

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

# 2SA2154MFV

## General-Purpose Amplifier Applications

- High voltage and high current  
:  $V_{CE0} = -50\text{ V}$ ,  $I_C = -150\text{ mA}$  (max)
- Excellent  $h_{FE}$  linearity  
:  $h_{FE}(I_C = -0.1\text{ mA})/h_{FE}(I_C = -2\text{ mA}) = 0.95$  (typ.)
- High  $h_{FE}$  :  $h_{FE} = 120$  to  $400$
- Complementary to 2SC6026MFV

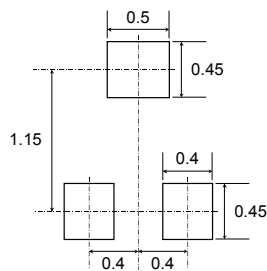
## Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-50	V
Collector-emitter voltage	$V_{CE0}$	-50	V
Emitter-base voltage	$V_{EB0}$	-5	V
Collector current	$I_C$	-150	mA
Base current	$I_B$	-30	mA
Collector power dissipation	$P_C$	150*	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to 150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

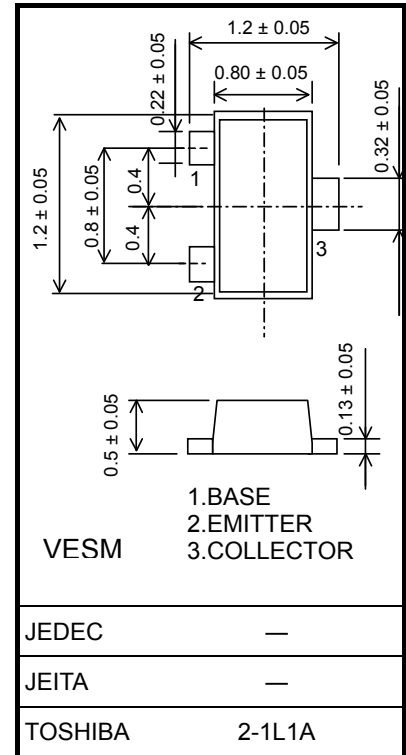
\* : Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6mm)

## Mount Pad Dimensions (Reference)



Unit: mm

Unit: mm



Weight: 1.5 mg (typ.)

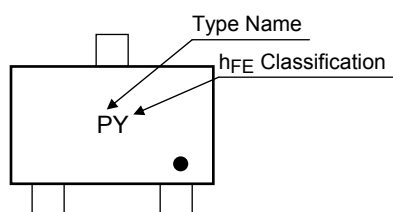
Start of commercial production  
2005-02

