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2SB1121

Bipolar Transistor -25V, -2A, Low VCE(sat) PNP Single PCP

Applications

- Voltage regulators, relay drivers, lamp drivers, electrical equipment

Features

- Adoption of FBET, MBIT processes
- Large current capacity and wide SOA
- Ultrasmall size making it easy to provide high-density, small-sized hybrid IC's
- Low collector to emitter saturation voltage
- Fast switching speed

Specifications

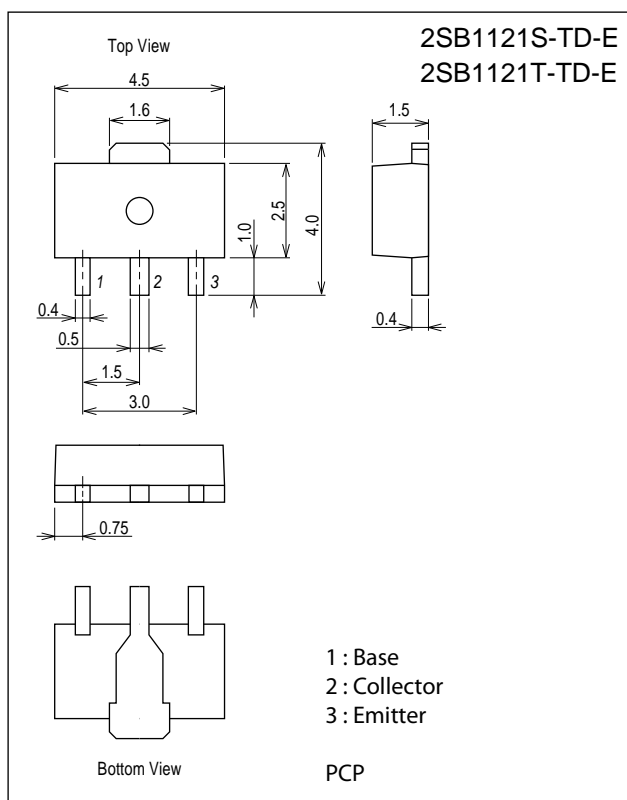
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CB0}		-30	V
Collector to Emitter Voltage	V_{CEO}		-25	V
Emitter to Base Voltage	V_{EBO}		-6	V
Collector Current	I_C		-2	A
Collector Current (Pulse)	I_{CP}		-5	A

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Package Dimensions

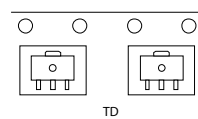
unit : mm (typ)
7007B-004



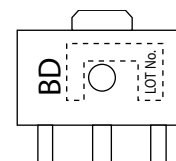
Product & Package Information

- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

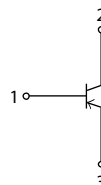
Packing Type: TD



Marking



Electrical Connection



2SB1121

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Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	P_C		500	mW
		When mounted on ceramic substrate (250mm ² ×0.8mm)	1.3	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

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.

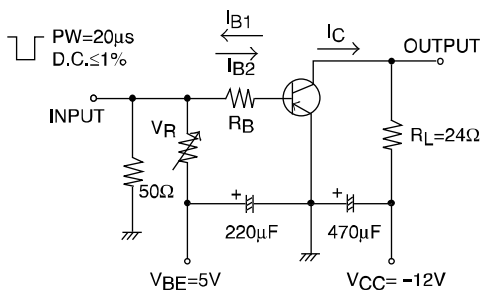
Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-20\text{V}, I_E=0\text{A}$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0\text{A}$			-0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	140*		400*	
	h_{FE2}	$V_{CE}=-2\text{V}, I_C=-1.5\text{A}$	65			
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$		32		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-1.5\text{A}, I_B=-75\text{mA}$		-0.35	-0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-1.5\text{A}, I_B=-75\text{mA}$		-0.85	-1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0\text{A}$	-30			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-25			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0\text{A}$	-6			V
Turn-ON Time	t_{on}	See specified Test Circuit		60		ns
Storage Time	t_{stg}			350		ns
Fall Time	t_f			25		ns

