

9097250 TOSHIBA (DISCRETE/OPTO)

99D 16902 DT-39-13



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR

YTF841

SILICON N CHANNEL MOS TYPE

(π -MOS II)

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

FEATURES:

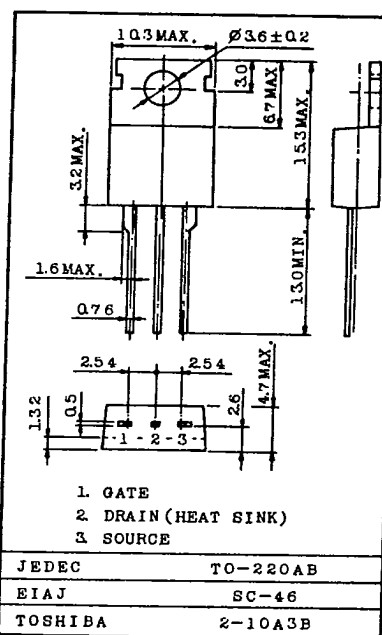
- Low Drain-Source ON Resistance : $R_{DS(ON)}=0.8\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}|=6.5S$ (Typ.)
- Low Leakage Current : $I_{GSS}=\pm 100nA$ (Max.) @ $V_{GS}=\pm 20V$
 $I_{DSS}=250\mu A$ (Max.) @ $V_{DS}=450V$
- Enhancement-Mode : $V_{th}=2.0\sim 4.0V$ @ $V_{DS}=V_{GS}, I_D=250\mu A$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSX}	450	V
Drain-Gate Voltage ($R_{GS}=1M\Omega$)	V_{DGR}	450	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC($T_c=25^\circ C$)	I_D	8
	DC($T_c=100^\circ C$)	I_D	5
	Pulse	I_{DP}	32
Inductive Current (Clamped)	I_{LP}	32	A
Drain Power Dissipation ($T_c=25^\circ C$)	P_D	125	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55\sim 150$	$^\circ C$

INDUSTRIAL APPLICATIONS

Unit in mm



Weight : 1.9g

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX.	UNIT
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	1.0	$^\circ C/W$
Thermal Resistance, Junction to Ambient	$R_{th(j-a)}$	80	$^\circ C/W$
Maximum Lead Temperature for Soldering Purposes (1.6mm from case for 10 seconds)	T_L	300	$^\circ C$

TOSHIBA CORPORATION

GT1A2

- 271 -

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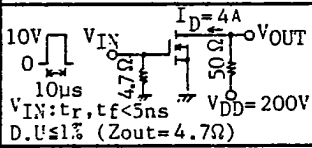


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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	IGSS	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Drain Cut-off Current	IDSS	V _{DS} =450V, V _{GS} =0V, Tc=25°C	-	-	250	μA
Drain-Source Breakdown Voltage	V(BR)DSS	ID=250μA, V _{GS} =0V	450	-	-	V
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , ID=250μA	2.0	-	4.0	V
Forward Transfer Admittance	Yfs	V _{DS} =10V, ID=4A	4	6.5	-	S
On-State Drain Current	ID(ON)	V _{DS} =10V, V _{GS} =10V	8	-	-	A
Drain-Source ON Resistance	RDS(ON)	ID=4A, V _{GS} =10V	-	0.8	0.85	Ω
Drain-Source ON Voltage	VDS(ON)	ID=8A, V _{GS} =10V	-	7.0	8.6	V
Input Capacitance	Ciss	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	1200	1600	pF
Reverse Transfer Capacitance	Crss		-	60	150	pF
Output Capacitance	Coss		-	250	350	pF
Switching Time	Rise Time		-	7	15	ns
	Turn-on Time		-	25	50	ns
	Fall Time		-	15	30	ns
	Turn-off Time		-	60	120	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Qg	V _{GS} =10V, ID=10A,	-	42	60	nC
Gate Source Charge	Qgs	V _{DS} =360V	-	20	-	nC
Gate-Drain ("Miller") Charge	Qgd		-	22	-	nC

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Source Current	I _S	—	-	-	8	A
Pulse Source Current	I _{SP}	—	-	-	32	A
Diode Forward Voltage	V _{SD}	I _S =8A, V _{GS} =0V, Tc=25°C	-	-	2.0	V
Reverse Recovery Time	t _{rr}	Tj=150°C, I _F =8A,	-	1100	-	ns
Reverse Recovered Charge	Q _{rr}	dI _F /dt=100A/μs	-	6.4	-	μC

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- 272 -