — V_{GS}



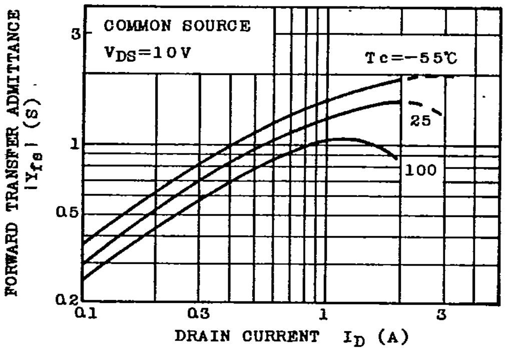
I_D — V_{GS}



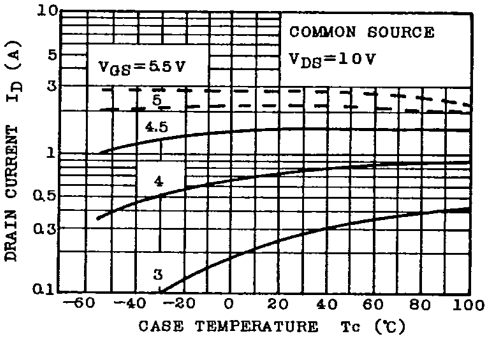
$|Y_{fs}|$ — I_D



$|Y_{fs}|$ — I_D



I_D — T_c



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