

PBHV8110DW-AU

NPN Low Vce(sat) Transistor

Voltage

100V

Current

1A

Features

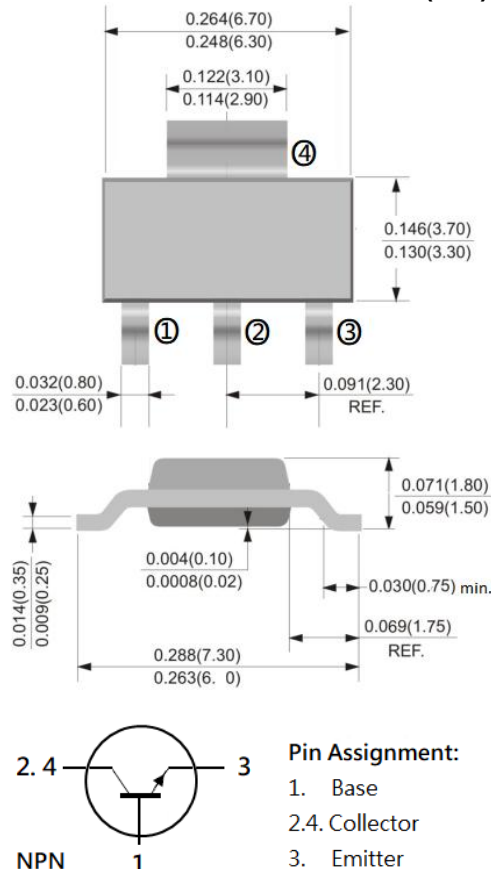
- Silicon NPN epitaxial type
- Low Vce(sat) 0.35V(max) @ Ic/Ib= 500mA / 50mA
- High collector current capability
- Excellent DC current gain characteristics
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC61249 Standard
- PNP complement: PBHV9110DW-AU

Mechanical Data

- Case: SOT-223 Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.043 ounces, 0.123 grams
- Marking: 8110DW

SOT-223

Unit: inch(mm)



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

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

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



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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}, I_B=0\text{A}$	100	-	-	V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=0.1\text{mA}, I_E=0\text{A}$	120	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=0.1\text{mA}, I_C=0\text{A}$	6	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0\text{A}$	-	-	500	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0\text{A}$	-	-	500	nA
ON characteristics						
DC Current Gain (Note1)	h_{FE}	$V_{CE}=2\text{V}, I_C=150\text{mA}$	140	-	330	-
		$V_{CE}=5\text{V}, I_C=500\text{mA}$	100	-	300	
		$V_{CE}=5\text{V}, I_C=1\text{A}$	40	-	-	
Collector-Emitter Saturation Voltage (Note1)	$V_{CE(SAT)}$	$I_C=0.1\text{A}, I_B=10\text{mA}$	-	38	120	mV
		$I_C=0.5\text{A}, I_B=50\text{mA}$	-	117	350	
		$I_C=1\text{A}, I_B=0.1\text{A}$	-	220	450	
Base-Emitter Saturation voltage (Note1)	$V_{BE(SAT)}$	$I_C=0.1\text{A}, I_B=10\text{mA}$	-	-	1.0	V
		$I_C=0.5\text{A}, I_B=50\text{mA}$	-	-	1.1	
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_E=-50\text{mA}$	100	-	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB}=10\text{V}, I_E=0\text{A},$ $f=1\text{MHz}$	-	-	10	pF

Note: 1. Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

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TYPICAL CHARACTERISTIC CURVES

