

TOSHIBA SEMICONDUCTOR TECHNICAL DATA

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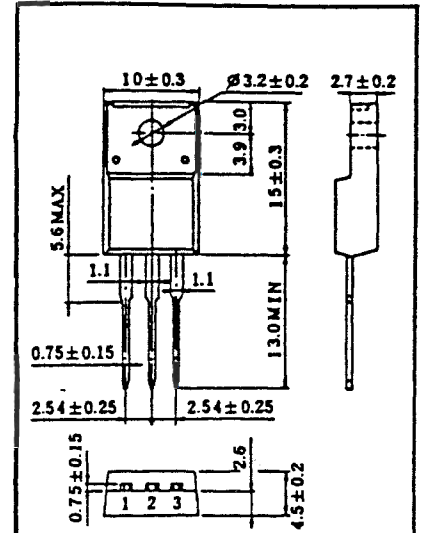
TOSHIBA FIELD EFFECT TRANSISTOR
2SK2352
 SILICON N CHANNEL MOS TYPE
 (π -MOS π)

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

INDUSTRIAL APPLICATIONS
 UNIT in mm

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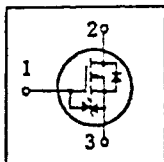
- Low Drain-Source ON Resistance : $R_{DS(ON)} = 1.06 \Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 6 S$ (Typ.)
- Low Leakage Current : $I_{DSS} = 100 \mu A$ (Max.) ($V_{DS} = 600V$)
- Enhancement-Mode : $V_{th} = 2.0 \sim 4.0V$ ($V_{DS} = 10V, I_D = 1mA$)



1. GATE
2. DRAIN
3. SOURCE

JEDEC	—
ELAJ	SC-67
TOSHIBA	2-10R1B

Weight : 1.9g



MAXIMUM RATINGS (Ta= 25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	600	V
Drain-Gate Voltage (RGS=20K Ω)	V_{DGR}	600	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current	DC	I_D	6 A
	Pulse	I_{DP}	24 A
Drain Power Dissipation (Tc=25°C)	P_D	45	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel To Case	$R_{th(ch-c)}$	2.77	°C/W
Thermal Resistance, Channel to Ambient	$R_{th(ch-a)}$	83.3	°C/W

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

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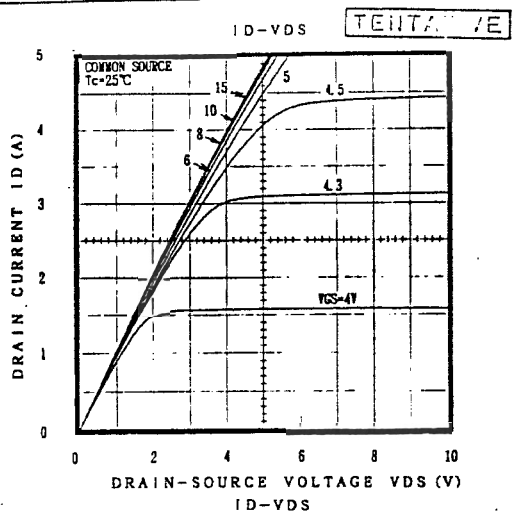
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I _{GSS}	V _{GS} = ±25V, V _{DS} = 0V	-	-	±10	μA	
Gate-Source Breakdown Voltage	V (BR)GSS	I _G = ±100 μA, V _{DS} = 0V	±30	-	-	V	
Drain Cut-off Current	I _{DSS}	V _{DS} = 600V, V _{GS} = 0V	-	-	100	μA	
Drain-Source Breakdown Voltage	V (BR)DSS	I _D = 10mA, V _{GS} = 0V	600	-	-	V	
Gate Threshold Voltage	V _{th}	V _{DS} = 10V, I _D = 1mA	2.0	-	4.0	V	
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 3 A	-	1.0	1.25	Ω	
Forward Transfer Admittance	Y _{fs}	V _{DS} = 10V, I _D = 3 A	3.0	5.5	-	S	
Input Capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0V f= 1MHz	-	1250	-	pF	
Reverse Transfer Capacitance	C _{rss}		-	75	-		
Output Capacitance	C _{oss}		-	320	-		
Switching Time	Rise Time	t _r		-	14	-	nS
	Turn-on Time	t _{on}		-	35	-	
	Fall Time	t _f		-	12	-	
	Turn-off Time	t _{off}		-	65	-	
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	V _{DD} =400V, V _{GS} = 10V I _D = 6A	-	30	-	nC	
Gate-Source Charge	Q _{gs}		-	18	-		
Gate-Drain ('Miller') Charge	Q _{gd}		-	12	-		

