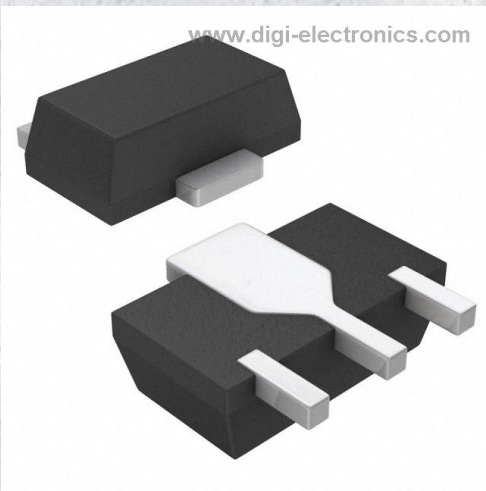
2SB1121S-TD-E Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	2SB1121S-TD-E-DG
Manufacturer	onsemi
Manufacturer Product Number	2SB1121S-TD-E
Description	TRANS PNP 25V 2A PCP
Detailed Description	Bipolar (BJT) Transistor PNP 25 V 2 A 150MHz 500 mW Surface Mount PCP

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
2SB1121S-TD-E	onsemi
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	2 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
25 V	600mV @ 75mA, 1.5A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	100 @ 100mA, 2V
Power - Max:	Frequency - Transition:
500 mW	150MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-243AA	PCP
Base Product Number:	
2SB1121	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

Ordering number : EN1787C

2SB1121

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

ON Semiconductor®

http://onsemi.com

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

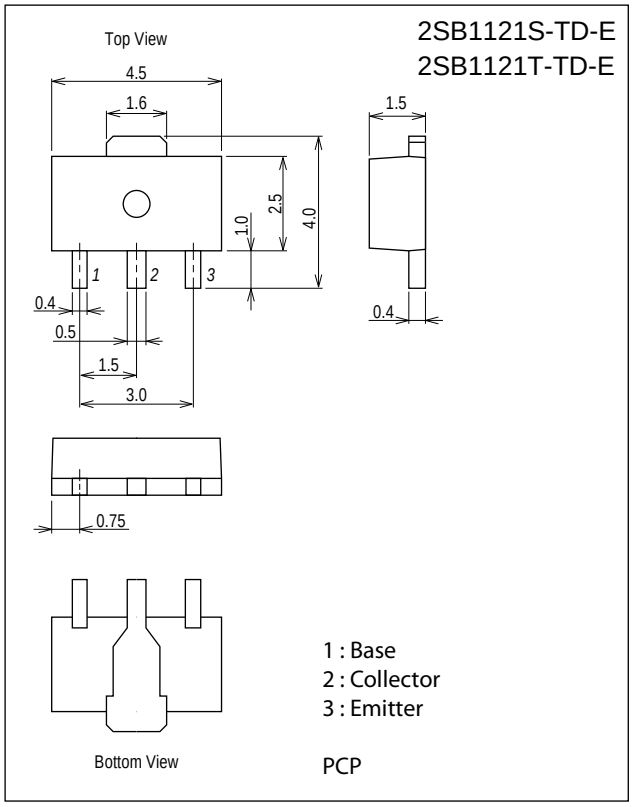
Features
- Adoption of FBET, MBIT processes
- Large current capacity and wide SOA
- Low collector to emitter saturation voltage
- Fast switching speed
- Ultrasmall size making it easy to provide high-density, small-sized hybrid IC's

Specifications
Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		-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

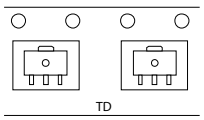
Continued on next page.

Package Dimensions
unit : mm (typ)
7007B-004

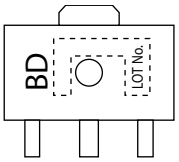


Product & Package Information
- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

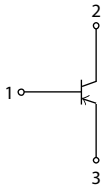
Packing Type: TD



Marking



Electrical Connection



2SB1121

Continued from preceding page.

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	Tstg		-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.

