



# SANYO Semiconductors

## DATA SHEET

# 2SA1575 / 2SC4080

PNP / NPN Epitaxial Planar Silicon Darlington Transistors

## High-Frequency Amplifier, Wide-Band Amplifier Applications

### Features

- High  $f_T$ .
- High breakdown voltage.
- Small reverse transfer capacitance and excellent high-frequency characteristic.
- Adoption of FBET process.

### Specifications ( ) : 2SA1575

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)200	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)200	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)4	V
Collector Current	$I_C$		(-)100	mA
Collector Current (Pulse)	$I_{CP}$		(-)200	mA
Collector Dissipation	$P_C$		500	mW
		Mounted on a ceramic board (250mm <sup>2</sup> X0.8mm)	1.3	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=(-)150\text{V}, I_E=0\text{A}$			(-)0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)2\text{V}, I_C=0\text{A}$			(-)1.0	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=(-)10\text{V}, I_C=(-)10\text{mA}$	40*		320*	
	$h_{FE2}$	$V_{CE}=(-)10\text{V}, I_C=(-)60\text{mA}$	20			
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)30\text{V}, I_C=(-)30\text{mA}$		400		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		(2.3)1.8		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		(1.7)1.4		pF

Marking : 2SA1575 : AF / 2SC4080 : CI

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\* : The 2SA1575 / 2SC4080 are classified by 10mA  $h_{FE}$  as follows :

Rank	C	D	E	F
$h_{FE}$	40 to 80	60 to 120	100 to 200	160 to 320

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# 2SA1575 / 2SC4080

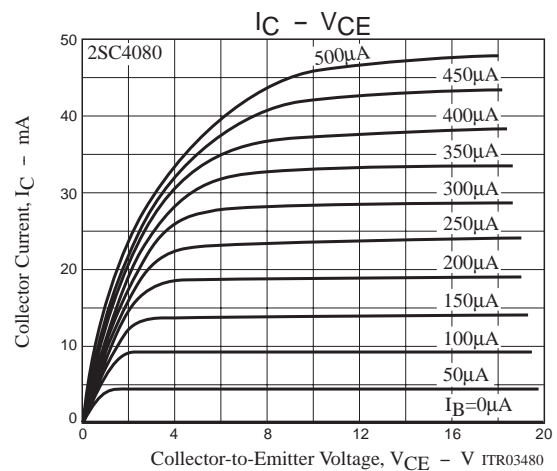
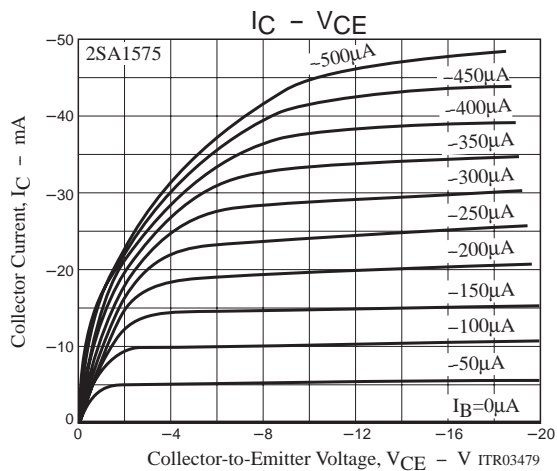
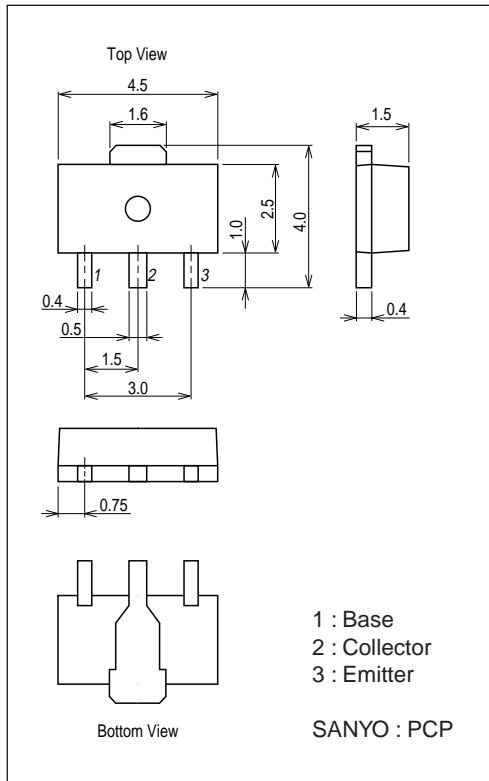
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-1.0)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-1.0)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-200)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-200)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu A, I_C=0A$	(-4)			V

