

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

2SA1972

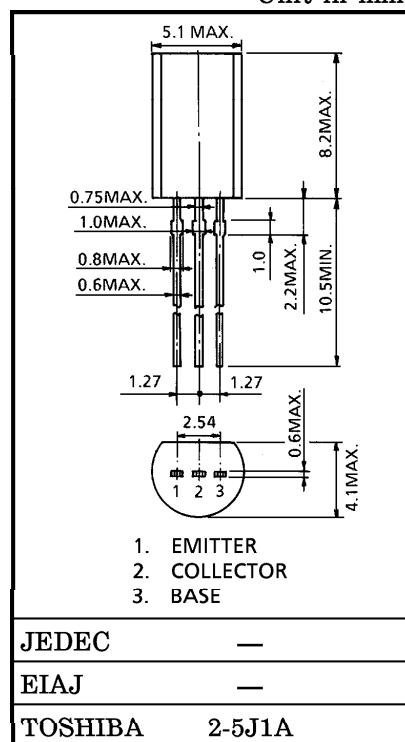
HIGH VOLTAGE SWITCHING APPLICATIONS

Unit in mm

- High Voltage : $V_{CE} = -400V$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-400	V
Collector-Emitter Voltage		V_{CEO}	-400	V
Emitter-Base Voltage		V_{EBO}	-7	V
Collector Current	DC	I_C	-0.5	A
	Pulse	I_{CP}	-1	
Base Current		I_B	-0.25	A
Collector Power Dissipation		P_C	900	mW
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -400V, I_E = 0$	—	—	-10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -7V, I_C = 0$	—	—	-1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$	-400	—	—	V
DC Current Gain	$h_{FE}(1)$		$V_{CE} = -5V, I_C = -20mA$	140	—	450	
	$h_{FE}(2)$		$V_{CE} = -5V, I_C = -100mA$	140	—	400	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$	—	-0.4	-1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = -100mA, I_B = -10mA$	—	-0.76	-0.9	V
Transition Frequency		f_T	$V_{CE} = -5V, I_C = -50mA$	—	35	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	18	—	pF
Switching Time	Turn-on Time	t_{on}	$I_{B1} = 10mA, I_{B2} = 20mA$ DUTY CYCLE $\leq 1\%$	—	0.2	—	μs
	Storage Time	t_{stg}		—	2.3	—	
	Fall Time	t_f		—	0.2	—	

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