*: The 2SB1121 is classified by 100mA h_{FE} as follows:

Rank	S	T
h_{FE}	140 to 280	200 to 400

Switching Time Test Circuit

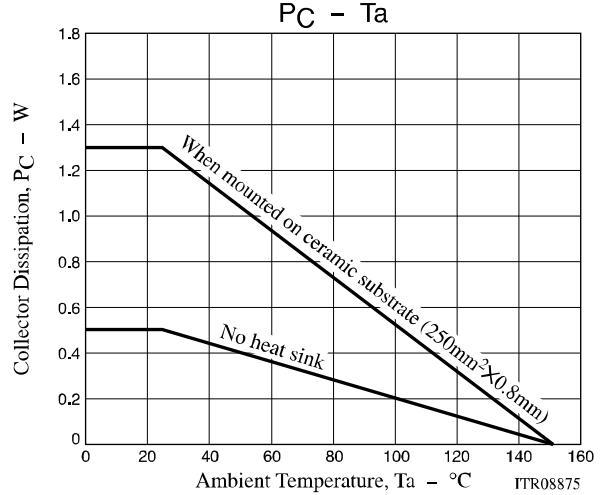
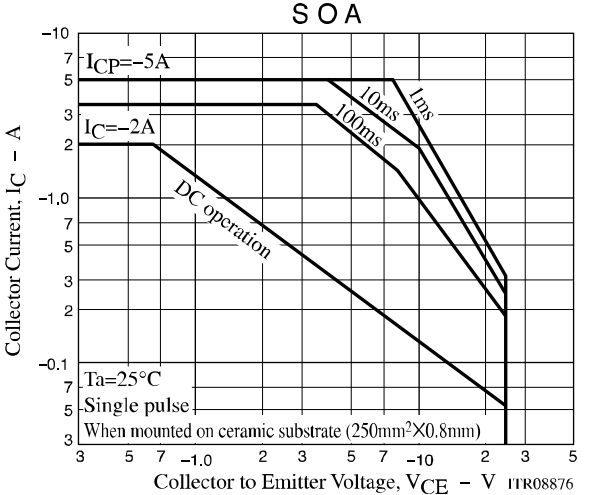
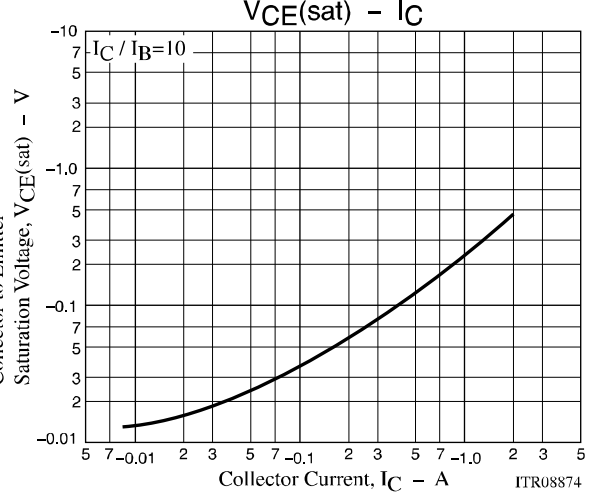
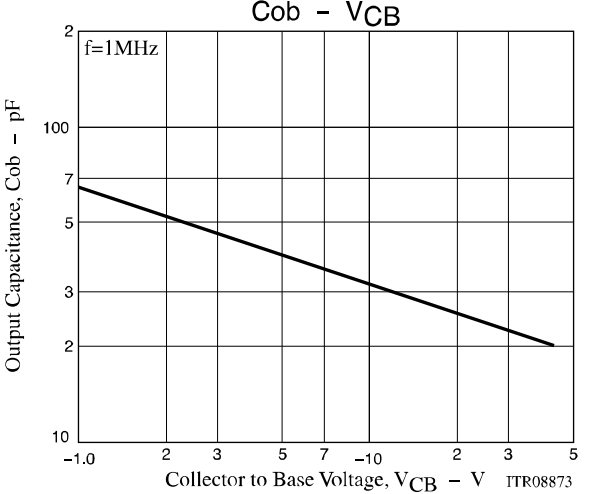