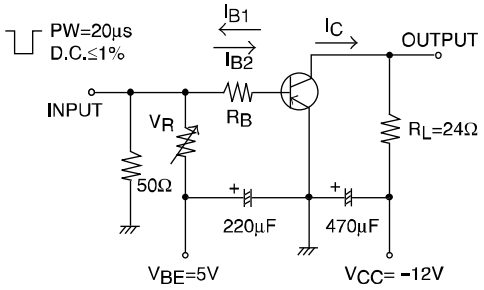
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=-20V, I_E=0A			-0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=-4V, I_C=0A			-0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=-2V, I_C=-100mA	140*		400*	
	$h_{FE}2$	V_{CE}=-2V, I_C=-1.5A	65			
Gain-Bandwidth Product	f_T	V_{CE}=-10V, I_C=-50mA		150		MHz
Output Capacitance	Cob	V_{CB}=-10V, f=1MHz		32		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C=-1.5A, I_B=-75mA		-0.35	-0.6	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_C=-1.5A, I_B=-75mA		-0.85	-1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0A	-30			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA, R_{BE}=∞	-25			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0A	-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

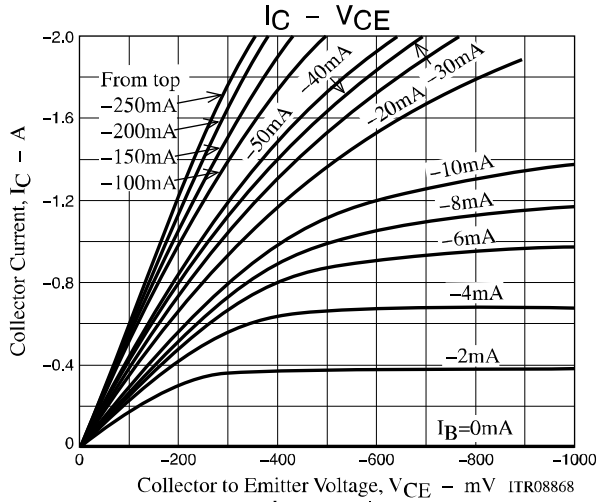


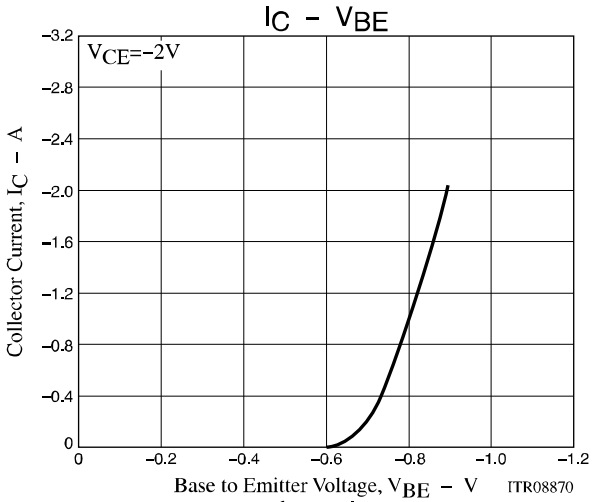
I_C=20I_{B1}= −20I_{B2}= −0.5A

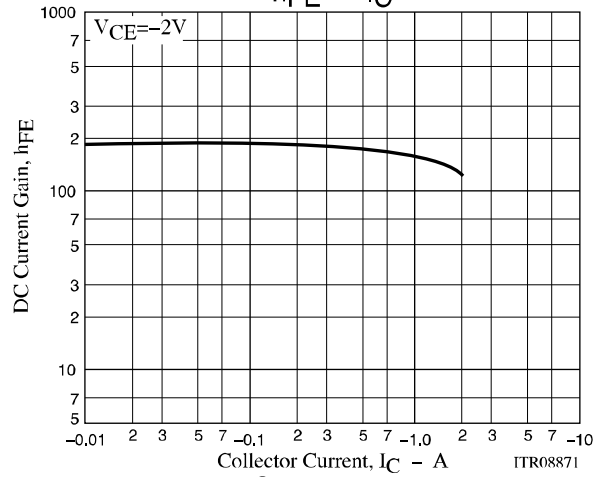
Ordering Information

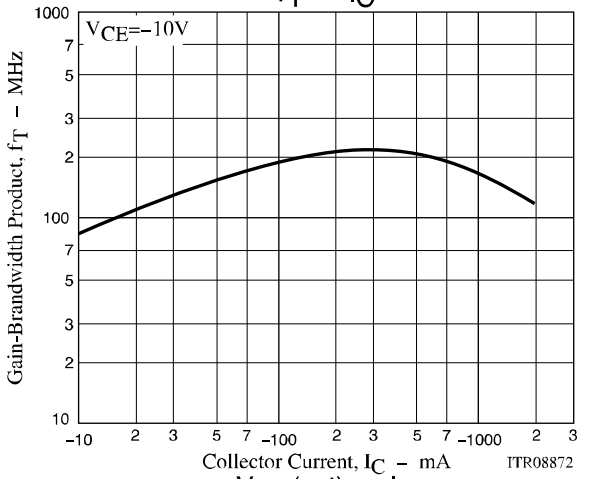
Device	Package	Shipping	Memo
2SB1121S-TD-E 2SB1121T-TD-E	PCP	1,000pcs./reel	Pb-Free

