

# PBHV8110DW-AU

## NPN Low Vce(sat) Transistor

**Voltage**

**100V**

**Current**

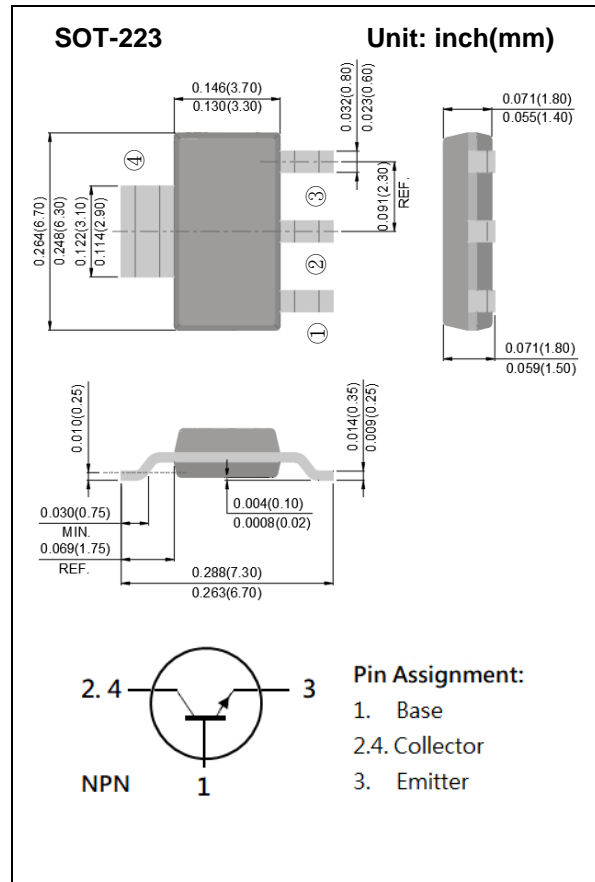
**1A**

### Features

- Silicon NPN epitaxial type
- Low Vce(sat) 0.35V(max)@Ic/Ib= 500mA / 50mA
- High collector current capability
- Excellent DC current gain characteristics
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Standard
- PNP complement: PBHV9110DW-AU

### Mechanical Data

- Case : SOT-223 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.123 grams
- Marking : 8110DW



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	V <sub>CBO</sub>	120	V
Collector-Emitter Voltage	V <sub>CEO</sub>	100	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current (DC)	I <sub>C</sub>	1	A
Collector Current (Pulse)	I <sub>CP</sub>	3	A
Power Dissipation	P <sub>D</sub>	2.6	W
Junction Temperature	T <sub>J</sub>	150	°C
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C
Thermal Resistance from Junction to Ambient <sup>(Note)</sup>	R <sub>θJA</sub>	48	°C/W

Note: Mounted on FR4 PCB at 1 inch square copper pad.

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### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0A	100	-	-	V
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> = 0.1mA, I <sub>E</sub> = 0A	120	-	-	V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> = 0.1mA, I <sub>C</sub> = 0A	6	-	-	V
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 120V, I <sub>E</sub> = 0A	-	-	500	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> = 6V, I <sub>C</sub> = 0A	-	-	500	nA
<b>ON characteristics</b>						
DC Current Gain (Note1)	h <sub>FE</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 150mA	140	-	330	-
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 500mA	100	-	300	
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 1A	40	-	-	
Collector-Emitter Saturation Voltage (Note1)	V <sub>CE(SAT)</sub>	I <sub>C</sub> = 0.1A, I <sub>B</sub> = 10mA	-	38	120	mV
		I <sub>C</sub> = 0.5A, I <sub>B</sub> = 50mA	-	117	350	
		I <sub>C</sub> = 1A, I <sub>B</sub> = 0.1A	-	220	450	
Base-Emitter Saturation voltage (Note1)	V <sub>BE(SAT)</sub>	I <sub>C</sub> = 0.1A, I <sub>B</sub> = 10mA	-	-	1.0	V
		I <sub>C</sub> = 0.5A, I <sub>B</sub> = 50mA	-	-	1.1	
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>E</sub> = -50mA	100	-	-	MHz
Collector Output Capacitance	C <sub>OB</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0A, f=1MHz	-	-	10	pF

