



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR

2SK423

SILICON N CHANNEL MOS TYPE

(π -MOS)

INDUSTRIAL APPLICATIONS

Unit in mm

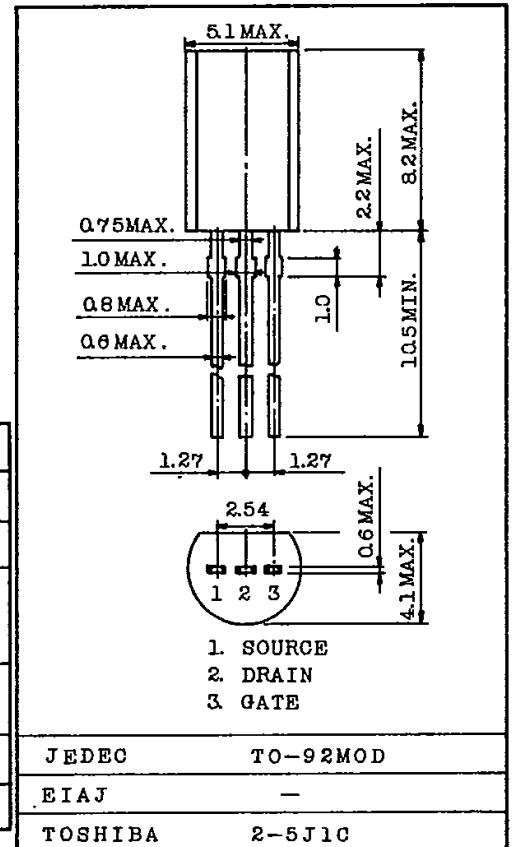
HIGH SPEED SWITCHING APPLICATIONS.
DC-DC CONVERTER AND INTERFACE APPLICATIONS.

FEATURES:

- Excellent Switching Times : $t_{off}=20\text{ns}(\text{Typ.})$
- High Forward Transfer Admittance : $|Y_{fs}|=150\text{mS}(\text{Typ.})$
@ $I_D=0.3\text{A}$
- Low Leakage Current : $I_{GSS}=\pm 100\text{nA}(\text{Max.})$ @ $V_{GS}=\pm 20\text{V}$
 $I_{DSS}=1\text{mA}(\text{Max.})$ @ $V_{DS}=100\text{V}$
- Enhancement-Mode : $V_{th}=1.5 \sim 3.5\text{V}$ @ $I_D=1\text{mA}$

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSX}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC	I_D	0.5
	Pulse	I_{DP}	0.8
Drain Power Dissipation ($T_a=25^\circ\text{C}$)	P_D	900	mW
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



