

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

# 2SA1972

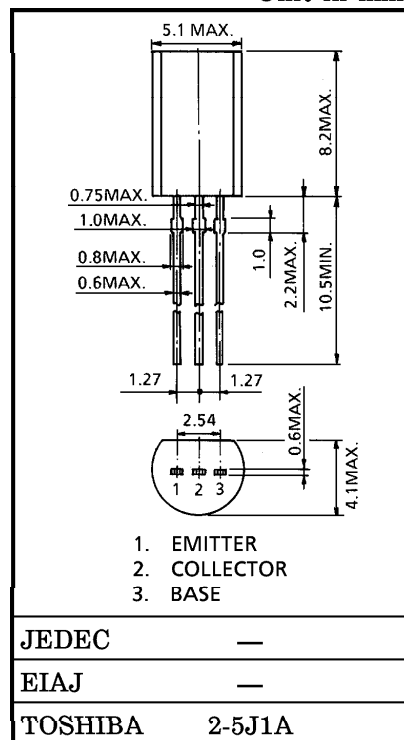
HIGH VOLTAGE SWITCHING APPLICATIONS

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	$\mu A$	
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -7V, I_C = 0$	—	—	-1	$\mu A$	
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	$t_{on}$					$\mu S$
	Storage Time	$t_{stg}$	—	2.3	—		
	Fall Time	$t_f$	—	0.2	—		

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