

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

# 2SC3075

SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING APPLICATIONS

INDUSTRIAL APPLICATIONS

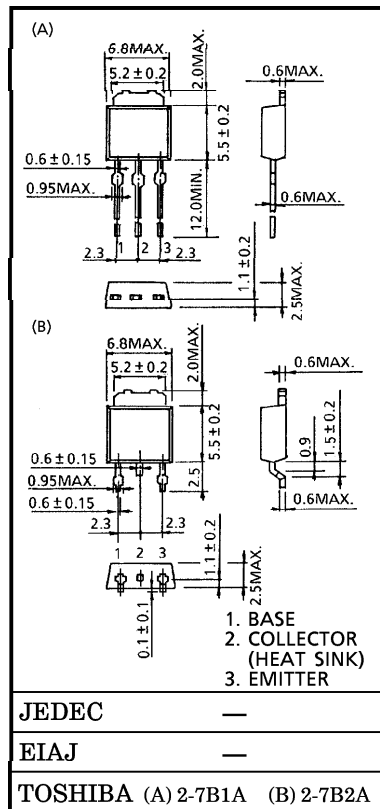
Unit in mm

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- Excellent Switching Times  
:  $t_r = 1.0 \mu s$  (Max.),  $t_f = 1.5 \mu s$  (Max.) at  $I_C = 0.5 A$
- High Collector Breakdown Voltage :  $V_{CEO} = 400 V$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	500	V
Collector-Emitter Voltage	$V_{CEO}$	400	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	DC	$I_C$	0.8 A
	Pulse	$I_{CP}$	1.5 A
Base Current	$I_B$	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	$P_C$	1.0
	$T_c = 25^\circ C$		10
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$



Weight : 0.36 g

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 400\text{ V}, I_E = 0$	—	—	100	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 7\text{ V}, I_C = 0$	—	—	100	$\mu\text{A}$
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_E = 0$	500	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0$	400	—	—	V
DC Current Gain		$h_{FE}$	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	20	—	100	
			$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}$	10	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	0.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	1.0	
Switching Time	Turn-on Time	$t_r$		—	—	1.0	$\mu\text{s}$
	Storage Time	$t_{stg}$		—	—	2.5	
	Fall Time	$t_f$		$I_{B1} = -I_{B2} = 0.05\text{ A},$ $\text{DUTY CYCLE} \leq 1\%$	—	—	

