

9097250 TOSHIBA (DISCRETE/OPTO)

99D 16745 DT-39-13
TOSHIBA FIELD EFFECT TRANSISTOR**TOSHIBA** SEMICONDUCTOR
TECHNICAL DATA

2 S K 7 8 8

SILICON N CHANNEL MOS TYPE
(π -MOS)

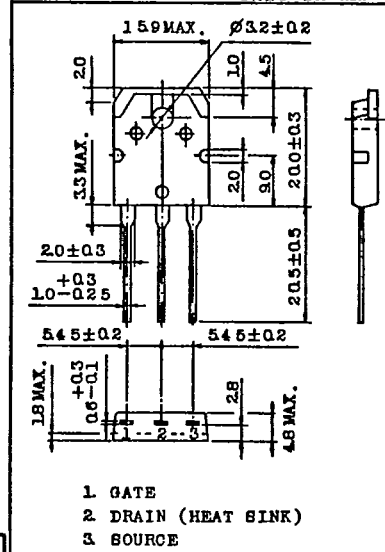
INDUSTRIAL APPLICATIONS

Unit in mm

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

FEATURES:

- Low Drain-Source ON Resistance : $R_{DS(ON)} = 0.38\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}| = 8.0S$ (Typ.)
- Low Leakage Current : $I_{GSS} = 100nA$ (Max.) @ $V_{GS} = \pm 20V$
 $I_{DSS} = 300nA$ (Max.) @ $V_{DS} = 500V$
- Enhancement-Mode : $V_{th} = 2.0 \sim 4.0S$ @ $V_{DS} = 10V, I_D = 1mA$



JEDEC

EIAJ

TOSHIBA

2-16C1B

Weight : 4.6g

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSX}	500	V
Drain-Gate Voltage ($R_{GS} = 20k\Omega$)		V_{DGR}	500	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	DC	I_D	13	A
	Pulse	I_{DP}	52	
Drain Power Dissipation ($T_c = 25^\circ C$)		P_D	150	W
Channel Temperature		T_{ch}	150	$^\circ C$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ C$

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	0.83	$^\circ C/W$
Thermal Resistance, Junction to Ambient	$R_{th(j-a)}$	50	$^\circ C/W$
Maximum Lead Temperature for Soldering Purposes (1.6mm from case for 10 seconds)	T_L	300	$^\circ C$

9097250 TOSHIBA (DISCRETE/OPTO)

99D 16746 DT-39-13

TOSHIBA SEMICONDUCTOR

TECHNICAL DATA

2 S K 7 8 8

ELECTRICAL CHARACTERISTICS (Ta=25°C)

