TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

# 2SA1955FV

## General Purpose Amplifier Applications Switching and Muting Switch Application

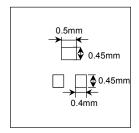
• Low saturation voltage:  $V_{CE (sat)}(1) = -15 \text{ mV (typ.)}$  $@I_{C} = -10 \text{ mA/I}_{B} = -0.5 \text{ mA}$ 

• Large collector current: I<sub>C</sub> = -400 mA (max)

## **Maximum Ratings (Ta = 25°C)**

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-15	V
Collector-emitter voltage	V <sub>CEO</sub>	-12	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	I <sub>C</sub>	-400	mA
Base current	lΒ	-50	mA
Collector power dissipation	P <sub>C</sub>	150 *	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°C

<sup>\* :</sup> Mounted on FR4 board (25.4 mm  $\times$  25.4 mm  $\times$  1.6mmt)



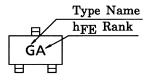
# Unit: mm 1.2±0.05 0.8±0.06 0.8±0.06 0.8±0.06 0.0±20 0.0±2

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Weight: 0.0015g (typ.)

**TOSHIBA** 

## Marking



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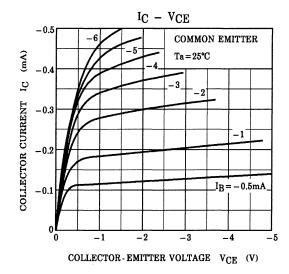


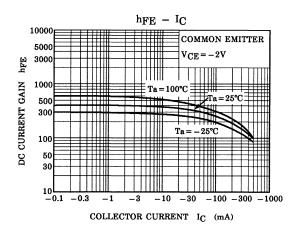
# Electrical Characteristics (Ta = 25°C)

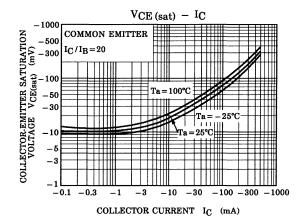
Chara	acteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off of	current	I <sub>CBO</sub>	$V_{CB} = -15 \text{ V}, I_E = 0$	_	_	-0.1	μА
Emitter cut-off current		I <sub>EBO</sub>	$V_{EB} = -5 \text{ V}, I_C = 0$	_	_	-0.1	μА
DC current gain		h <sub>FE</sub> (Note)	$V_{CE} = -2 \text{ V}, I_{C} = -10 \text{ mA}$	300	_	1000	
Collector-emitter saturation voltage		V <sub>CE</sub> (sat) (1)	$I_C = -10 \text{ mA}, I_B = -0.5 \text{ mA}$		-15	-30	- mV
		V <sub>CE</sub> (sat) (2)	$I_C = -200 \text{ mA}, I_B = -10 \text{ mA}$		-110	-250	
Base-emitter saturation voltage		V <sub>BE (sat)</sub>	$I_C = -200 \text{ mA}, I_B = -10 \text{ mA}$	_	-0.87	-1.2	V
Transition frequency		f <sub>T</sub>	$V_{CE} = -2 \text{ V}, I_C = -10 \text{ mA}$	80	130	_	MHz
Collector output capacitance		C <sub>ob</sub>	$V_{CB} = -10 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$	_	4.2	_	pF
Collector-emitter on resistance		R <sub>on</sub>	$I_B = -1 \text{ mA}, V_{in} = -1 V_{rms}, f = 1 \text{ kHz}$	_	0.9	_	Ω
Switching time	Turn-on time	t <sub>on</sub>	$0$ INPUT $300\Omega$ OUTPUT $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$	_	40	_	
	Storage time	t <sub>stg</sub>			280	_	ns
	Fall time	t <sub>f</sub>		_	45	_	

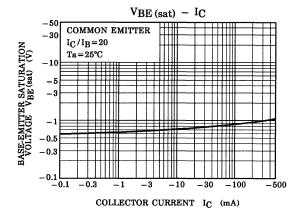
Note: hFE classification A: 300~600, B: 500~1000

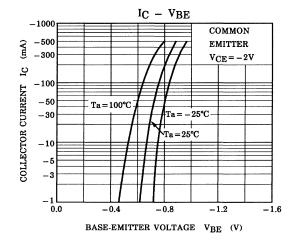
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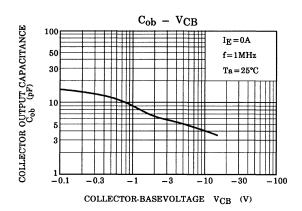




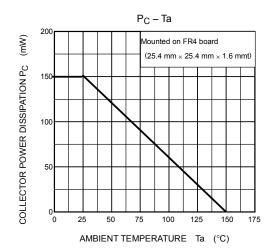








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