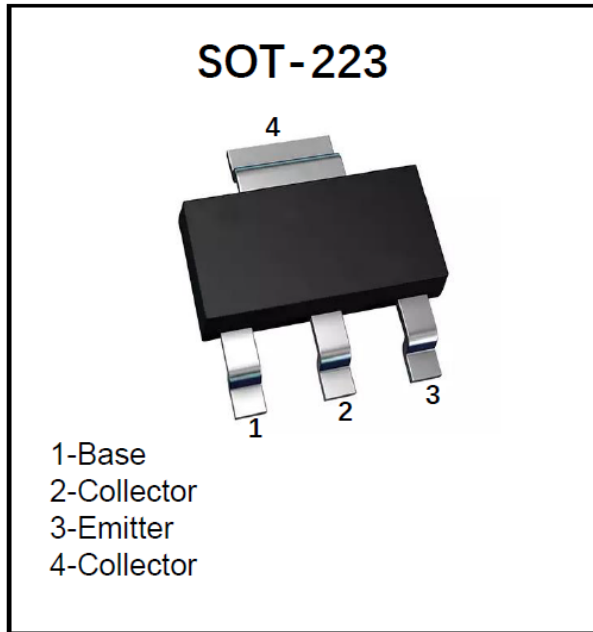


NPN Low VCEsat Transistor



Features

- Moisture Sensitivity Level 1
- Low collector-emitter saturation voltage
- Part no. with suffix "Q" means AEC-Q101 qualified

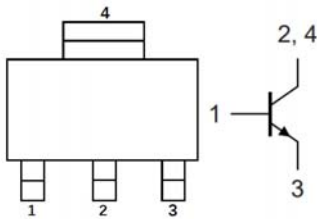
Application

- DC/DC converters; Supply line switching
- Battery charger; LED backlighting

Mechanical Data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** PB4350.

■Equivalent circuit



■Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Emitter Voltage	V_{CEO}	V	50
Collector-Base Voltage	V_{CBO}	V	60
Emitter-Base Voltage	V_{EBO}	V	6
Collector Current	I_C	A	3
Power Dissipation	P_D	W	0.65 ⁽¹⁾
		W	1.35 ⁽²⁾
		W	1.7 ⁽³⁾



PBSS4350ZQ

RoHS
COMPLIANT

Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	$^{\circ}\text{C/W}$	192 ⁽¹⁾
			92 ⁽²⁾
			74 ⁽³⁾
Operation Junction Temperature	T_j	$^{\circ}\text{C}$	-55 to +150
Storage Temperature	T_{stg}	$^{\circ}\text{C}$	-55 to +150

Note:

- (1) Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
- (2) Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1cm².
- (3) Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6cm².

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

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=100\mu\text{A}, I_E=0$	60		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=10\text{mA}, I_B=0$	50		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=100\mu\text{A}, I_C=0$	6		
Collector-base cut-off current	I_{CBO}	nA	$V_{CB}=50\text{V}, I_E=0$			100
Emitter-base cut-off current	I_{EBO}	nA	$V_{EB}=5\text{V}, I_C=0$			100
DC current gain	$h_{FE} 1$		$V_{CE}=2\text{V}, I_C=0.5\text{A}$	200		
	$h_{FE} 2$		$V_{CE}=2\text{V}, I_C=1\text{A}$	200		
	$h_{FE} 3$		$V_{CE}=2\text{V}, I_C=2\text{A}$	100		
Collector-emitter saturation voltage	$V_{CE(sat)}$	mV	$I_C=0.5\text{A}, I_B=50\text{mA}$			90
			$I_C=1\text{A}, I_B=50\text{mA}$			170
			$I_C=2\text{A}, I_B=200\text{mA}$			290
Collector-emitter saturation resistance	$R_{CE(sat)}$	m Ω	$I_C=2\text{A}, I_B=200\text{mA}$			145
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=2\text{A}, I_B=200\text{mA}$			1.2
Base-emitter turn on voltage	V_{BEon}	V	$V_{CE}=2\text{V}, I_C=1\text{A}$			1.1
Transition frequency	f_T	MHz	$V_{CE}=5\text{V}, I_C=100\text{mA}, f=100\text{MHz}$	100		