Note : 1. Pulse width ≤ 300us, Duty cycle ≤ 2%

# PBHV8110DW-AU

## TYPICAL CHARACTERISTIC CURVES

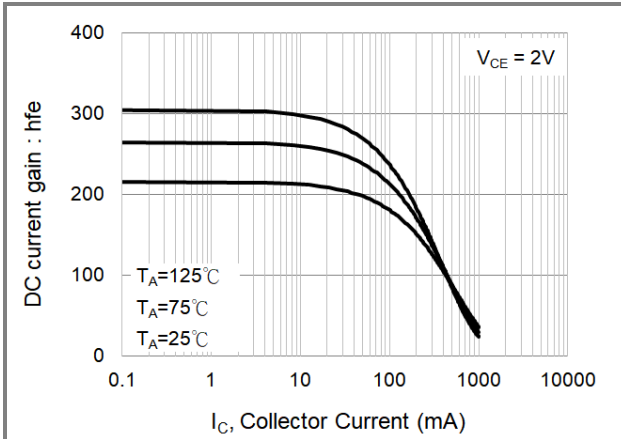


Fig.1 DC Current Gain

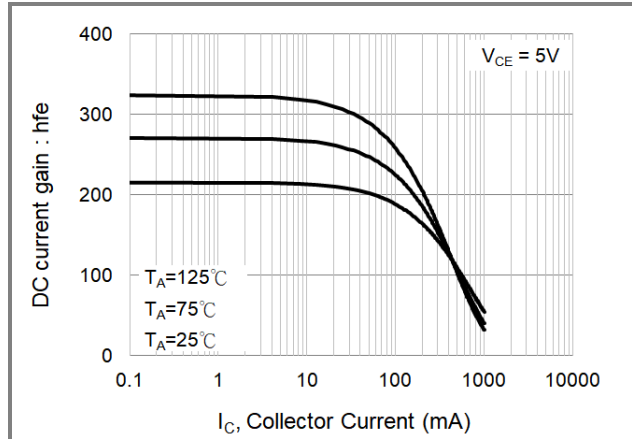


Fig.2 DC Current Gain

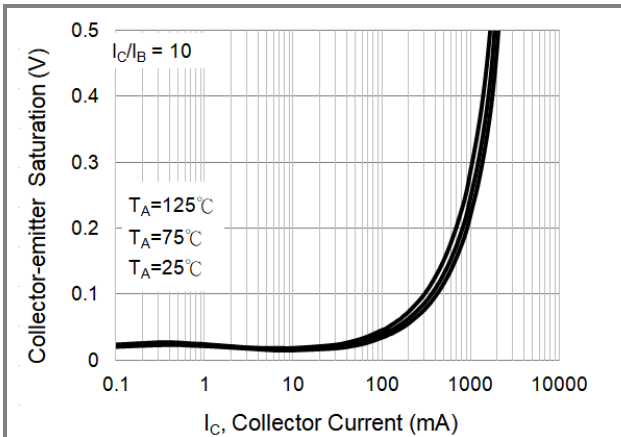


Fig.3 Collector-Emitter Saturation Voltage

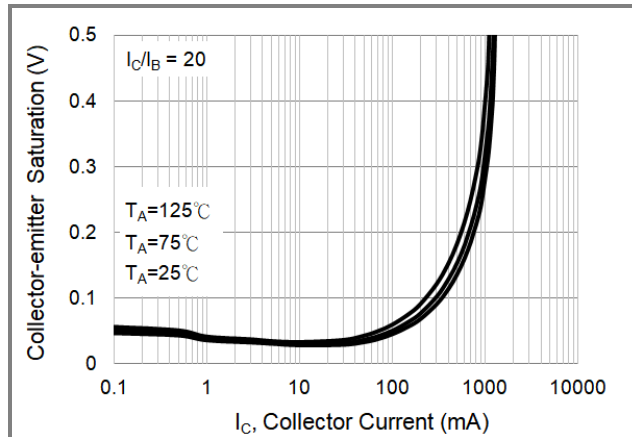


