

# 2SD0973A (2SD973A)

Silicon NPN epitaxial planar type

For low-frequency driver amplification

## ■ Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board

## ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	60	V
Collector to emitter voltage	$V_{CEO}$	50	V
Emitter to base voltage	$V_{EBO}$	5	V
Peak collector current	$I_{CP}$	1.5	A
Collector current	$I_C$	1	A
Collector power dissipation *	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: Printed circuit board; Copper foil area of 1  $\text{cm}^2$  or more, and the board thickness of 1.7 mm for the collector portion

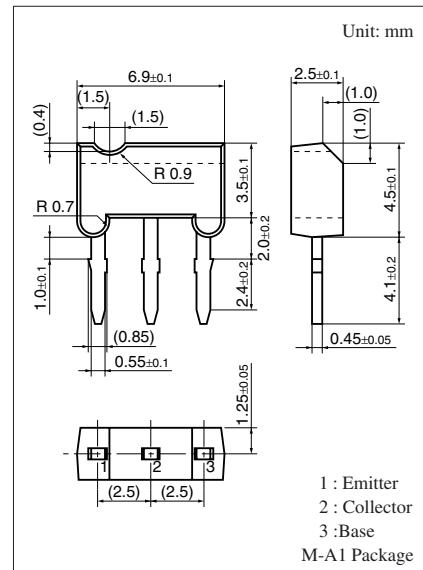
## ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20 \text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Collector to base voltage	$V_{CBO}$	$I_C = 10 \mu\text{A}$ , $I_E = 0$	60			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 2 \text{ mA}$ , $I_B = 0$	50			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10 \mu\text{A}$ , $I_C = 0$	5			V
Forward current transfer ratio * <sup>1</sup>	$h_{FE1}$ * <sup>2</sup>	$V_{CE} = 10 \text{ V}$ , $I_C = 500 \text{ mA}$	85	160	340	
	$h_{FE2}$	$V_{CE} = 5 \text{ V}$ , $I_C = 1 \text{ A}$	50	100		
Collector to emitter saturation voltage * <sup>1</sup>	$V_{CE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$		0.2	0.4	V
Base to emitter saturation voltage * <sup>1</sup>	$V_{BE(sat)}$	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}$		0.85	1.2	V
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}$ , $I_E = -50 \text{ mA}$ , $f = 200 \text{ MHz}$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$		20	30	pF

