

TENTATIVE**TPC6102**

NOTE BOOK PC

PORTABLE EQUIPMENTS APPLICATIONS

- Low Drain - Source ON Resistance : $R_{DS(ON)} = \quad \text{m}\Omega (\text{Typ.})$
- High Forward Transfer Admittance : $|Y_{fs}| = \quad \text{S} (\text{Typ.})$
- Low Leakage Current : $I_{DSS} = -10\mu\text{A} (\text{Max.}) (V_{DS} = -30\text{V})$
- Enhancement - Model : $V_{th} = -0.8 \sim -2.0\text{V} (V_{DS} = -10\text{V}, I_D = -1\text{mA})$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain - Source Voltage		V_{DSS}	-30	V
Drain - Gate Voltage ($R_{GS} = 20\text{k}\Omega$)		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($T_a = 25^\circ\text{C}$) *		P_D	2.0	W
Channel Temperature		T_{ch}	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

THERMAL CHARACTERISTICS

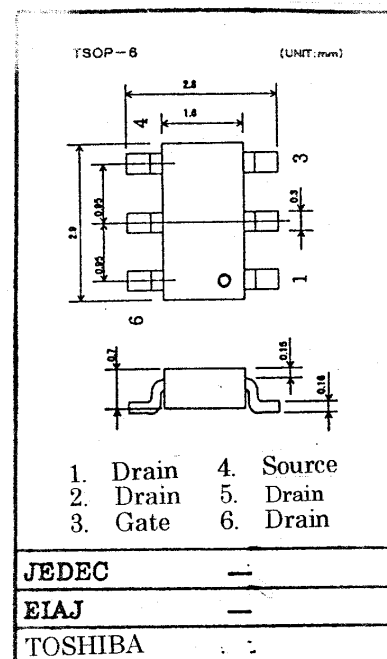
CHARACTERISTICS	SYMBOL	MAX.	UNIT
Thermal Resistance, Channel to Ambient*	$R_{th(ch-a)}$	62.5	$^\circ\text{C}/\text{W}$

Note; *Drive operation ; Mount on glass epoxy board
(1inch²X0.8t) ($t=5\text{s}$)

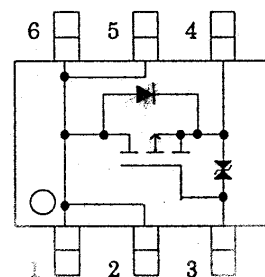
THIS TRANSISTOR IS AN ELECTROSTATIC SENSITIVE DEVICE.
PLEASE HANDLE WITH CAUTION.

INDUSTRIAL APPLICATIONS

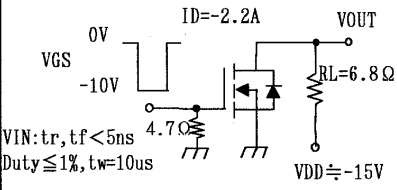
UNIT:mm



CIRCUIT CONFIGURATION



ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTICS		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS}=\pm 16V, V_{DS}=0V$	—	—	± 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	$V_{DD}\div -24V, V_{GS}=-10V$ $I_D=-4.5A$	—	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