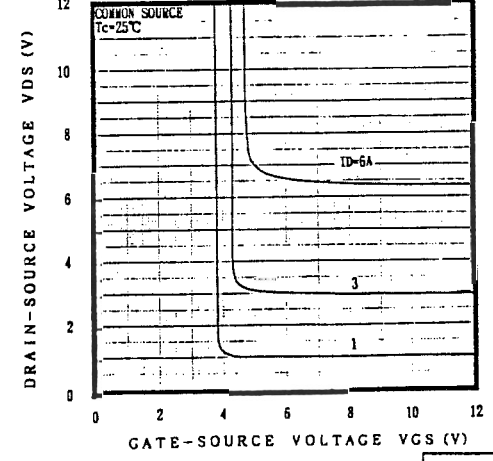
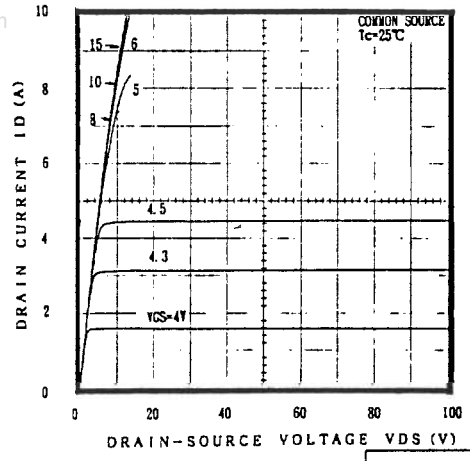
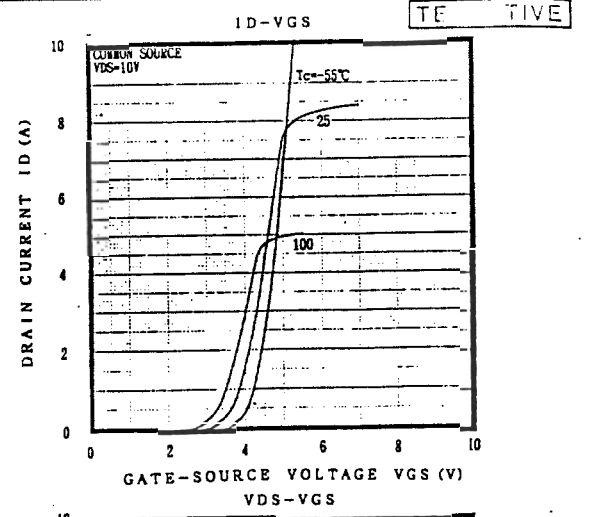
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I _{DR}	-	-	-	6	A
Pulse Drain Reverse Current	I _{DRP}	-	-	-	24	A
Diode Forward Voltage	V _{DSF}	I _{DR} = 6 A, V _{GS} = 0V	-	-	1.7	V
Reverse Recovery Time	t _{rr}	I _{DR} = 6 A, V _{GS} = 0V dI _{DR} /dt= 100A/μS	-	340	-	nS
Reverse Recovery Charge	Q _{rr}		-	2.3	-	μC

