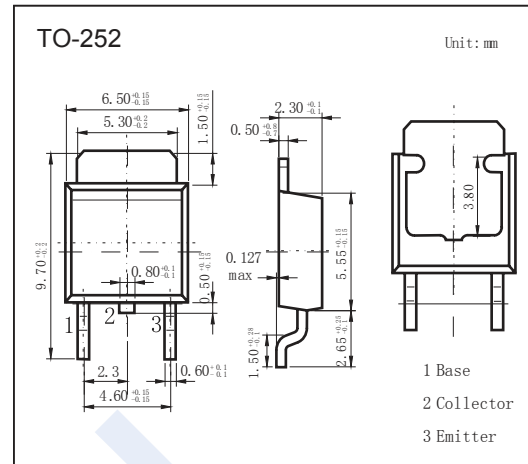


## PNP Transistors

## 2SB1176

## ■ Features

- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Large collector current  $I_C$
- Complementary to 2SD1746

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CBO}$	-130	V
Collector - Emitter Voltage	$V_{CEO}$	-80	
Emitter - Base Voltage	$V_{EBO}$	-7	
Collector Current - Continuous	$I_C$	-5	A
Collector current -Pulse	$I_{CP}$	-10	
Collector Power Dissipation	$P_C$	15	W
$T_a = 25^\circ\text{C}$		1.3	
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature range	$T_{stg}$	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CBO}$	$I_C = -100 \mu\text{A}, I_E = 0$	-130			V
Collector- emitter breakdown voltage	$V_{CEO}$	$I_C = -10 \text{ mA}, I_B = 0$	-80			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E = -100 \mu\text{A}, I_C = 0$	-7			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = -100\text{V}, I_E = 0$			-10	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -6\text{V}, I_C = 0$			-50	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -4 \text{ A}, I_B = -200\text{mA}$			-0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -4 \text{ A}, I_B = -200\text{mA}$			-1.5	
DC current gain	$h_{FE}$	$V_{CE} = -2\text{V}, I_C = -100 \text{ mA}$	45			
		$V_{CE} = -2\text{V}, I_C = -2 \text{ A}$	90		260	
Turn-ON Time	$t_{on}$	$I_C = -2\text{A}, I_{B1} = -200 \text{ mA}, I_{B2} = 200 \text{ mA}$ $V_{CC} = -50 \text{ V}$		0.13		us
Storage Time	$t_{stg}$			0.5		
Fall Time	$t_f$				0.13	
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}, f = 10\text{MHz}$		30		MHz

