SEMICONDUCTOR
TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR
2SK792
SILICON N CHANNEL MOS TYPE
(π-MOS)

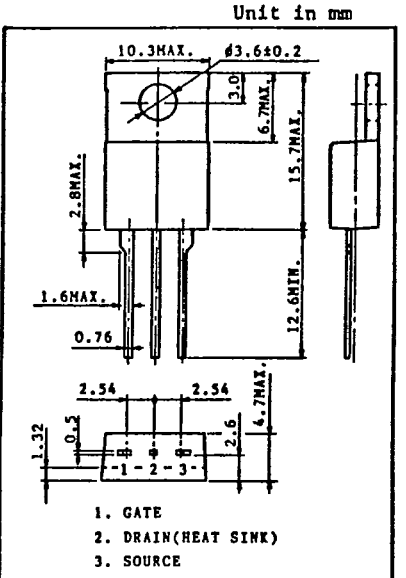
HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS.
SWITCHING REGULATOR AND MOTOR DRIVE APPLICATIONS.

INDUSTRIAL APPLICATIONS

FEATURES:

- High Breakdown Voltage : $V_{(BR)DSS}$=900V
- High Forward Transfer Admittance : $|Y_{fs}|$=1.0S(Typ.)
- Low Leakage Current : I_{GSS}=±100nA(Max.) @V_{GS}=±20V
  I_{DSS}=300μA(Max.) @V_{DS}=900V
- Enhancement-Mode : V_{th}=1.5~3.5V @I_D=1mA

Unit in mm

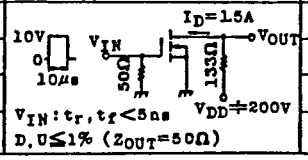


JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSX}	900	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D	3	A
	Pulse	I_{DP}	5	
Drain Power Dissipation (Tc=25°C)		P_D	100	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}=900V, V_{GS}=0	-	-	300	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	I_D=10mA, V_{GS}=0	900	-	-	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=1.5A	0.5	1.0	-	S
Drain-Source ON Resistance		$R_{DS(ON)}$	I_D=1.5A, V_{GS}=10V	-	3.3	4.5	Ω
Drain-Source ON Voltage		$V_{DS(ON)}$	I_D=3A, V_{GS}=10V	-	12	15	V
Input Capacitance		Ciss	V_{DS}=25V, V_{GS}=0, f=1MHz	-	800	1100	pF
Reverse Transfer Capacitance		Crss	V_{DS}=25V, V_{GS}=0, f=1MHz	-	70	120	pF
Output Capacitance		Coss	V_{DS}=25V, V_{GS}=0, f=1MHz	-	120	200	pF
Switching Time	Rise Time	tr		-	55	120	ns
	Turn-on Time	ton		-	70	165	
	Fall Time	tf		-	60	120	
	Turn-off Time	toff		-	280	550	

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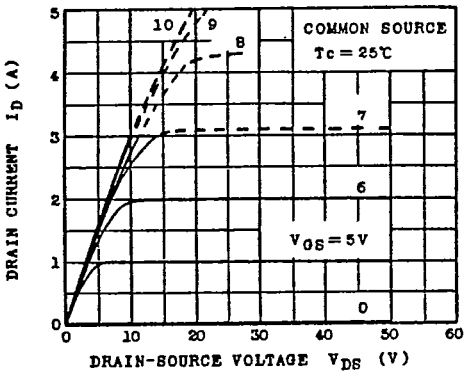
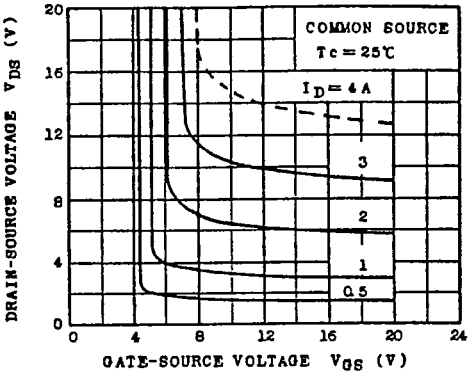
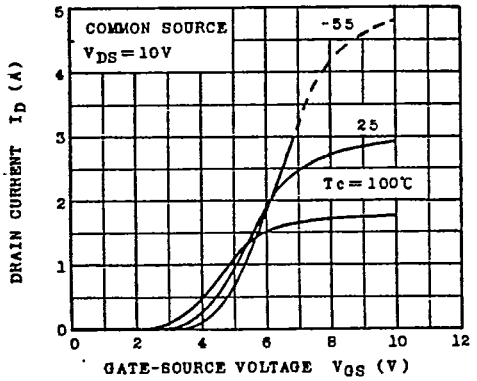
$I_D - V_{DS}$



