Ordering number : EN1787B

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SB1121 / 2SD1621 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Current Driver Applications

Applications

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

Features

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

Specifications ( ) : 2SB1121

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
Collector Dissipation	P_C		500	mW
		Mounted on a ceramic board (250mm²×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Marking 2SB1121 : BD

~~2SD1621 : DD~~

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Electrical Characteristics at Ta=25°C

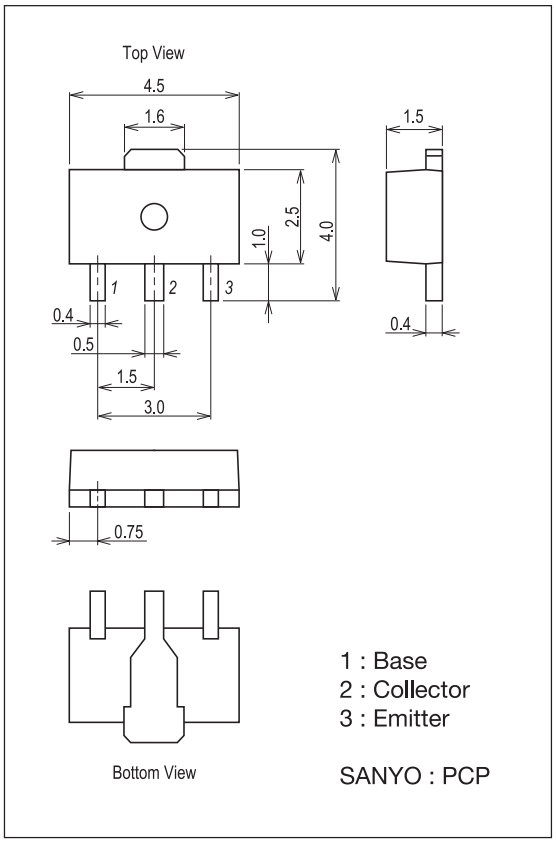
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)20V, I_E=0A			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0A			(–)0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)100mA	100*		560*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)1.5A	65			
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		150		MHz
Output Capacitance	Cob	V_{CB}=(–)10V, f=1MHz		(32)~~19~~		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(–)1.5A, I_B=(–)75mA		(-0.35)~~0.18~~	(-0.6)~~0.4~~	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)~~60~~		ns
Storage Time	t_{stg}	See specified Test Circuit.		(350)~~550~~		ns
Fall Time	t_f	See specified Test Circuit.		(25)~~25~~		ns

*: The 2SB1121 ~~/ 2SD1621~~ are classified by 100mA h_{FE} as follows:

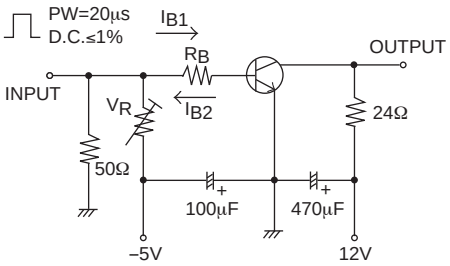
Rank	R	S	T	U
h_{FE}	100 to 200	140 to 280	200 to 400	280 to 560

Package Dimensions

unit : mm (typ)
7007B-004



Switching Time Test Circuit



I_C=20I_{B1}= –20I_{B2}=500mA
(For PNP, the polarity is reversed)