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PBSS4350ZQ	F2	Approximate 0.11	2500	5000	25000	13" reel

■ Characteristics (Typical)

Fig.1 - Static characteristic

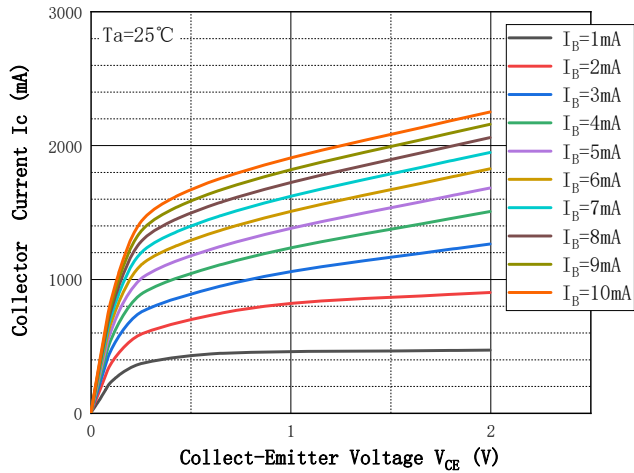


Fig.2 - DC Current Gain

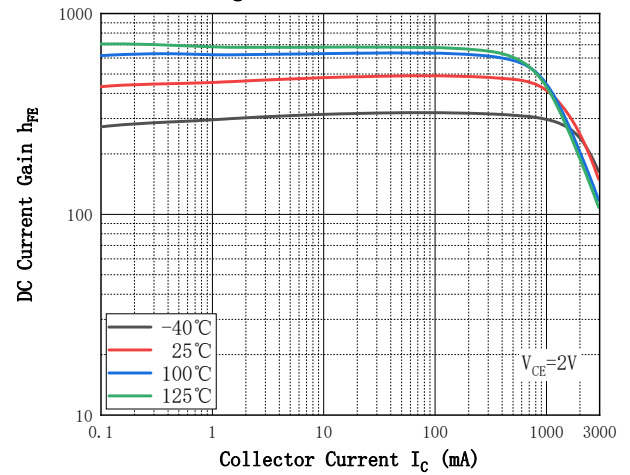


Fig.3 - Collect-Emittor Saturation Voltage

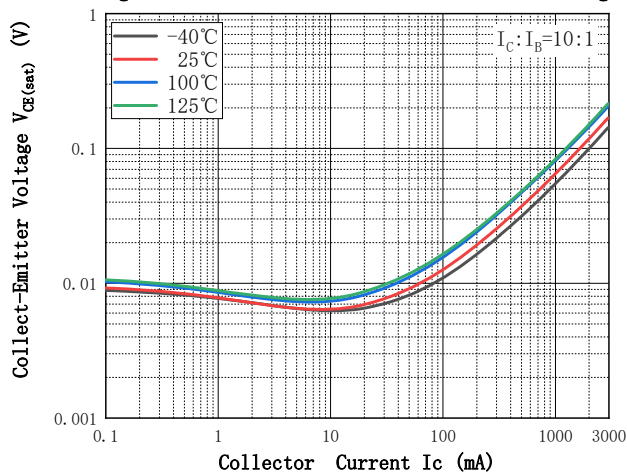