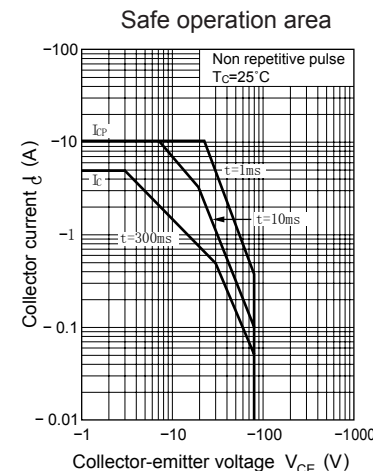
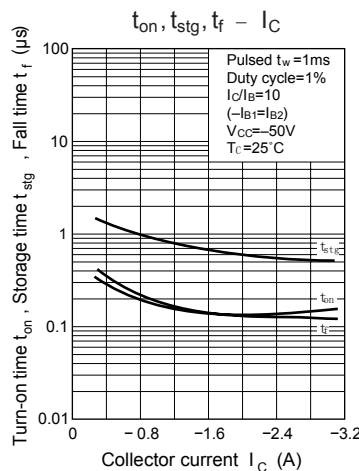
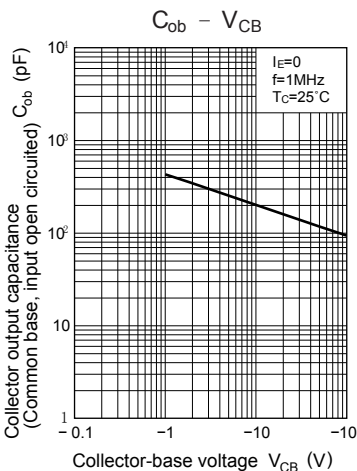
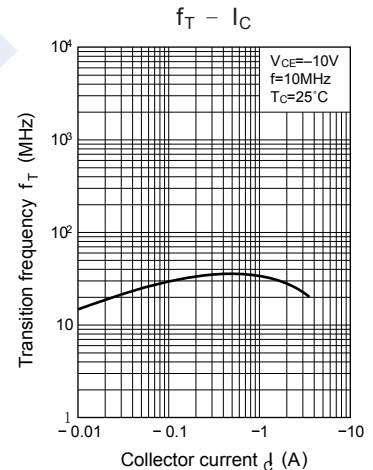
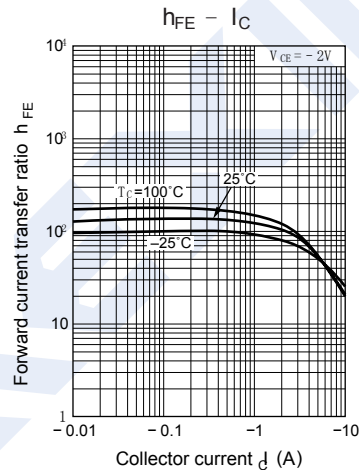
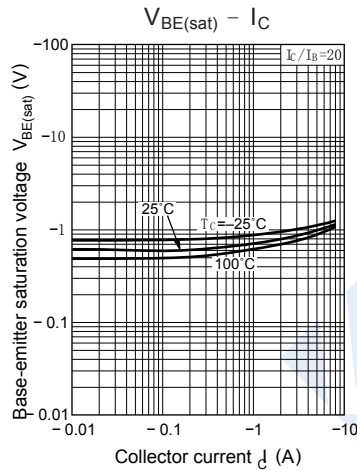
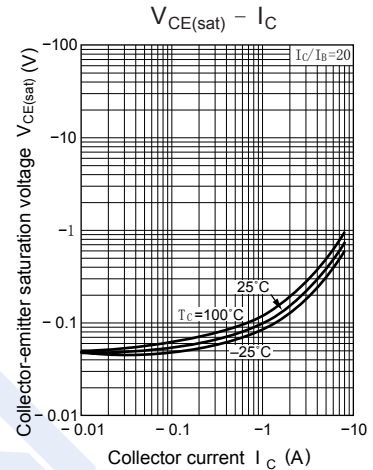
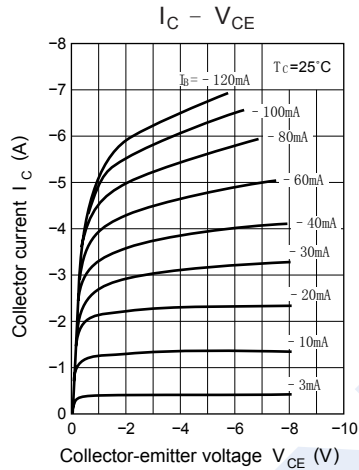
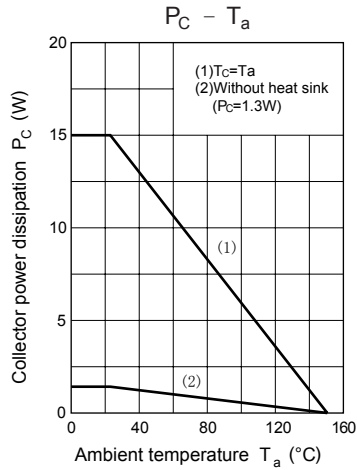
■ Classification of  $h_{FE}(2)$ 

Type	2SB1176-Q	2SB1176-P
Range	90-180	130-260

# PNP Transistors

## 2SB1176

### Typical Characteristics



## PNP Transistors

## 2SB1176

## ■ Typical Characteristics