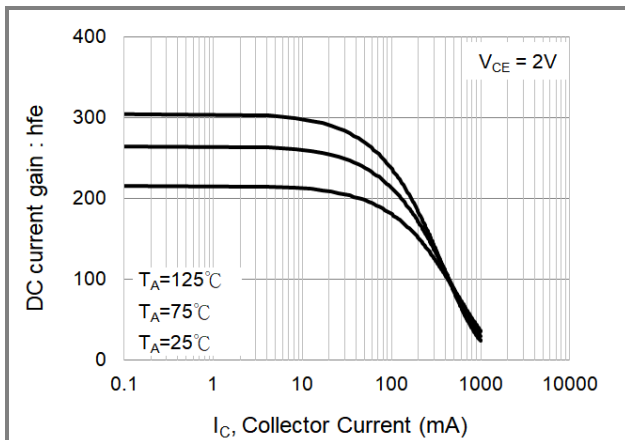


Fig.1 DC Current Gain

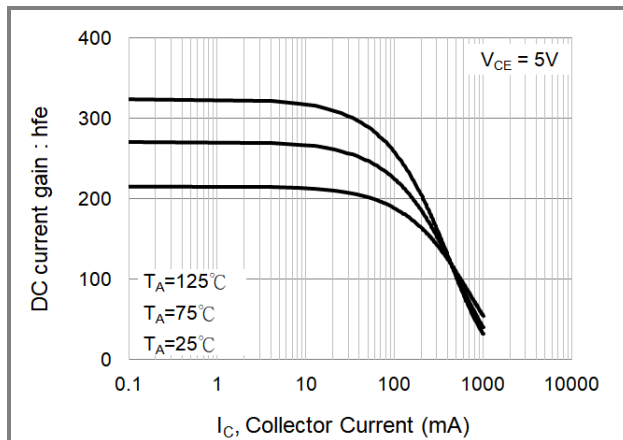


Fig.2 DC Current Gain

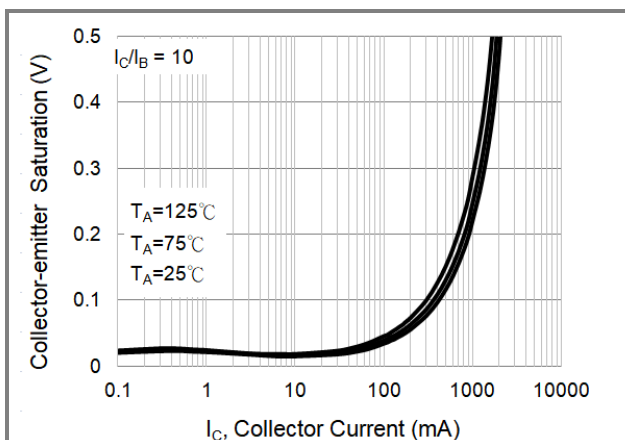


Fig.3 Collector-Emitter Saturation Voltage

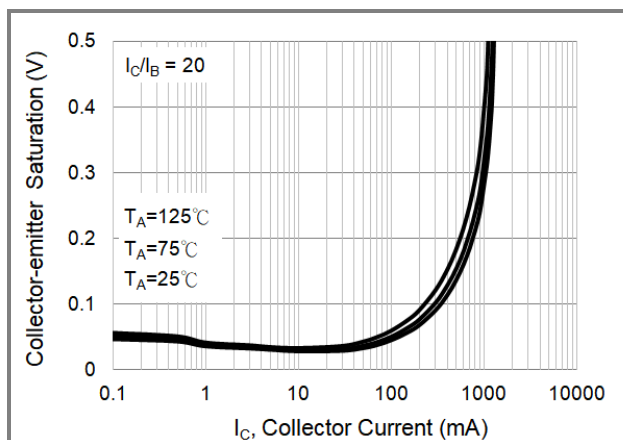


Fig.4 Collector-Emitter Saturation Voltage

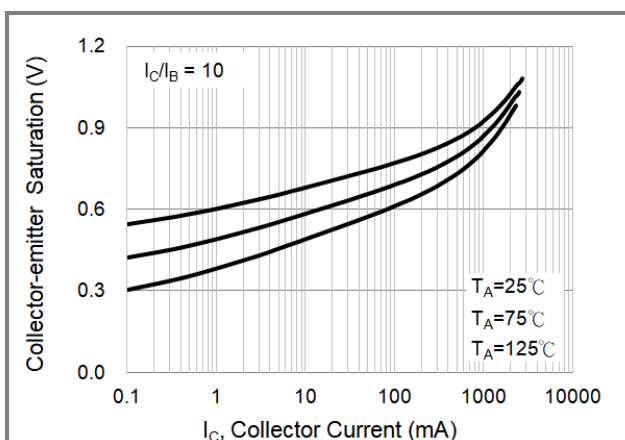


Fig.5 Base-Emitter Saturation Voltage

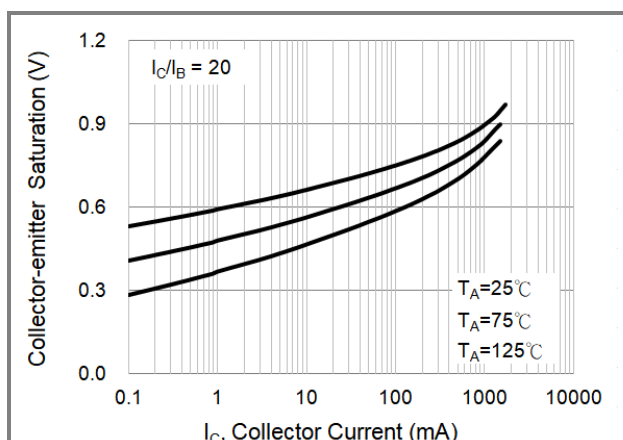


Fig.6 Base-Emitter Saturation Voltage

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TYPICAL CHARACTERISTIC CURVES

