

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1933

HIGH CURRENT SWITCHING APPLICATIONS

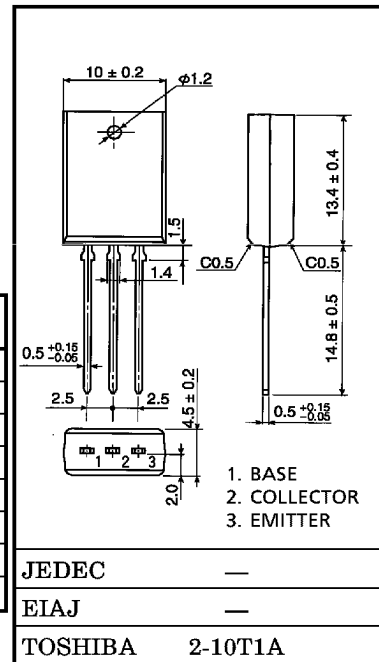
INDUSTRIAL APPLICATIONS

Unit in mm

- Low Saturation Voltage
: $V_{CE(sat)} = -0.4V$ (Max.) at $I_C = -3A$
- High Speed Switching Time : $t_{stg} = 1.0\mu s$ (Typ.)
- Complementary to 2SC5175

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	I_C	-5	A
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}	-55~150	$^\circ C$

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

Weight : 1.5g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50V, I_E = 0$	—	—	-1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5V, I_C = 0$	—	—	-1	μA
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	
	$h_{FE(2)}$	$V_{CE} = -1V, I_C = -3A$	30	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}, I_C = -3A, I_B = -0.15A$	—	-0.2	-0.4	V
	Base-Emitter	$V_{BE(sat)}, I_C = -3A, I_B = -0.15A$	—	-0.9	-1.2	
Transition Frequency	f_T	$V_{CE} = -4V, I_C = -1A$	—	60	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	170	—	pF
Switching Time	Turn-on Time	t_{on}	—	0.1	—	μs
	Storage Time	t_{stg}	—	1.0	—	
	Fall Time	t_f	—	0.1	—	

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