## 2SB1122

# ON Semiconductor®

# Bipolar Transistor -50V, -1A, Low VCE(sat) PNP Single PCP

http://onsemi.com

#### **Applicaitons**

· Voltage regulators relay drivers, lamp drivers, electrical equipment

#### **Features**

- Adoption of FBET process
- · Ultrasmall size making it easy to provide high-density hybrid IC's

#### **Specifications**

Absolute Maximum Ratings at Ta=25°C

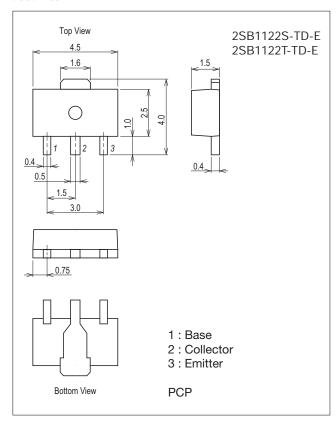
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V <sub>CBO</sub>		-60	V
Collector to Emitter Voltage	VCEO		-50	V
Emitter to Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	IC		-1	А
Collector Current (Pulse)	ICP		-2	А

Continued on next page.

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

#### **Package Dimensions**

unit : mm (typ) 7007B-004



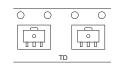
#### **Product & Package Information**

• Package : PCP

• JEITA, JEDEC : SC-62, SOT-89, TO-243

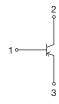
• Minimum Packing Quantity: 1,000 pcs./reel

#### Packing Type: TD Marking





#### **Electrical Connection**



#### Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	PC	When mounted on ceramic substrate (250mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

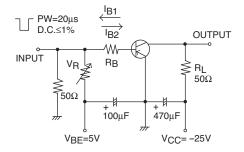
#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit	
Parameter	Symbol	Conditions	min	typ	max	Unit	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =-50V, I <sub>E</sub> =0A			-100	nA	
Emitter Cutoff Current	IEBO	VEB=-4V, IC=0A			-100	nA	
D0.0	h <sub>FE</sub> 1	V <sub>CE</sub> =-2V, I <sub>C</sub> =-100mA	140*		400*		
DC Current Gain	h <sub>FE</sub> 2	V <sub>CE</sub> =-2V, I <sub>C</sub> =-1A	30				
Gain-Bandwidth Product	fT	V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA		150		MHz	
Output Capacitance	Cob	V <sub>CB</sub> =-10V, f=1MHz		12		pF	
Collector to Emitter Saturation Voltage	V <sub>CE</sub> (sat)	IC=-500mA, IB=-50mA		-180	-500	mV	
Base to Emitter Saturation Voltage	V <sub>BE</sub> (sat)	IC=-500mA, IB=-50mA		-0.9	-1.2	V	
Collector to Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =-10μA, I <sub>E</sub> =0A	-60			V	
Collector to Emitter Breakdown Voltage	V(BR)CEO	IC=-1mA, RBE=∞	-50			V	
Emitter to Base Breakdown Voltage	V(BR)EBO	I <sub>E</sub> =-10μA, I <sub>C</sub> =0A	-5			V	
Turn-ON Time	ton			40		ns	
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		300		ns	
Fall Time	tf			30		ns	

#### \*: 2SB1122 is classified by 100mA hFE as follows:

Rank	S	T
hFE	140 to 280	200 to 400

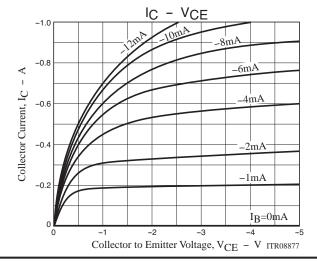
#### **Switching Time Test Circuit**

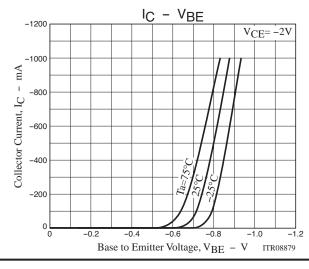


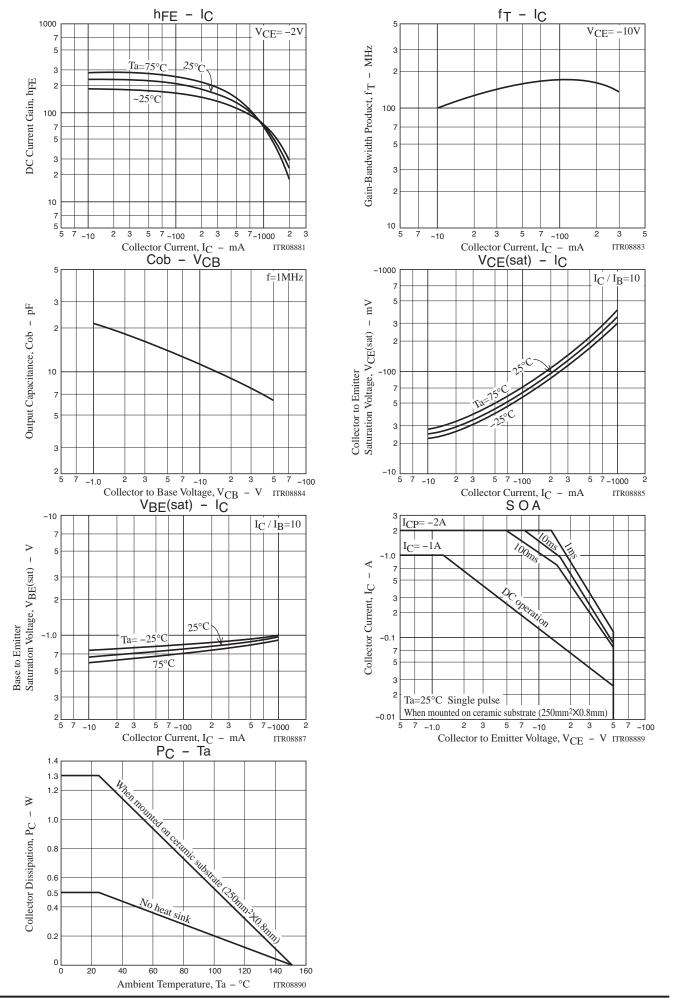
 $I_{C}=10I_{B1}=-10I_{B2}=-500mA$ 

#### **Ordering Information**

Device	Package	Shipping	memo		
2SB1122S-TD-E	PCP	1,000pcs./reel	Pb Free		
2SB1122T-TD-E	PCP	1,000pcs./reel	PD FIEE		





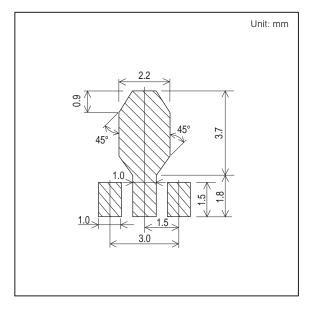


#### **Outline Drawing**

2SB1122S-TD-E, 2SB1122T-TD-E

### Mass (g) Unit 0.058 mm 4. 5±0. 1 1. 5±0. 1 1. 6±0. 2 2. 5±0. 1 0±0. 0±0.2 $0.4^{+0.08}_{-0.05}$ 0. 4±0.03 0. 5+0. 05 1. 5±0. 2 3. 0±0. 2 0.75 0.10 \*1:Lot indication

#### Land Pattern Example



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