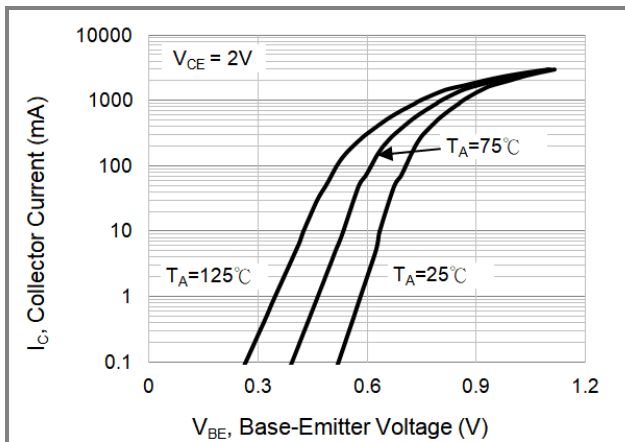


Fig.7 Base-Emitter Voltage

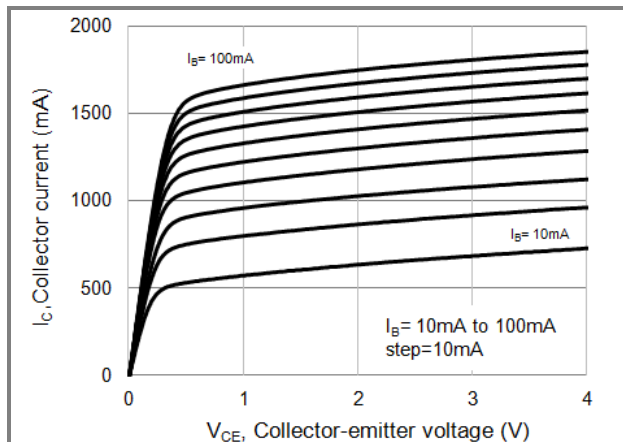


Fig.8 Collector Current

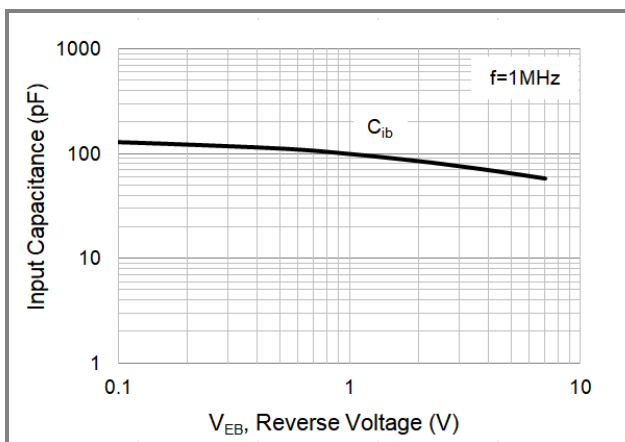


Fig.9 Input Capacitance

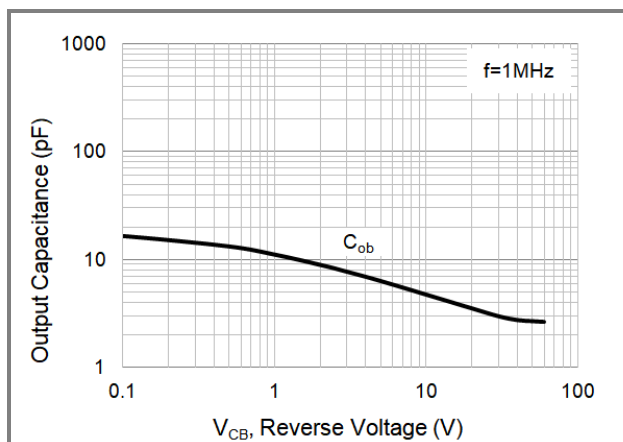


Fig.10 Output Capacitance

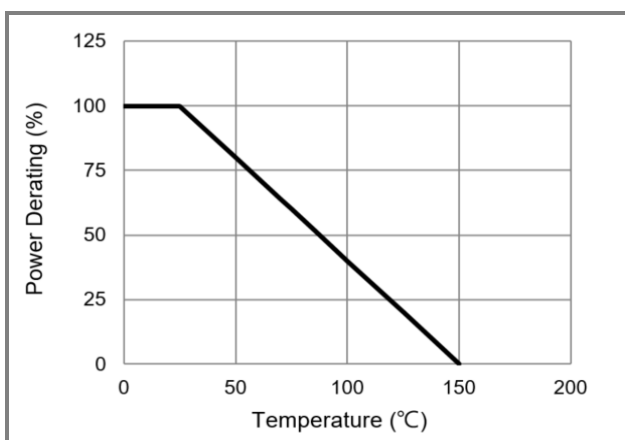