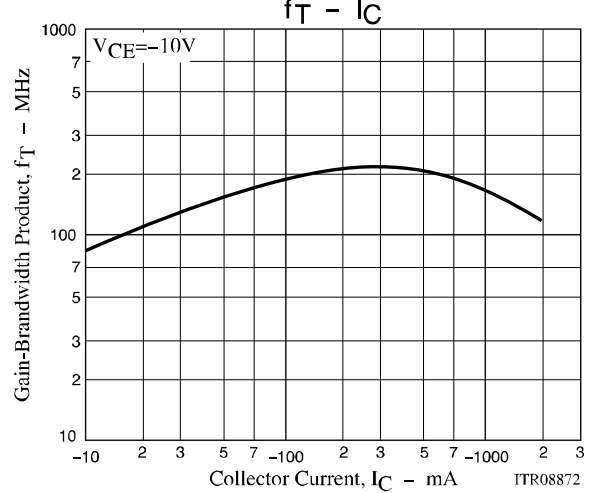
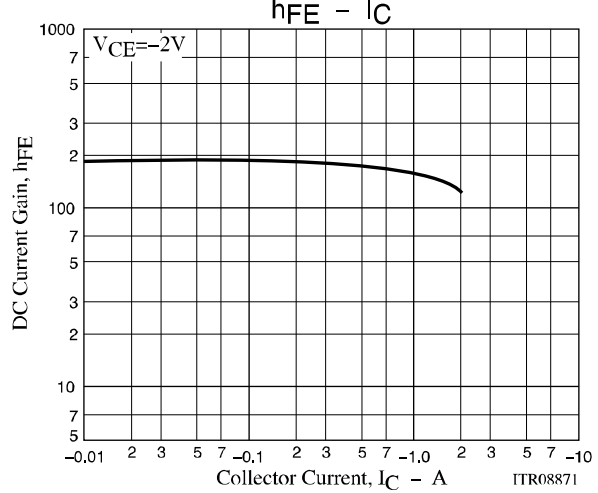
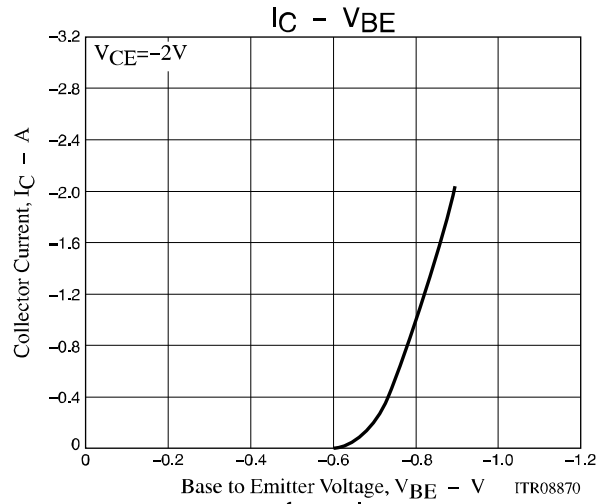
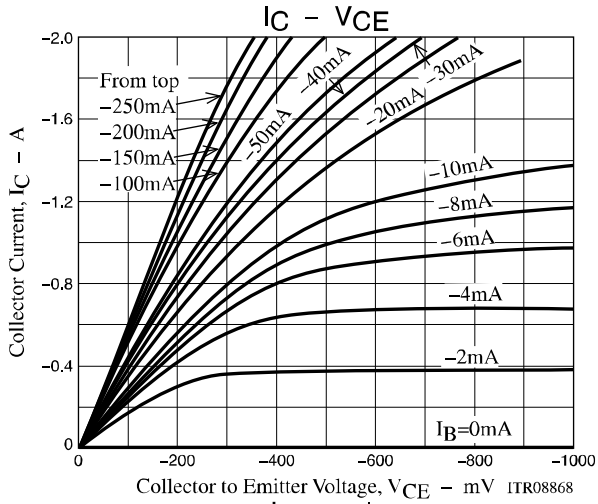


$$I_C = 20I_{B1} = -20I_{B2} = -0.5\text{A}$$

Ordering Information

Device	Package	Shipping	Memo
2SB1121S-TD-E 2SB1121T-TD-E	PCP	1,000pcs./reel	Pb-Free

