

9097250 TOSHIBA (DISCRETE/OPTO)

99D 16662 DT-3943



SEMICONDUCTOR

## TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR  
2SK386SILICON N CHANNEL MOS TYPE  
( $\pi$ -MOS)

INDUSTRIAL APPLICATIONS

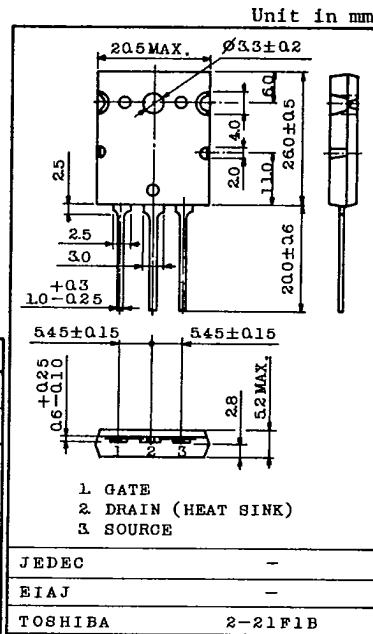
HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS.  
SWITCHING REGULATOR, DC-DC CONVERTER AND MOTOR  
DRIVE APPLICATIONS.

## FEATURES:

- High Breakdown Voltage :  $V_{(BR)DSS}=450V$
- High Forward Transfer Admittance :  $|Y_{fs}|=5S$  (Typ.)
- Low Leakage Current :  $I_{GSS}=\pm 100nA$  (Max.) @  $V_{GS}=\pm 20V$   
 $I_{DSS}=1mA$  (Max.) @  $V_{DS}=450V$
- Enhancement-Mode :  $V_{th}=1.5\sim 3.5V$  @  $I_D=1mA$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		$V_{DSX}$	450	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current	DC	$I_D$	10	A
	Pulse	$I_{DP}$	15	
Drain Power Dissipation ( $T_c=25^\circ C$ )		$P_D$	120	W
Channel Temperature		$T_{ch}$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	$-55\sim 150$	$^\circ C$

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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0$	-	-	$\pm 100$	nA
Drain Cut-off Current		$I_{DSS}$	$V_{DS}=450V, V_{GS}=0$	-	-	1.0	mA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D=10mA, V_{GS}=0$	450	-	-	V
Gate Threshold Voltage		$V_{th}$	$V_{DS}=10V, I_D=1mA$	1.5	-	3.5	V
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS}=10V, I_D=5A$	3.0	5.0	-	S
Drain-Source ON Resistance		$R_{DS(ON)}$	$I_D=5A, V_{GS}=10V$	-	0.5	0.7	$\Omega$
Drain-Source ON Voltage		$V_{DS(ON)}$	$I_D=10A, V_{GS}=10V$	-	5.5	8	V
Input Capacitance		$C_{iss}$	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	1500	2000	pF
Reverse Transfer Capacitance		$C_{rss}$	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	140	300	pF
Output Capacitance		$C_{oss}$	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	400	600	pF
Switching Time	Rise Time	$t_r$		-	50	100	ns
	Turn-on Time	$t_{on}$		-	80	150	ns
	Fall Time	$t_f$		-	80	150	ns
	Turn-off Time	$t_{off}$		-	350	700	ns