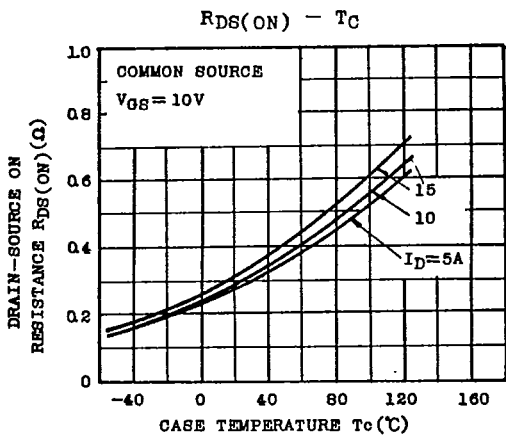
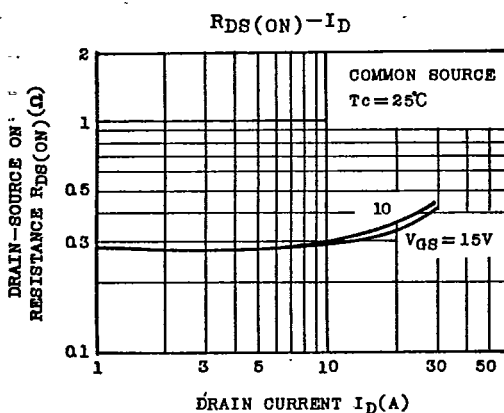
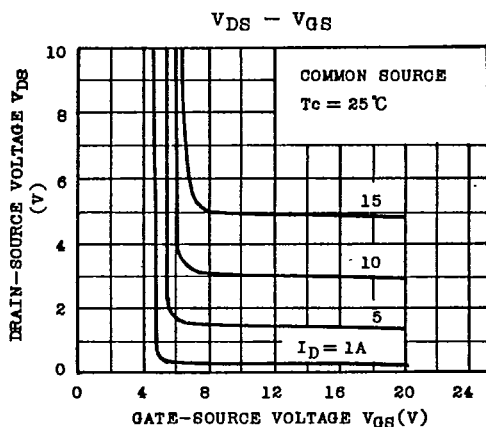
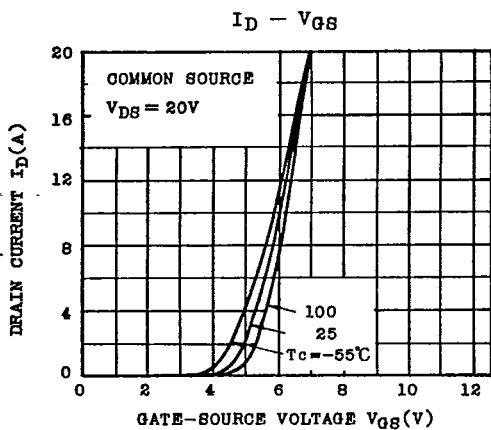
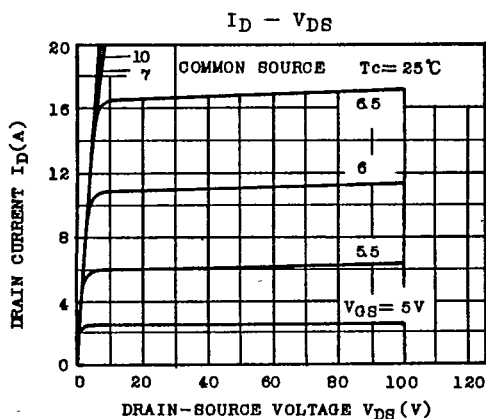
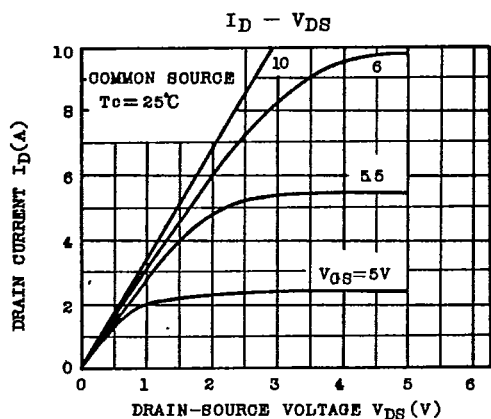
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		IGSS	VGS=±20V, VDS=0V	-	-	±100	nA
Drain Cut-off Current		IDSS	VDS=500V, VGS=0V	-	-	300	µA
Drain-Source Breakdown Voltage		V(BR)DSS	ID=10mA, VGS=0V	500	-	-	V
Gate Threshold Voltage		Vth	VDS=10V, ID=1mA	2.0	-	4.0	V
Forward Transfer Admittance		Yfs	VDS=10V, ID=7A	6.0	8.0	-	S
Drain-Source ON Resistance		RDS(ON)	ID=7A, VGS=10V	-	0.38	0.50	Ω
Input Capacitance		Ciss	VDS=10V, VGS=0V, f=1MHz	-	2300	3600	pF
Reverse Transfer Capacitance		Crss		-	570	680	
Output Capacitance		Coss		-	1000	1400	
Switching Time	Rise Time	tr		-	70	140	ns
	Turn-on Time	ton		-	100	200	
	Fall Time	tf		-	75	150	
	Turn-off Time	toff		-	350	700	
Total Gate charge (Gate-Source Plus Gate-Drain)		Qg	ID=15A, VGS=10V VDD=400V	-	87	110	nC
Gate-Source Charge		Qgs		-	35	-	
Gate-Drain ("Miller") Charge		Qgd		-	52	-	

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

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	IDR	--	-	-	13	A
Rulse Drain Reverse Current	IDRP	--	-	-	52	A
Diode Foward Voltage	VDSF	IDR=13A, VGS=0V	-	-	1.9	V
Reverse Recovery Time	trr	IDR=13A	-	400	-	ns
Reverse Recovered Charge	Qrr	dIDR/dt=100A/us	-	4.0	-	µC

TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

2SK788

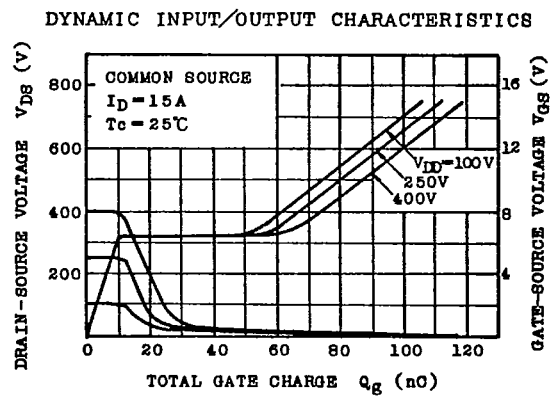
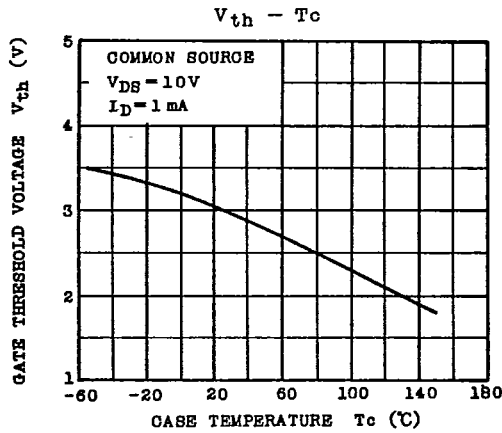
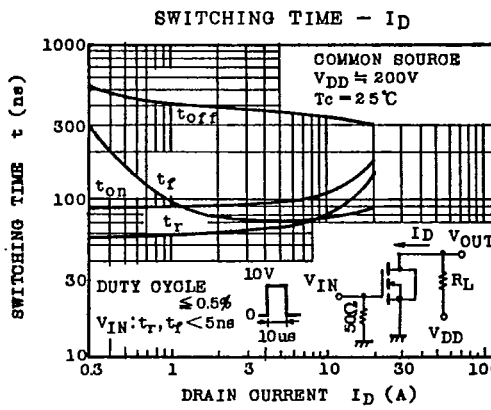
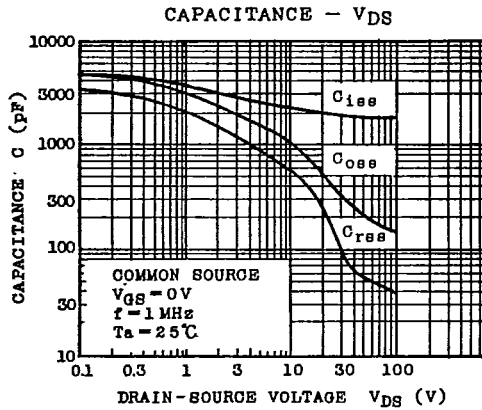
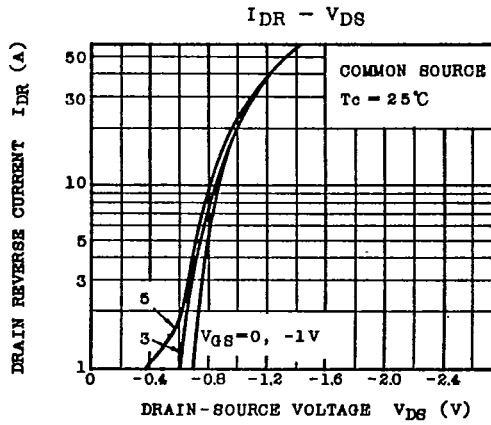
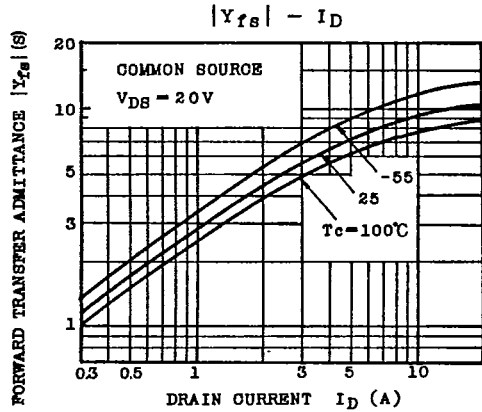


9097250 TOSHIBA (DISCRETE/OPTO)

99D 16748 DT-39-13

TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

2SK788



TOSHIBA SEMICONDUCTOR
TECHNICAL DATA

2SK788