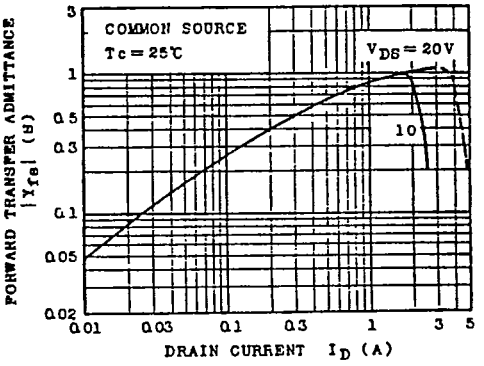
$V_{DS} - V_{GS}$



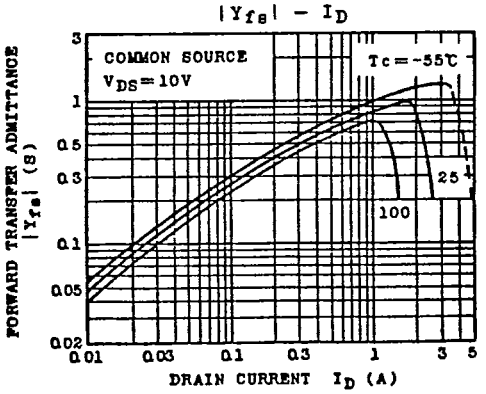
$I_D - V_{GS}$



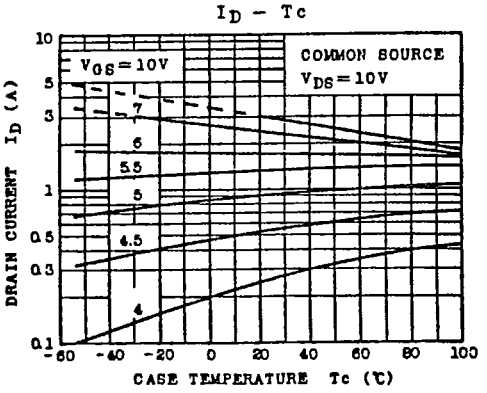
$|Y_{fs}| - I_D$



$|Y_{fs}| - I_D$



$I_D - Tc$



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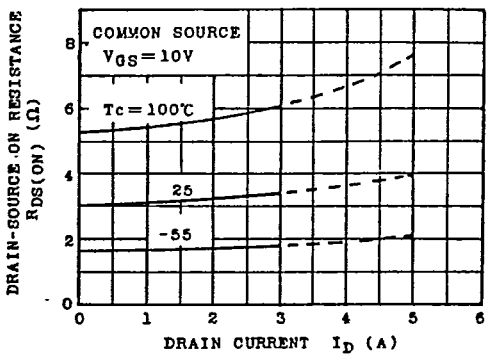
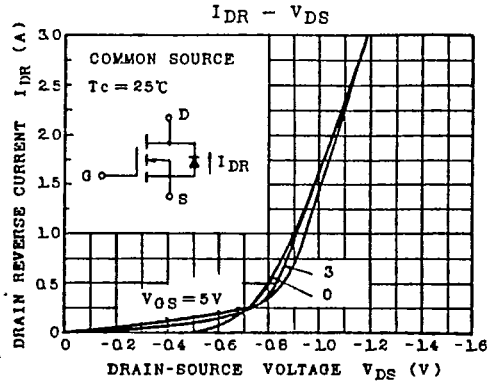
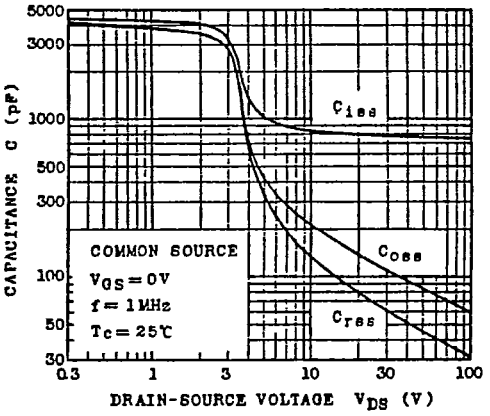
$R_{DS(ON)}$ – I_D



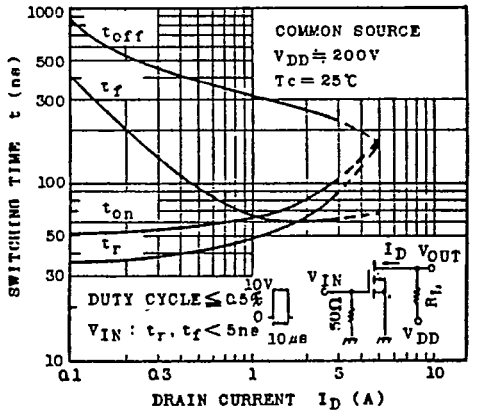
I_{DR} – V_{DS}



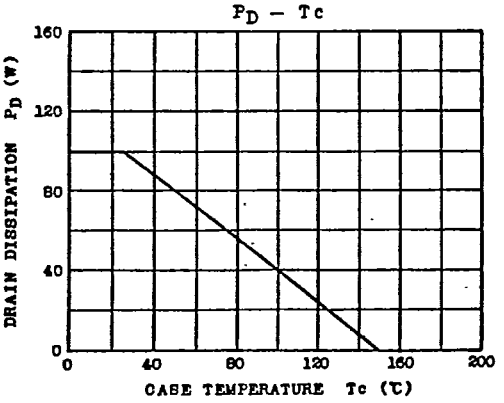
CAPACITANCE – V_{DS}



SWITCHING TIME – I_D



P_D – Tc



SAFE OPERATING AREA