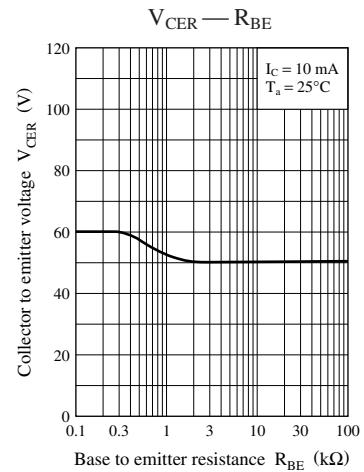
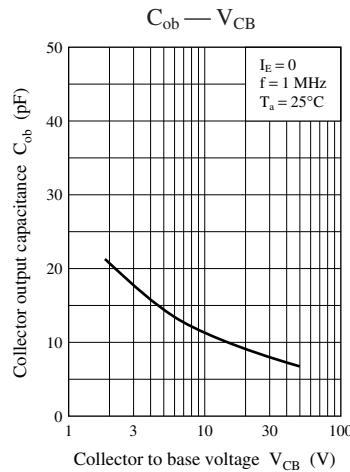
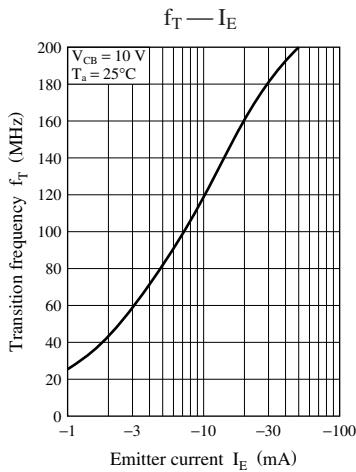
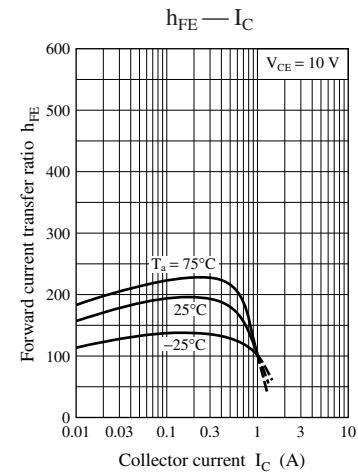
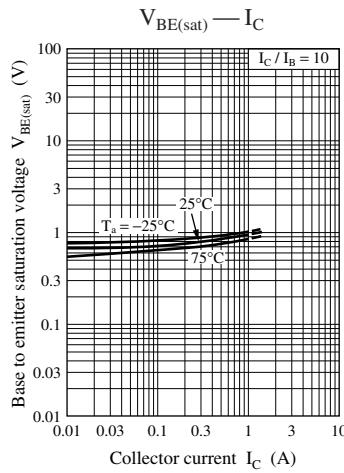
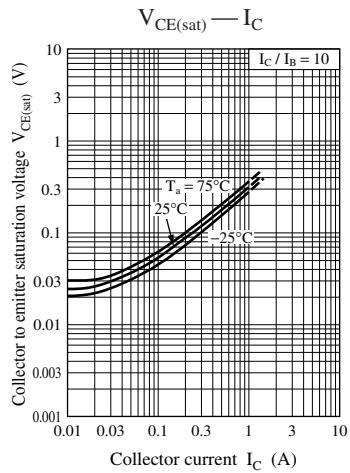
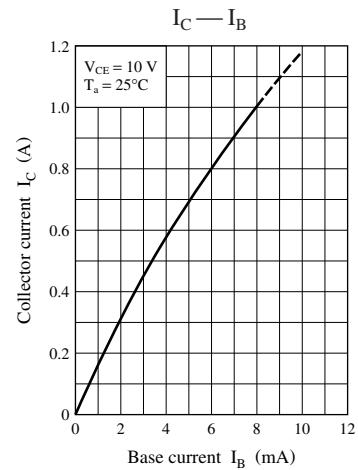
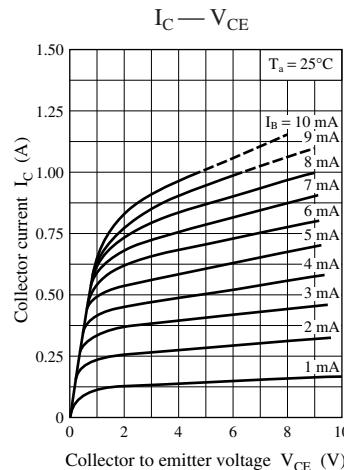
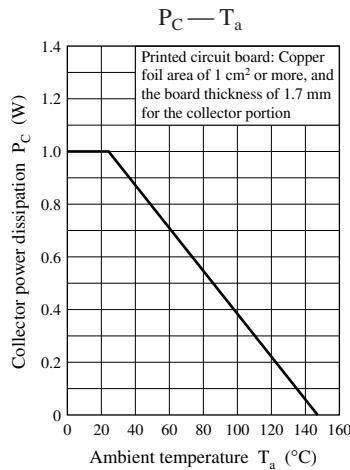
Note) \*1: Pulse measurement

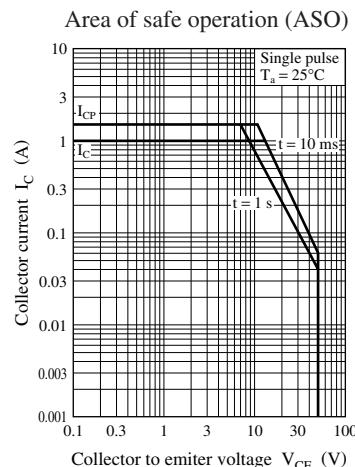
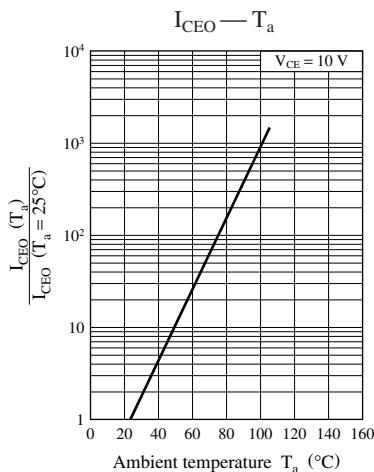
\*2:  $h_{FE1}$  rank classification

Rank	Q	R	S
$h_{FE1}$	85 to 170	120 to 240	170 to 340



Note) The part number in the parenthesis shows conventional part number.





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