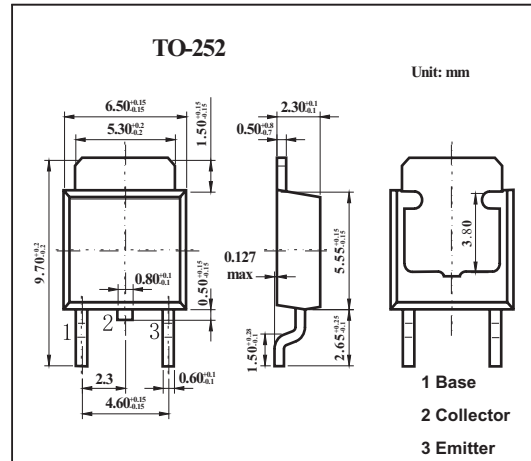


# 2SB1204

■ Features

- Low collector-to-emitter saturation voltage.
- High current and high fT.
- Excellent linearity of hFE.
- Fast switching time.



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	-60	V
Collector-emitter voltage	V <sub>CEO</sub>	-50	V
Emitter-base voltage	V <sub>EBO</sub>	-6	V
Collector current	I <sub>C</sub>	-8	A
Collector current (pulse)	I <sub>CP</sub>	-12	A
Collector dissipation	P <sub>C</sub>	1	W
Ta = 25°C		20	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

## 2SB1204

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit	
Collector cutoff current	ICBO	V <sub>CB</sub> = -40V , I <sub>E</sub> = 0			-1	μA	
Emitter cutoff current	IEBO	V <sub>EB</sub> = -4V , I <sub>C</sub> = 0			-1	μA	
DC current Gain	hFE	V <sub>CE</sub> = -2V , I <sub>C</sub> = -0.5A	70		400		
		V <sub>CE</sub> = -2V , I <sub>C</sub> = -6A	35				
Gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> = -5V , I <sub>C</sub> = -1A		130		MHz	
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V , f = 1MHz		95		pF	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -4A , I <sub>B</sub> = -0.2A		-250	-500	mV	
Base-to-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = -4A , I <sub>B</sub> = -0.2A		-0.95	-1.3	V	
Collector-to-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = -10μA , I <sub>E</sub> = 0	-60			V	
Collector-to-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = -1mA , R <sub>BE</sub> = ∞	-50			V	
Emitter-to-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = -10μA , I <sub>C</sub> = 0	-6			V	
Turn-on time	t <sub>on</sub>	<p>I<sub>C</sub> = 10mA I<sub>B1</sub> = -10mA I<sub>B2</sub> = 4mA                      (For PNP, the polarity is reversed.)                      Unit (resistance : Ω, capacitance : pF)</p>		50		ns	
Storage time	t <sub>stg</sub>				450		ns
Fall time	t <sub>f</sub>				20		ns

■ hFE Classification

Rank	Q	R	S	T
hFE	70~140	100~200	140~280	200~400