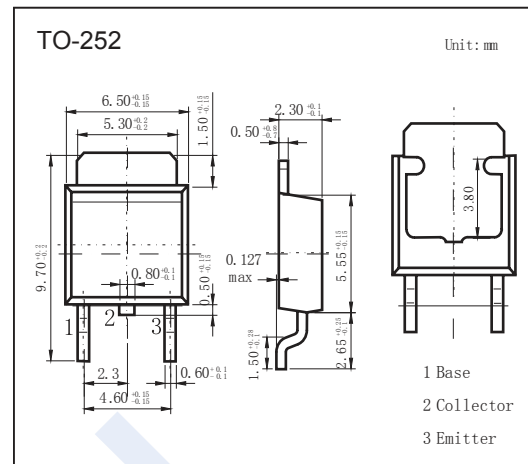


PNP Transistors

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	μA
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		μs
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

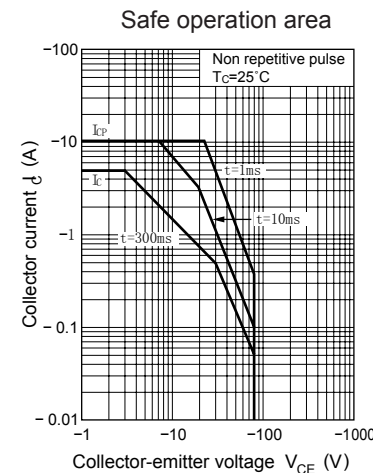
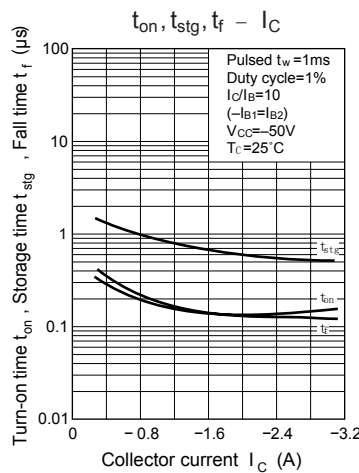
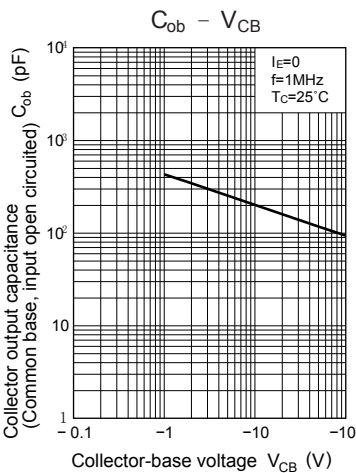
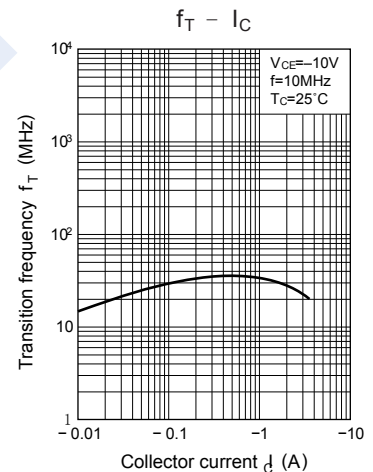
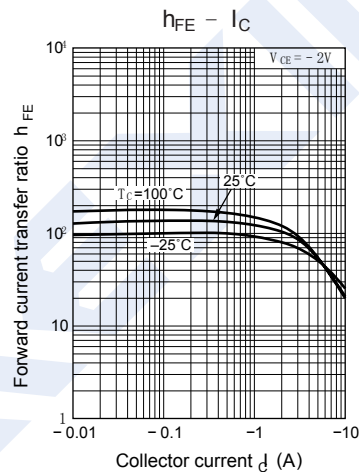
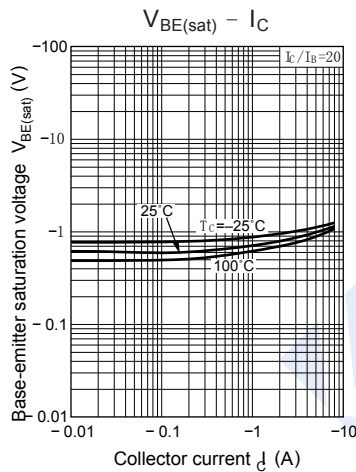
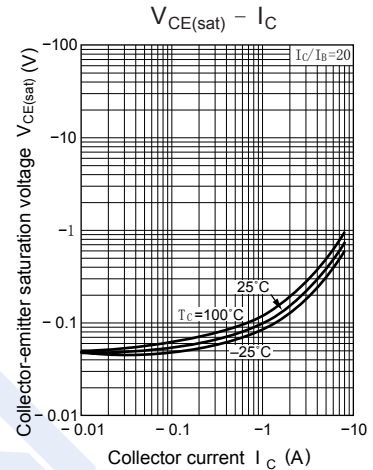
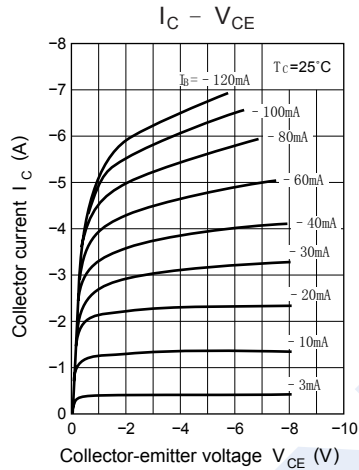
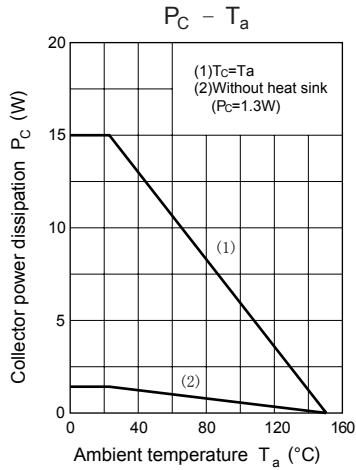
■ Classification of $h_{FE}(2)$

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

PNP Transistors

2SB1176

Typical Characteristics



PNP Transistors

2SB1176

■ Typical Characteristics