2SB1121

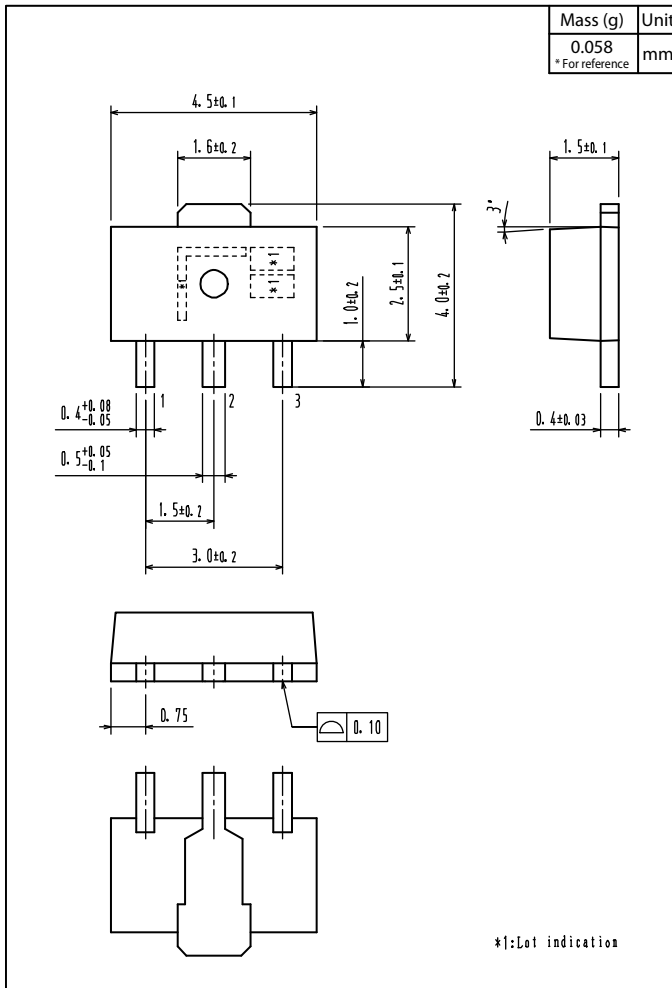


2SB1121

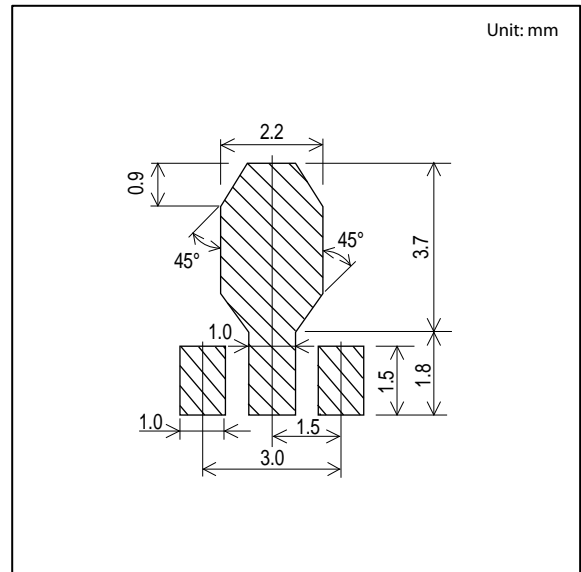
Outline Drawing

2SB1121S-TD-E

2SB1121T-TD-E





Land Pattern Example



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