Fig.4 Collector-Emitter Saturation Voltage

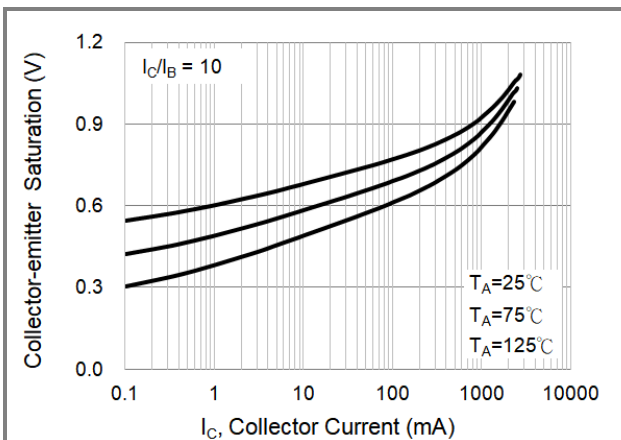


Fig.5 Base-Emitter Saturation Voltage

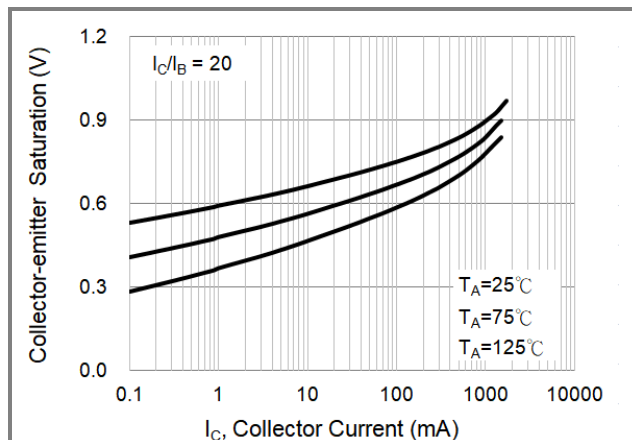
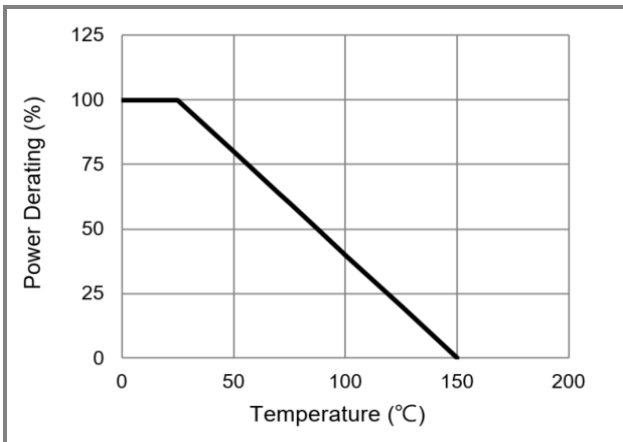
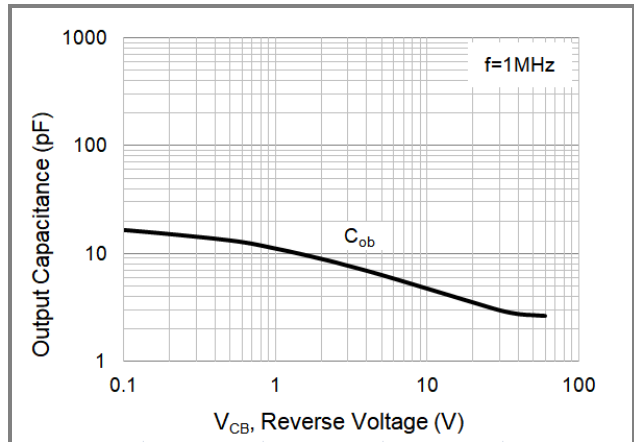
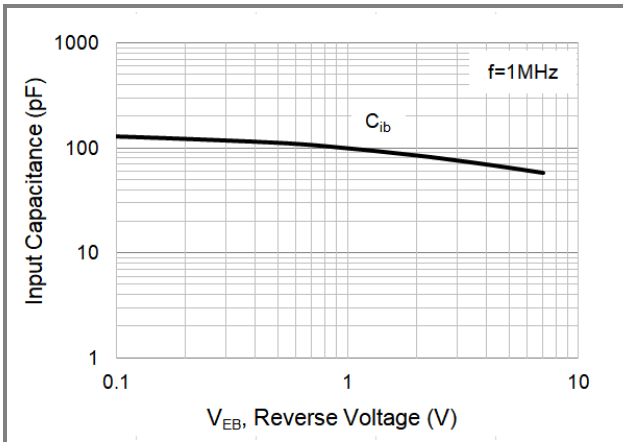
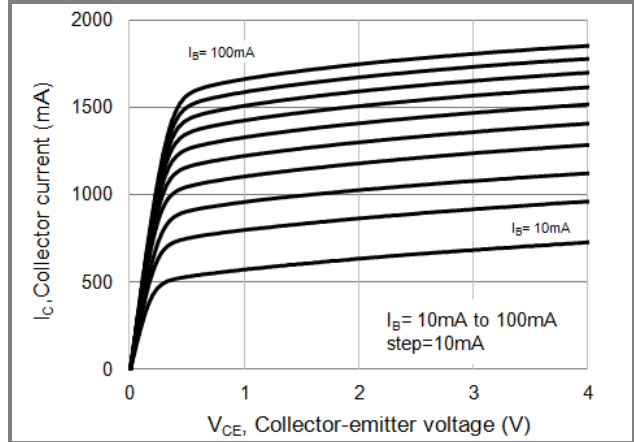
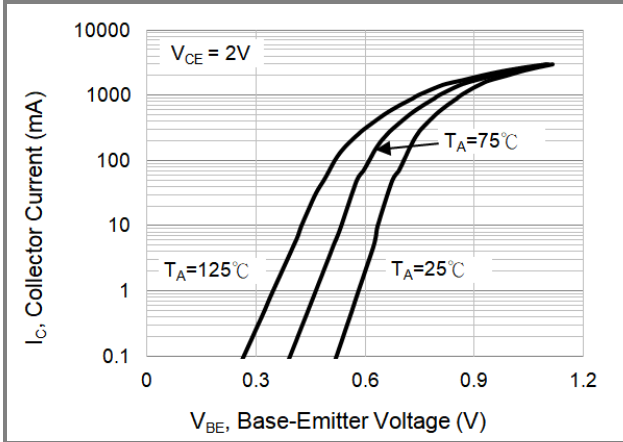


