

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

2SC5684

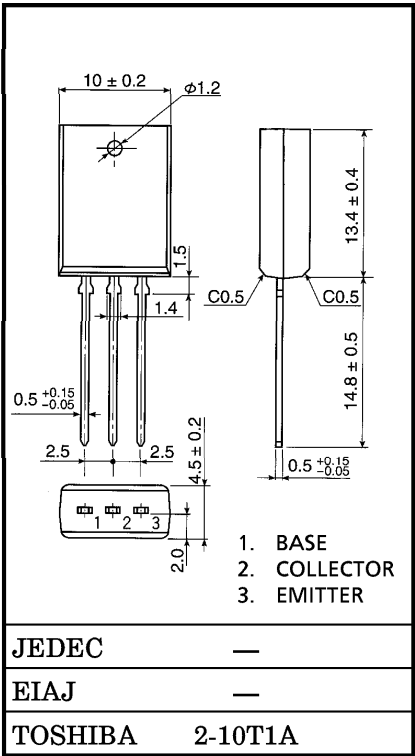
Unit in mm

SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING APPLICATIONS

- Excellent Switching Times ($I_C = 0.3\text{ A}$)
: $t_r = 0.7\text{ }\mu\text{s}$ (Max.), $t_f = 0.5\text{ }\mu\text{s}$ (Max.)
- High Collector Breakdown Voltage : $V_{CEO} = 800\text{ V}$
- High Speed DC-DC Converter Applications

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	900	V
Collector-Emitter Voltage		V_{CEO}	800	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	0.8	A
	Pulse	I_{CP}	1.5	
Base Current		I_B	0.4	A
Collector Power Dissipation		P_C	1.8	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ\text{C}$

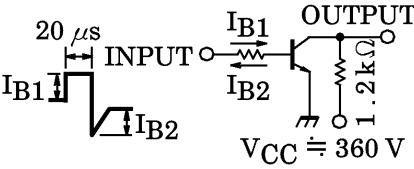


Weight : 1.5 g (Typ.)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 720 \text{ V}, I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	1	mA
Collector-Base Breakdown Voltage		$V_{(BR) CBO}$	$I_C = 1 \text{ mA}, I_E = 0$	900	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	800	—	—	V
DC Current Gain		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$	10	—	—	
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 0.08 \text{ A}$	15	—	60	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 0.3 \text{ A}, I_B = 0.06 \text{ A}$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 0.3 \text{ A}, I_B = 0.06 \text{ A}$	—	—	1.2	V
Switching Time	Rise Time	t_r	 <p>$I_{B1} = 0.06 \text{ A}, I_{B2} = -0.12 \text{ A}$ DUTY CYCLE $\leq 1\%$</p>	—	—	0.7	μs
	Storage Time	t_{stg}		—	—	4.5	
	Fall Time	t_f		—	—	0.5	