

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC3710A

**HIGH CURRENT SWITCHING APPLICATIONS**

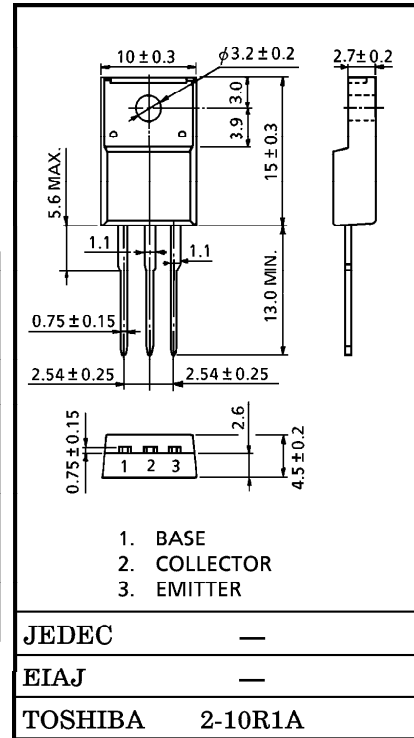
- Low Collector Saturation Voltage :  $V_{CE(sat)} = 0.4V$  (Max.)
- High Speed Switching Time :  $t_{stg} = 1.0\mu s$  (Typ.)
- Complementary to 2SA1452A

**INDUSTRIAL APPLICATIONS**

Unit in mm

**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	12	A
Base Current	$I_B$	2	A
Collector Power Dissipation (Tc = 25°C)	$P_C$	30	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT				
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 80V, I_E = 0$	—	—	10	$\mu A$				
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 6V, I_C = 0$	—	—	10	$\mu A$				
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$	80	—	—	V				
DC Current Gain	$h_{FE(1)}$ (Note)	$V_{CE} = 1V, I_C = 1A$	70	—	240					
	$h_{FE(2)}$	$V_{CE} = 1V, I_C = 6A$	40	—	—					
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 6A, I_B = 0.3A$	—	0.2	0.4	V				
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 6A, I_B = 0.3A$	—	0.9	1.2	V				
Transition Frequency	$f_T$	$V_{CE} = 5V, I_C = 1A$	—	80	—	MHz				
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	220	—	pF				
Switching Time	Turn-on Time	$t_{on}$					—	0.2	—	$\mu s$
	Storage Time	$t_{stg}$					—	1.0	—	
	Fall Time	$t_f$					$I_{B1} = -I_{B2} = 0.3A,$ DUTY CYCLE $\leq 1\%$	—	0.2	

(Note)  $h_{FE(1)}$  Classification    O : 70~140,    Y : 120~240

