

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

## 2SC5175

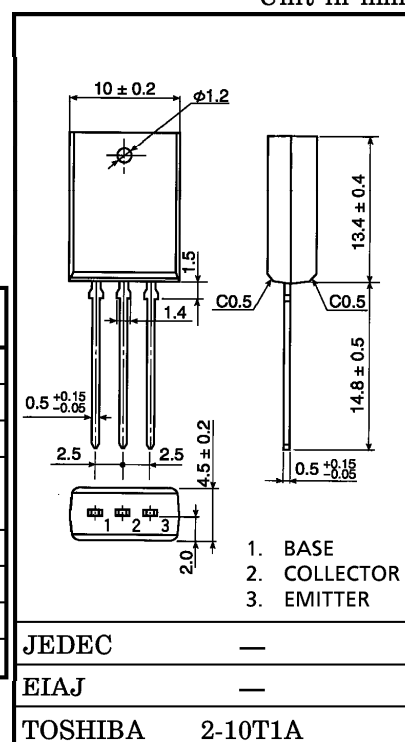
HIGH CURRENT SWITCHING APPLICATIONS

Unit in mm

- Low Saturation Voltage  
:  $V_{CE(sat)} = 0.4V$  (MAX.) (at  $I_C = 2.5A$ ,  $I_B = 125mA$ )
- High Speed Switching Time  
:  $t_{stg} = 0.8\mu s$  (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	DC	$I_C$	A
	Pulse	$I_{CP}$	
Base Current	$I_B$	1	A
Collector Power Dissipation	$P_C$	1.8	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	$-55 \sim 150$	$^\circ C$

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 50V$ , $I_E = 0$	—	—	1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 6V$ , $I_C = 0$	—	—	1	$\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA$ , $I_B = 0$	50	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 1V$ , $I_C = 1A$	100	—	320	
	$h_{FE(2)}$	$V_{CE} = 1V$ , $I_C = 2.5A$	60	—	—	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5A$ , $I_B = 125mA$	—	0.25	0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2.5A$ , $I_B = 125mA$	—	1.0	1.3	V
Transition Frequency	$f_T$	$V_{CE} = 4V$ , $I_C = 1A$	—	100	—	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10V$ , $I_E = 0$ , $f = 1MHz$	—	45	—	pF
Switching Time	Turn-on Time	$t_{on}$		0.1	—	$\mu s$
	Storage Time	$t_{stg}$		0.8	—	
	Fall Time	$t_f$		0.1	—	

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