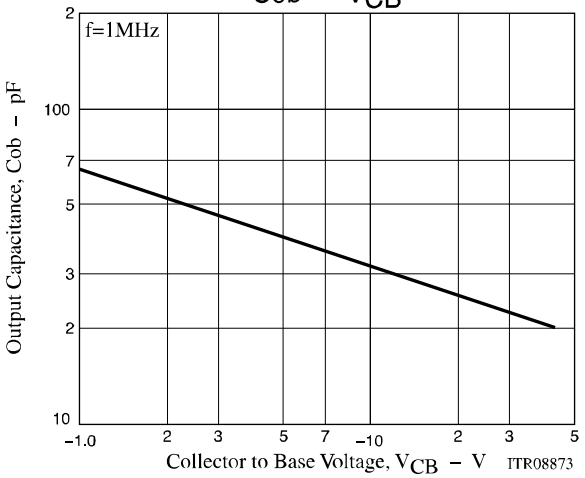
2SB1121

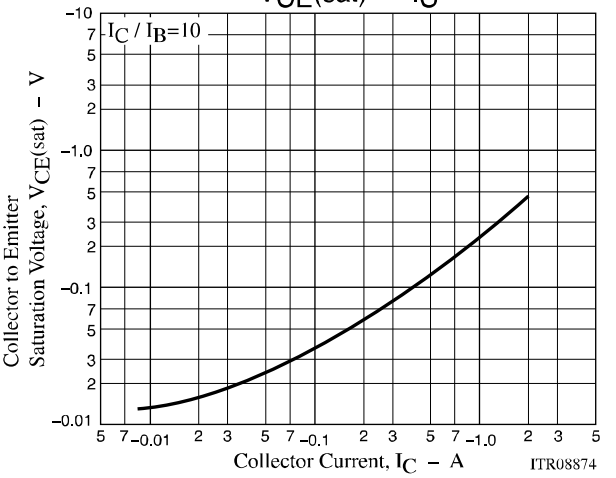

IC – VCE
From top
–250mA
–200mA
–150mA
–100mA
–40mA
–30mA
–20mA
–50mA
–10mA
–8mA
–6mA
–4mA
–2mA
IB=0mA
Collector Current, IC – A
Collector to Emitter Voltage, VCE – mV
ITR08868

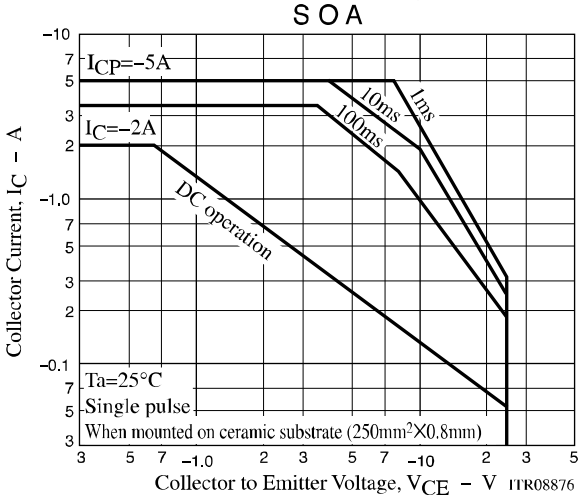

IC – VBE
VCE=–2V
Collector Current, IC – A
Base to Emitter Voltage, VBE – V
ITR08870

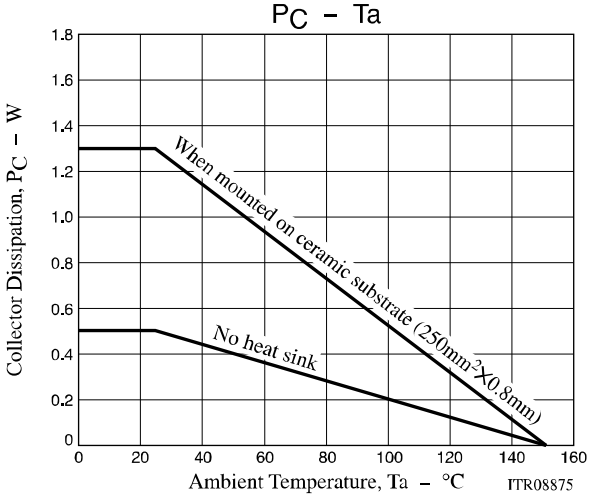

hFE – IC
VCE=–2V
DC Current Gain, hFE
Collector Current, IC – A
ITR08871


fT – IC
VCE=–10V
Gain-Brandwidth Product, fT – MHz
Collector Current, IC – mA
ITR08872