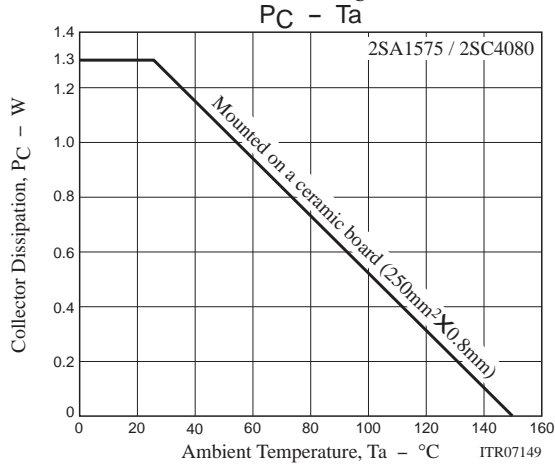
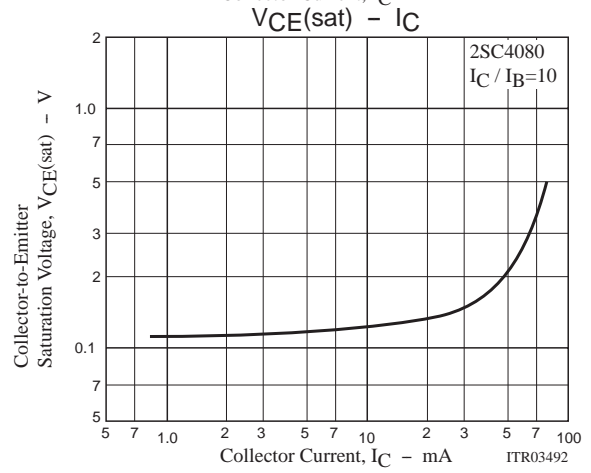
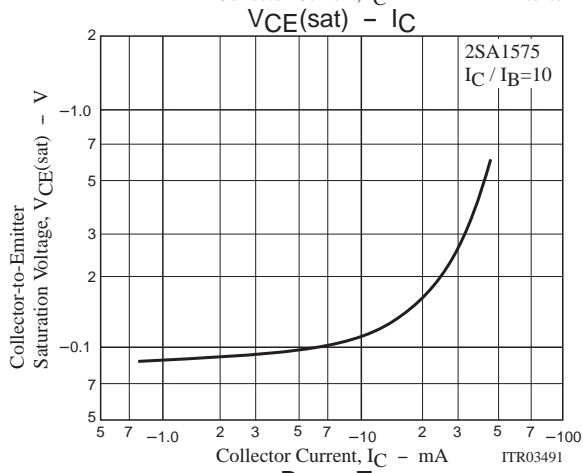
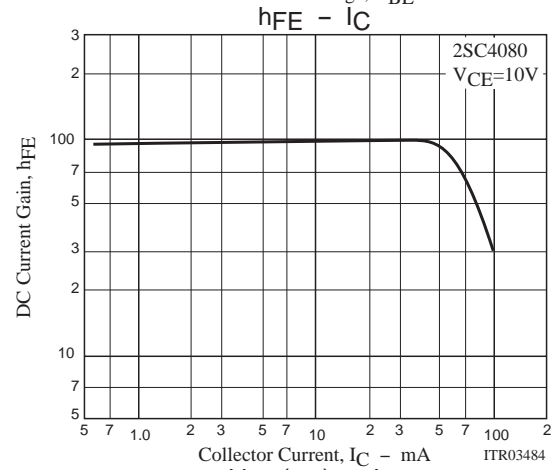
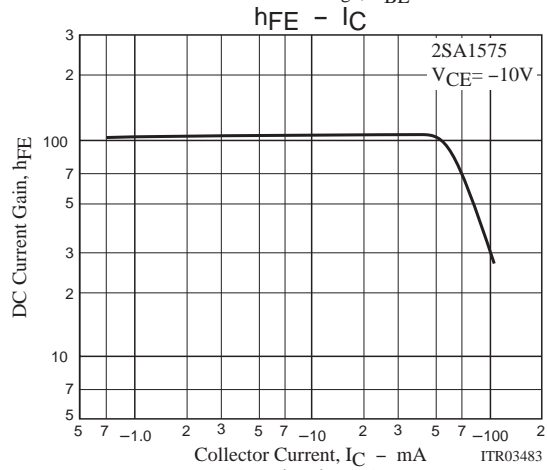
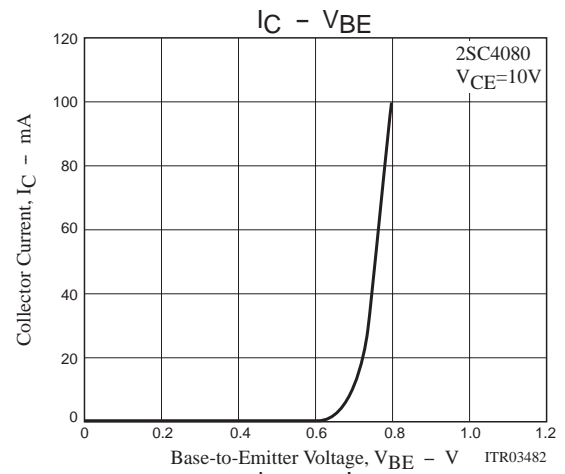
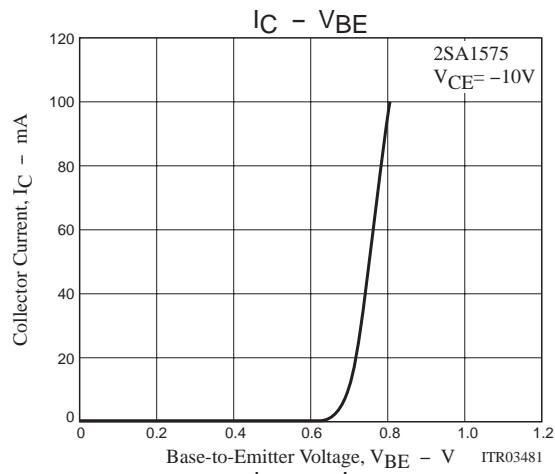
## Package Dimensions

unit : mm (typ)

7007A-004



# 2SA1575 / 2SC4080



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