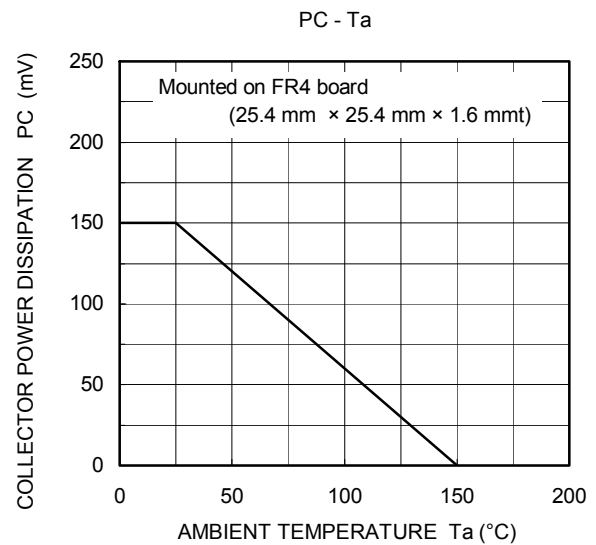
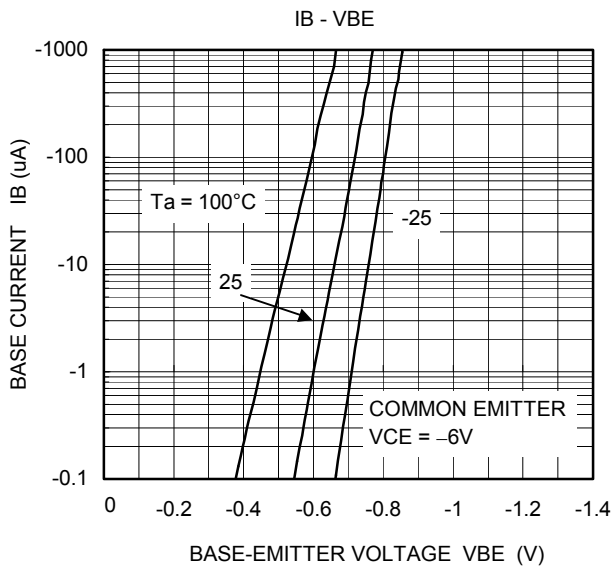
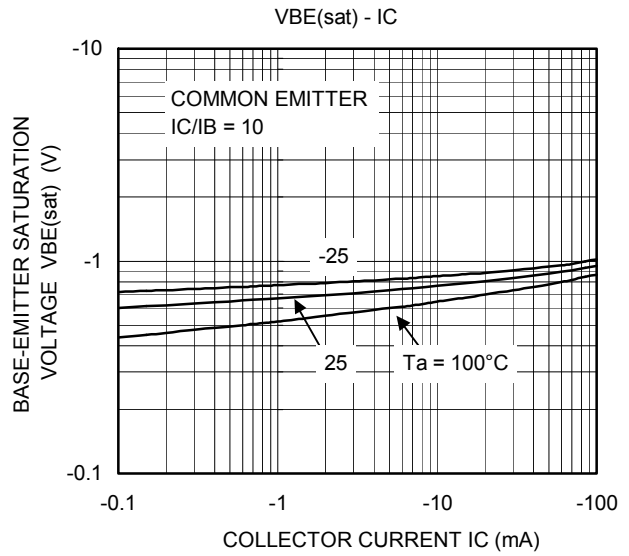
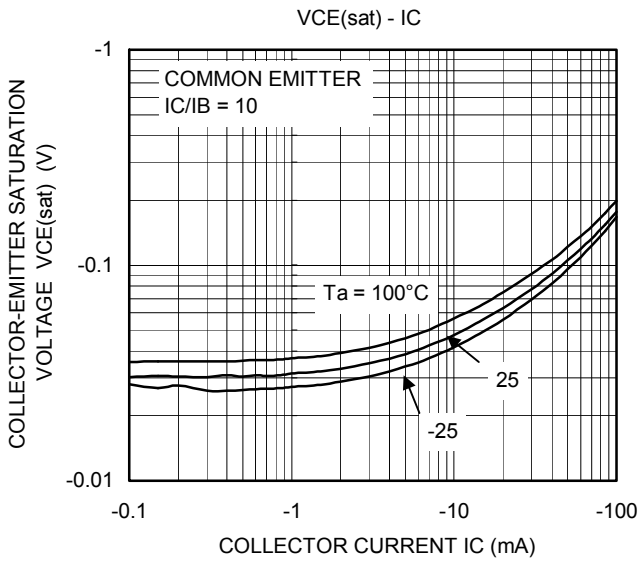
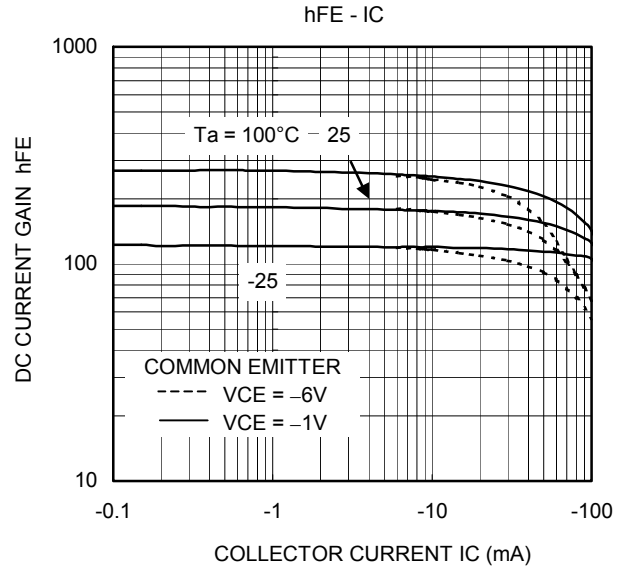
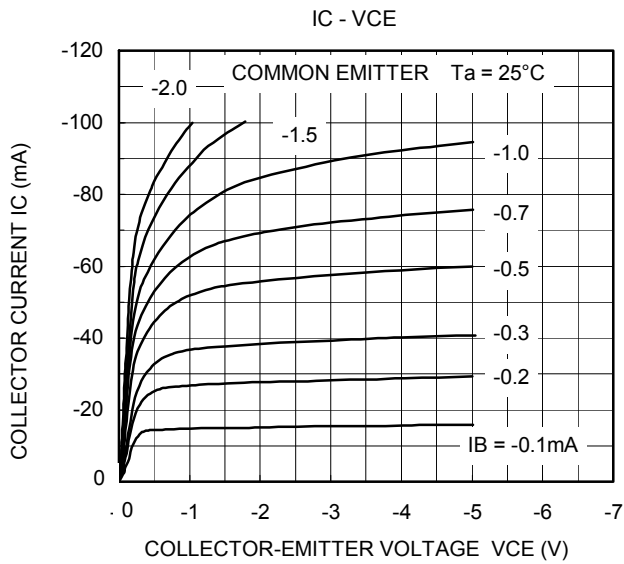
## Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$ (Note)	$V_{CE} = -6\text{ V}, I_C = -2\text{ mA}$	120	—	400	—
Collector-emitter saturation voltage	$V_{CE}(\text{sat})$	$I_C = -100\text{ mA}, I_B = -10\text{ mA}$	—	-0.18	-0.3	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -1\text{ mA}$	80	—	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	1.6	—	pF

Note:  $h_{FE}$  classification Y (Y): 120 to 240, GR (G): 200 to 400  
 ( ) marking symbol

## Marking





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