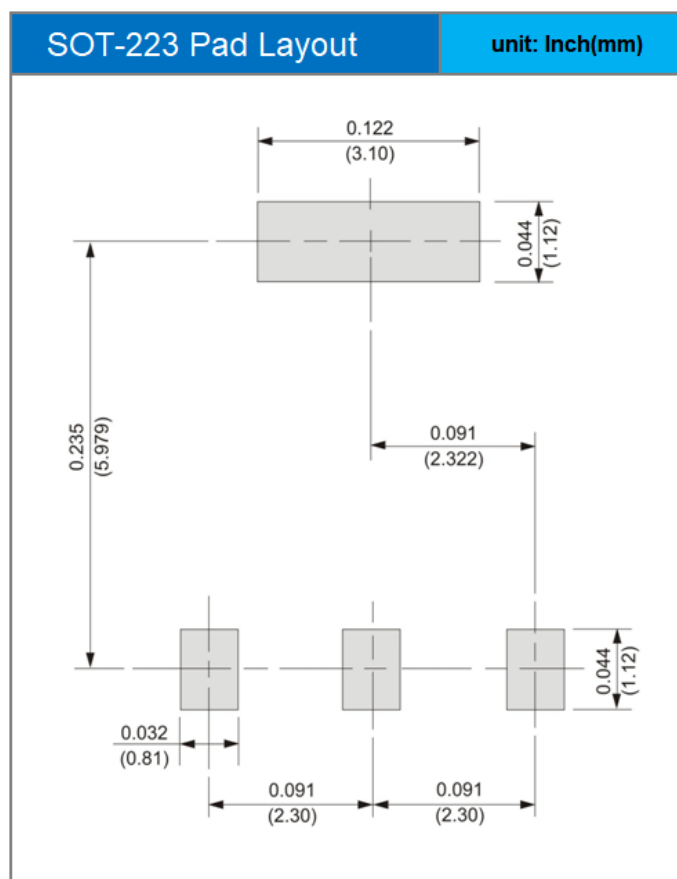
Fig.11 Power Derating Curve

PBHV8110DW-AU

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing type	Marking	Version
PBHV8110DW-AU_R2_000A1	SOT-223	2,500 pcs / 13" reel	8110DW	Halogen free

MOUNTING PAD LAYOUT





PBHV8110DW-AU

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