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

Weight : 0.36g

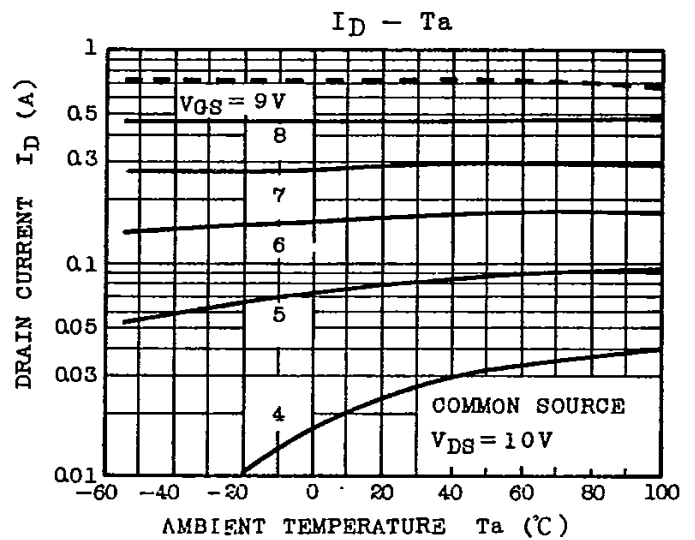
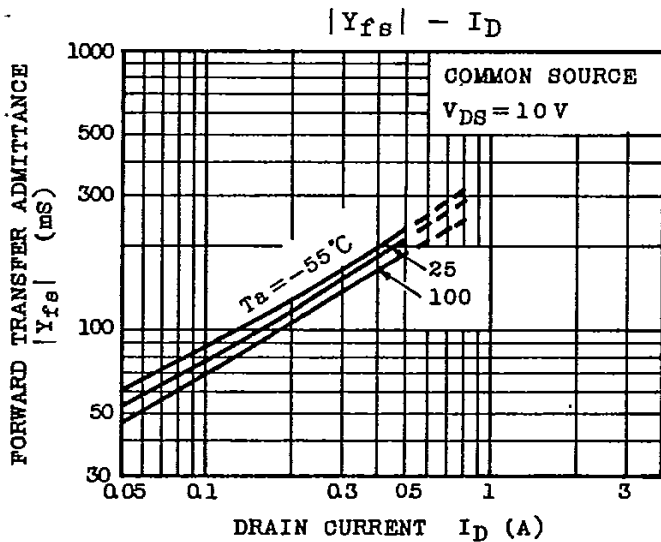
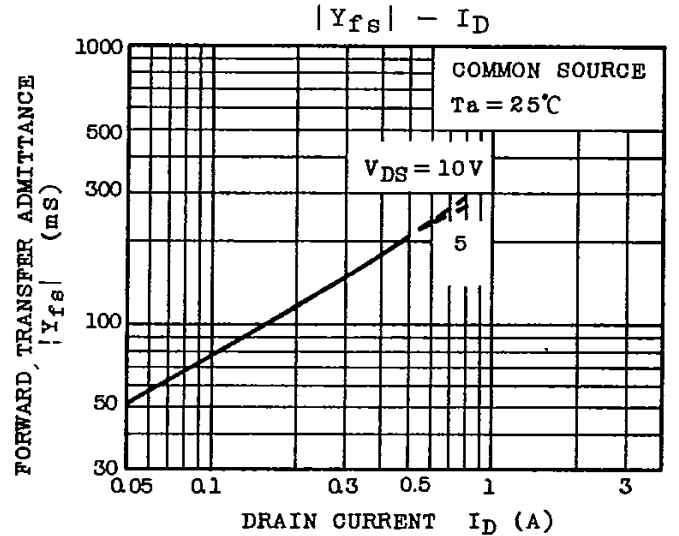
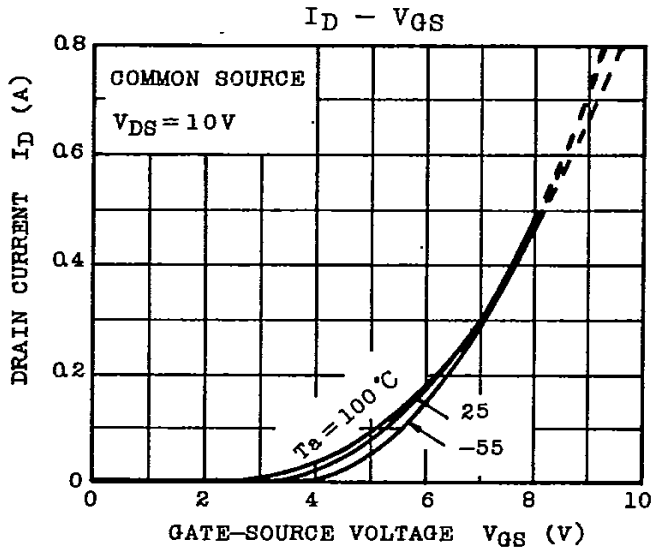
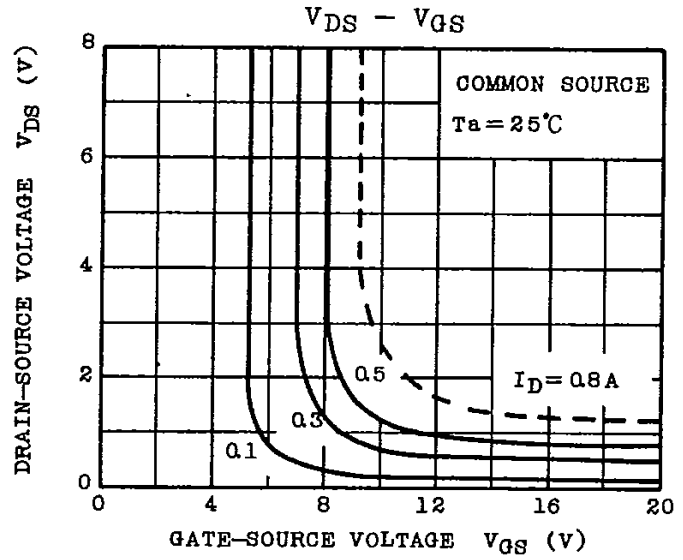
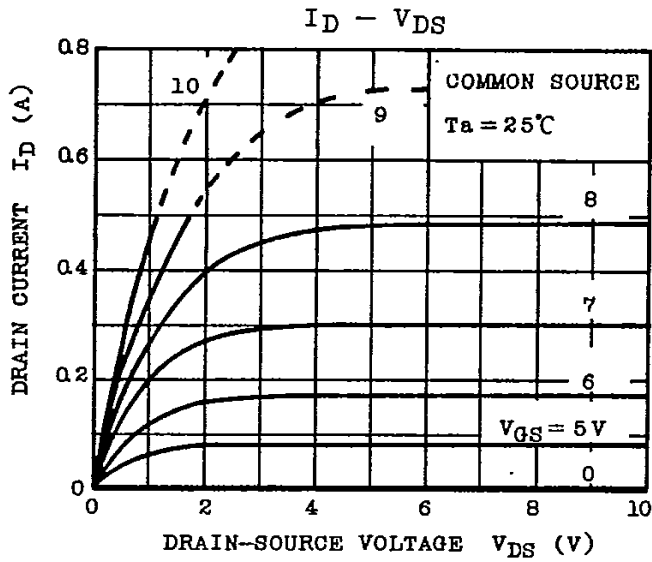
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0$	-	-	± 100	nA
Drain Cut-off Current	I_{DSS}	$V_{DS}=100\text{V}, V_{GS}=0$	-	-	1.0	mA
Drain-Source Breakdown Voltage	$V(BR)_{DSS}$	$I_D=10\text{mA}, V_{GS}=0$	100	-	-	V
Gate Threshold Voltage	V_{th}	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.5	-	3.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=0.3\text{A}$	50	150	-	μS
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D=0.3\text{A}, V_{GS}=10\text{V}$	-	2.4	4.5	Ω
Drain-Source ON Voltage	$V_{DS(ON)}$	$I_D=0.8\text{A}, V_{GS}=10\text{V}$	-	2.5	4.3	V
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$	-	40	70	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$	-	14	30	pF
Output Capacitance	C_{oss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$	-	50	80	pF
Switching Time	Rise Time	t_r	-	10	20	ns
	Turn-on Time	t_{on}	-	15	30	
	Fall Time	t_f	-	13	25	
	Turn-off Time	t_{off}	-	20	40	

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

TOSHIBA CORPORATION



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