TOSHIBA FIELD EFFECT TRANSISTOR SILICON P CHANNEL MOS TYPE(U−MOSII)

TENTATIVE

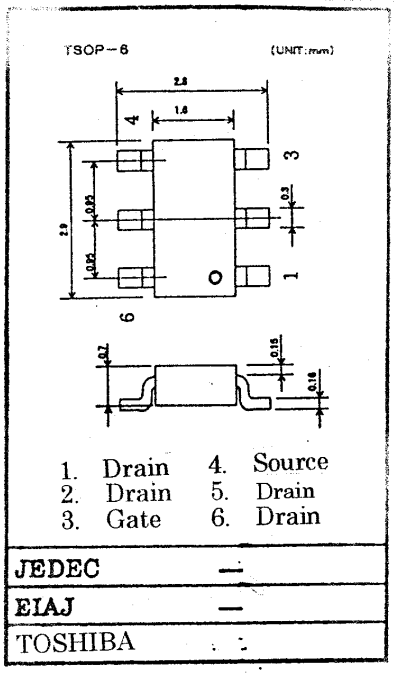
TPC6102

NOTE BOOK PC
PORTABLE EQUIPMENTS APPLICATIONS

INDUSTRIAL APPLICATIONS

UNIT:mm

- Low Drain - Source ON Resistance : $R_{DS(ON)}$ = mΩ(Typ.)
- High Forward Transfer Admittance : $|Y_{fs}|$ = S(Typ.)
- Low Leakage Current : I_{DSS} = -10μA(Max.) (V_{DS} = -30V)
- Enhancement - Model : V_{th} = -0.8 ~ -2.0V (V_{DS} = -10V, I_D = -1mA)



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TOSHIBA	

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain - Source Voltage		V_{DSS}	-30	V
Drain - Gate Voltage (R_{GS}=20kΩ)		V_{DGR}	-30	V
Gate - Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D	-4.5	A
	Pulse	I_{DP}	-18	A
Drain Power Dissipation(Ta=25℃) *		P_D	2.0	W
Channel Temperature		T_{ch}	150	℃
Storage Temperature Range		T_{stg}	−55~150	℃

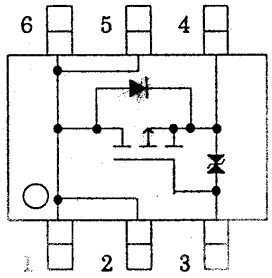
THERMAL CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MAX.	UNIT
Thermal Resistance,Chanel to Ambient*	$R_{th(ch-a)}$	62.5	℃/W

Note; *Drive operation ; Mount on glass epoxy board ($1inch^2$X0.8t) (t=5s)

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

CIRCUIT CONFIGURATION



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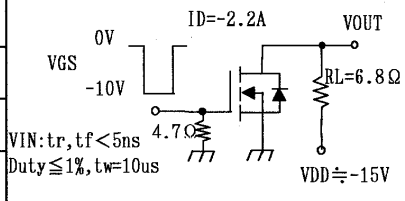
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTICS		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS}=\pm16V$, $V_{DS}=0V$	–	–	±10	μA
Drain Cut-off Current		I_{DSS}	$V_{DS}=-30V$, $V_{GS}=0V$	–	–	-10	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D=-10mA$, $V_{GS}=0V$	-30	–	–	V
		$V_{(BR)DSX}$	$I_D=-10mA$, $V_{GS}=20V$	-15	–	–	V
Gate Threshold Voltage		V_{th}	$V_{DS}=-10V$, $I_D=-1mA$	-0.8	–	-2.0	V
Drain-Source ON Resistance		$R_{DS(ON)}$	$V_{GS}=-4.5V$, $I_D=-2.2A$	–	78	100	mΩ
			$V_{GS}=-10V$, $I_D=-2.2A$	–	48	60	
Forward Transfer Admittance		$\|Y_{fs}\|$	$V_{DS}=-10V$, $I_D=-2.2A$	3.0	6.0	–	S
Input Capacitance		C_{iss}	$V_{DS}=-10V$, $V_{GS}=0V$ f=1MHz	–	500	–	pF
Reverse Transfer Capacitance		C_{rss}		–	110	–	
Output Capacitance		C_{oss}		–	150	–	
Switching Time	Rise Time	t_r		–		–	ns
	Turn-on Time	t_{on}		–		–	
	Fall Time	t_f		–		–	
	Turn-off Time	t_{off}		–		–	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	$V_{DD}\fallingdotseq-24V$, $V_{GS}=-10V$ $I_D=-4.5A$	–	11	–	nC
Gate-Source Charge		Q_{gs}		–	8.5	–	
Gate-Drain("Miller")Charge		Q_{gd}		–	2.5	–	

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

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	–	–	–	-4.5	A
Pulse Drain Reverse Current	I_{DRP}	–	–	–	-18	A
Diode Forward Voltage	V_{DSF}	$I_{DR}=-4.5A$, $V_{GS}=0V$	–	–	1.2	V