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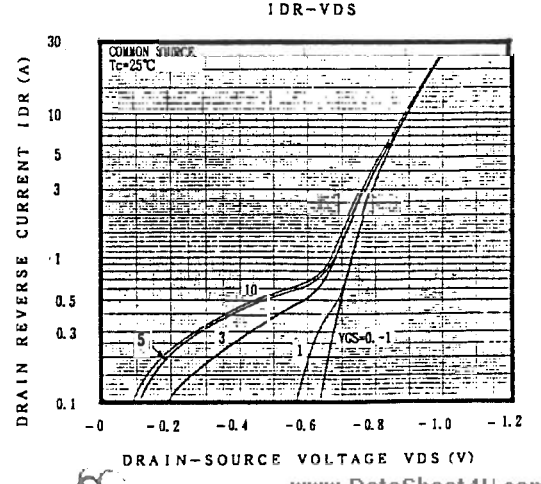
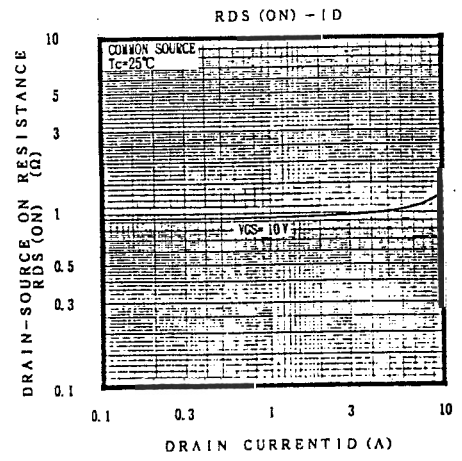
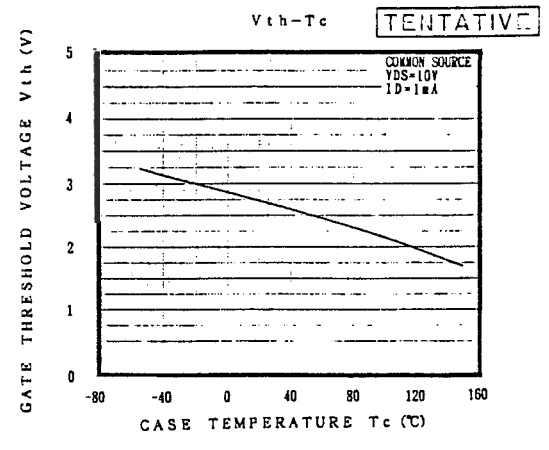
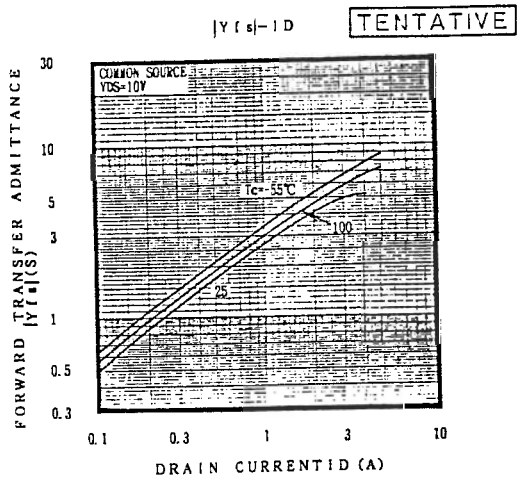


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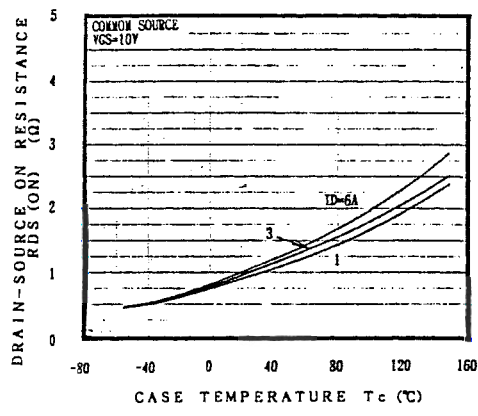
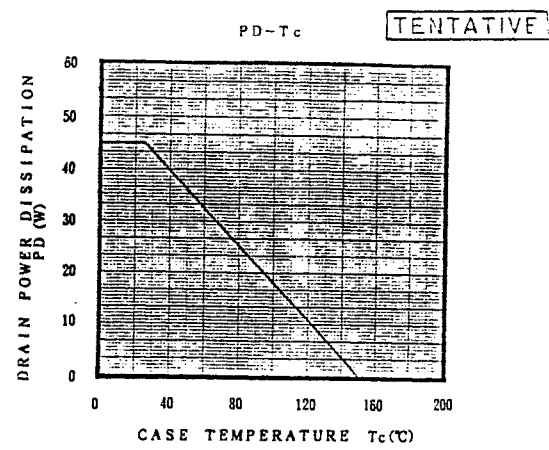
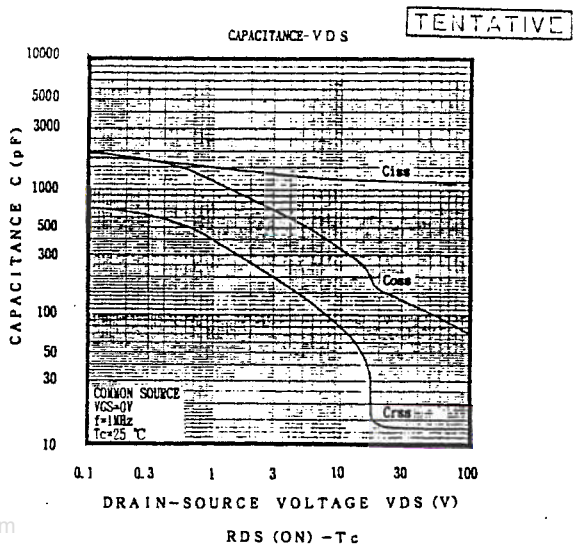
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