Fig.6 Base-Emitter Saturation Voltage

# PBHV8110DW-AU

## TYPICAL CHARACTERISTIC CURVES

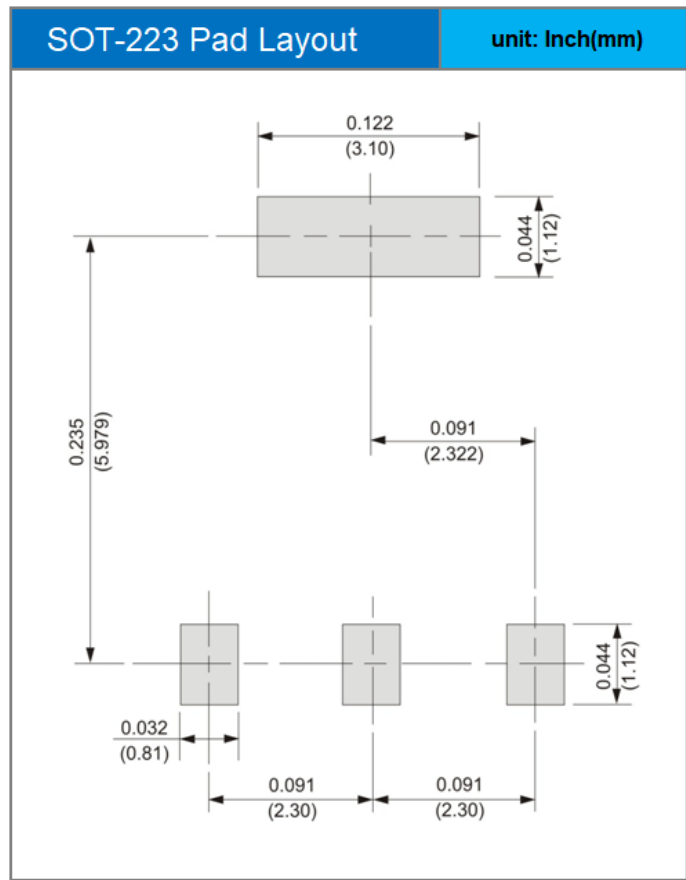


# PBHV8110DW-AU

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
PBHV8110DW-AU	SOT-223	2,500 pcs / 13" reel	8110DW

## Mounting Pad Layout



## **PBHV8110DW-AU**

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