TOSHIBA CORPORATION

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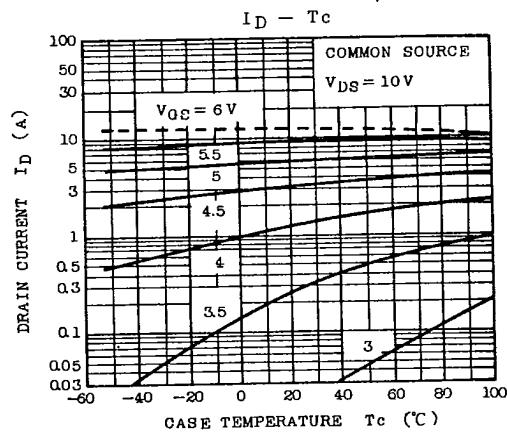
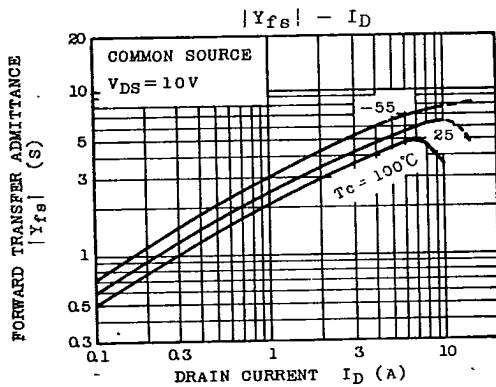
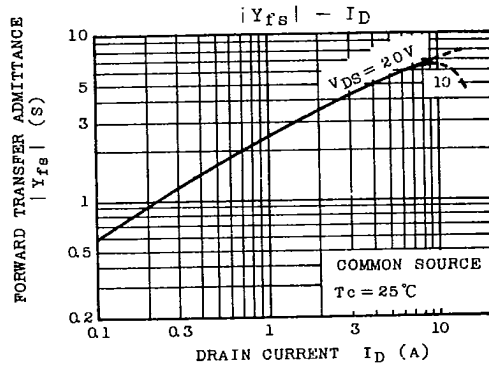
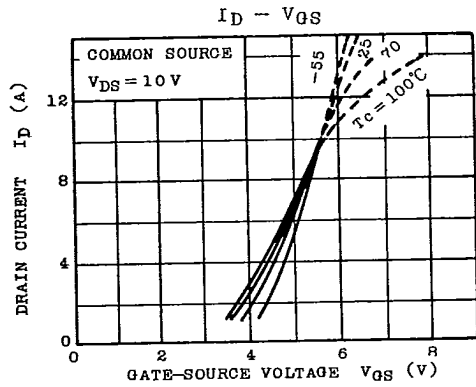
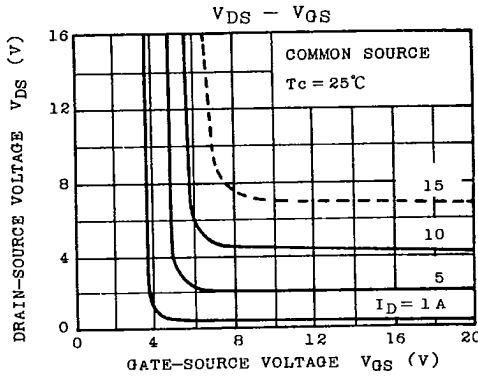
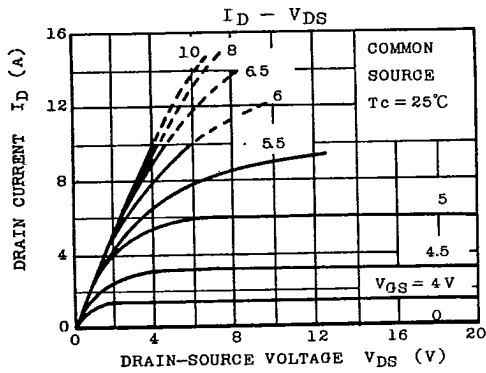
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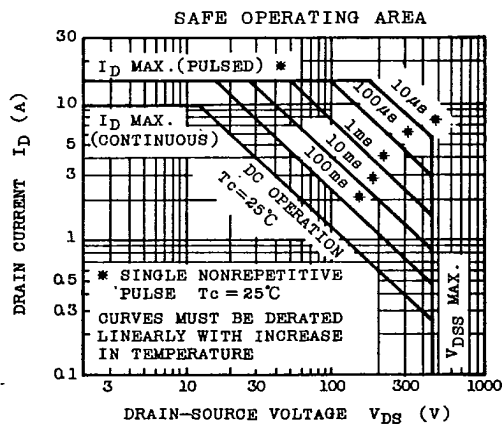
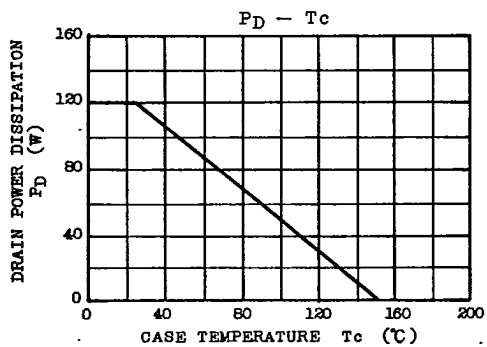
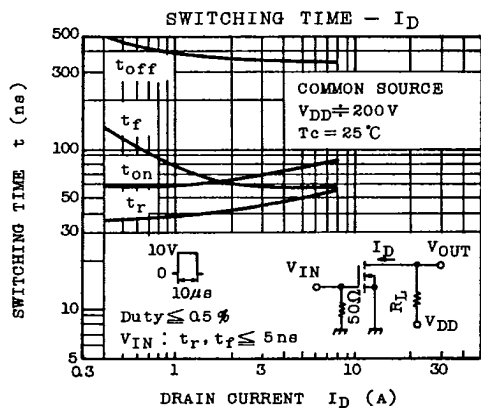
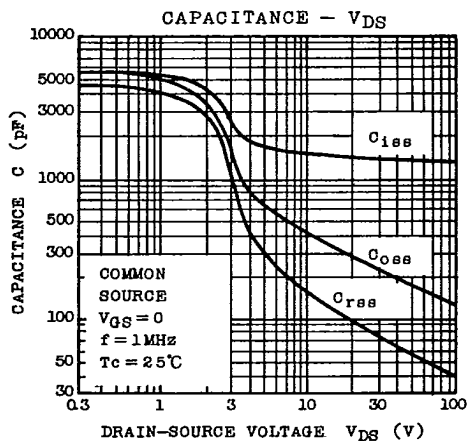
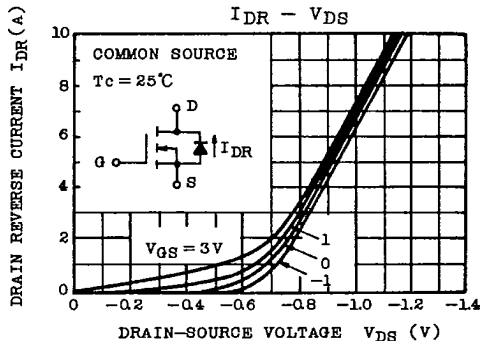
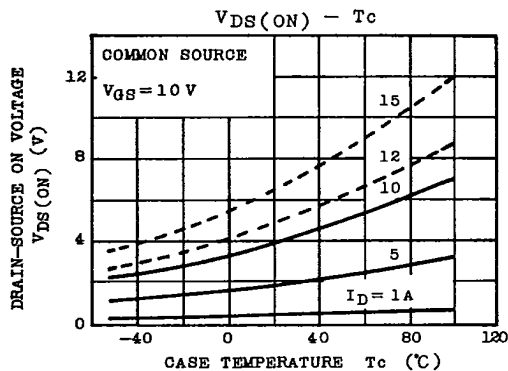
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