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V
ITR08873


VCE(sat) – IC
IC / IB=10
Collector to Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
ITR08874

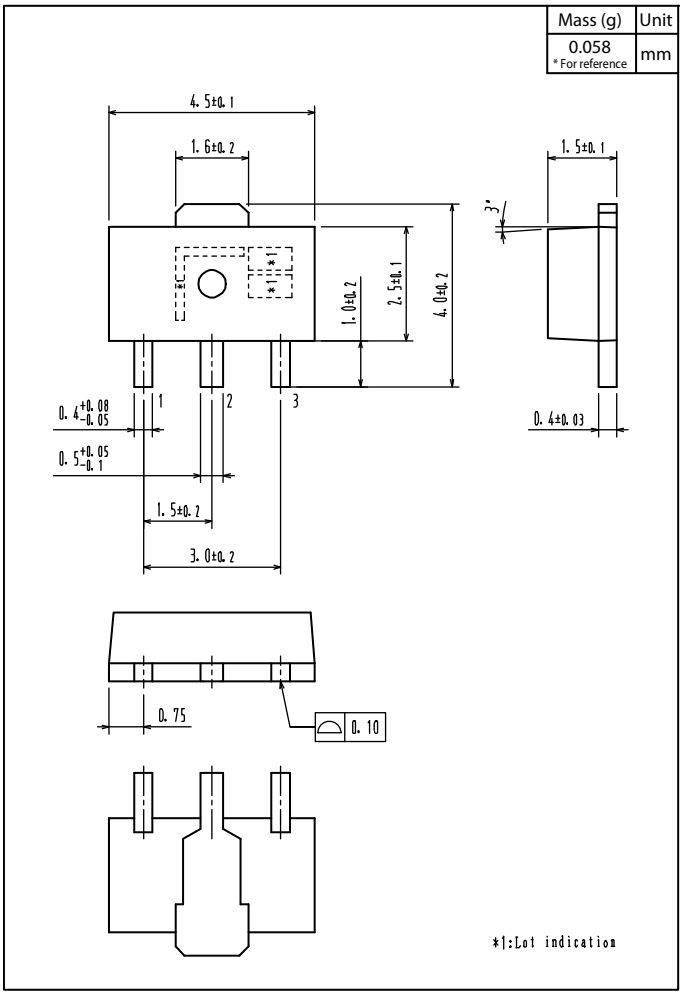

S O A
ICP=–5A
IC=–2A
1ms
10ms
100ms
DC operation
Ta=25°C
Single pulse
When mounted on ceramic substrate (250mm²×0.8mm)
Collector Current, IC – A
Collector to Emitter Voltage, VCE – V
ITR08876


PC – Ta
When mounted on ceramic substrate (250mm²×0.8mm)
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
ITR08875

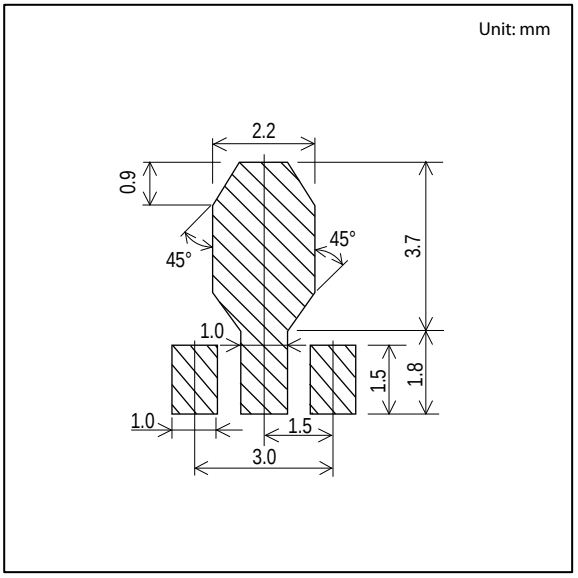
2SB1121

Outline Drawing

2SB1121S-TD-E
2SB1121T-TD-E



Land Pattern Example



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