Fig.4 - Collect-Emittor Saturation Voltage

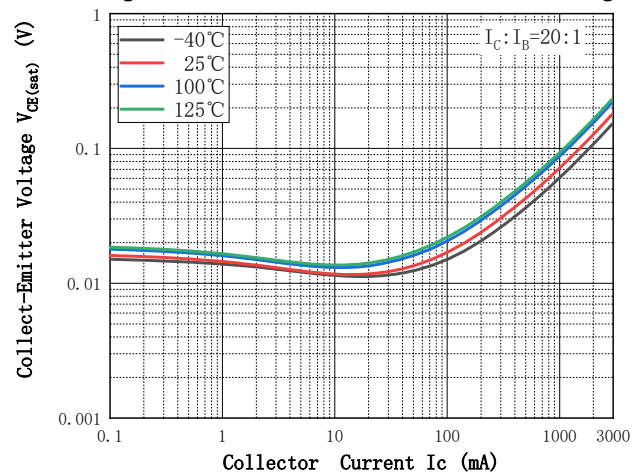


Fig.5 - Base-Emittor Voltage

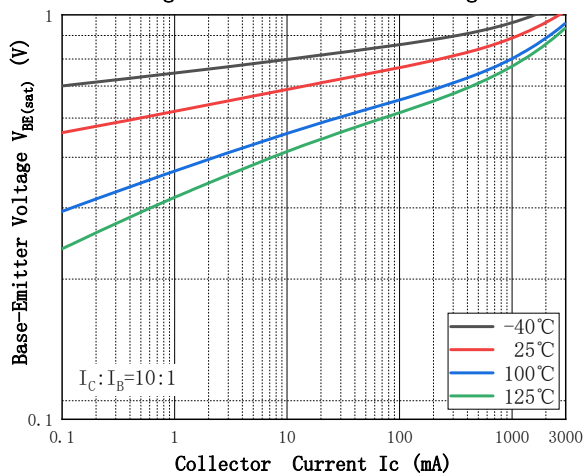


Fig.6 - Base-Emittor Voltage

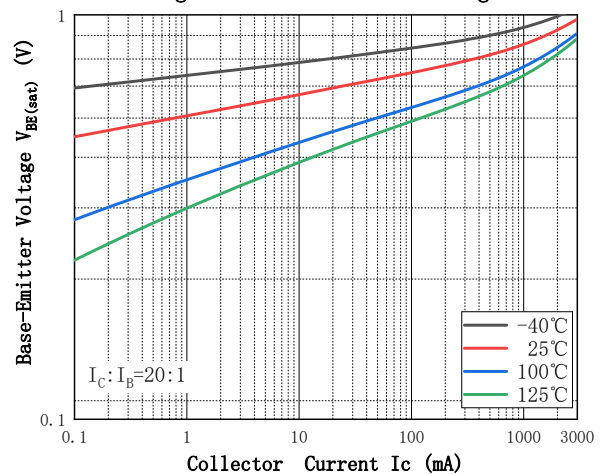


Fig.7 - Base-Emitter On Voltage

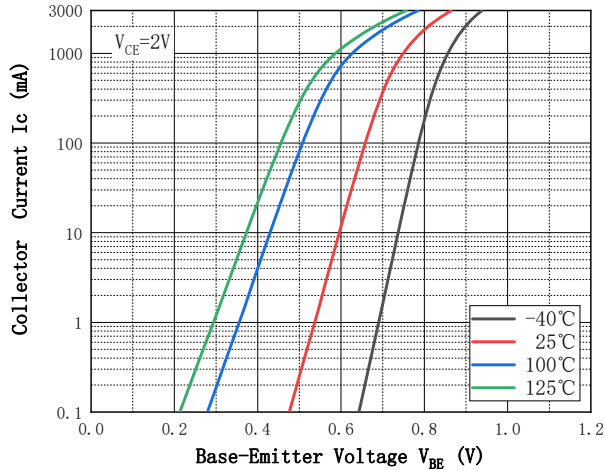
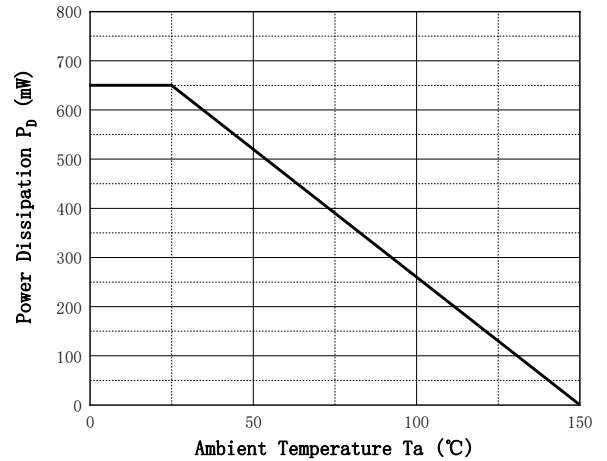
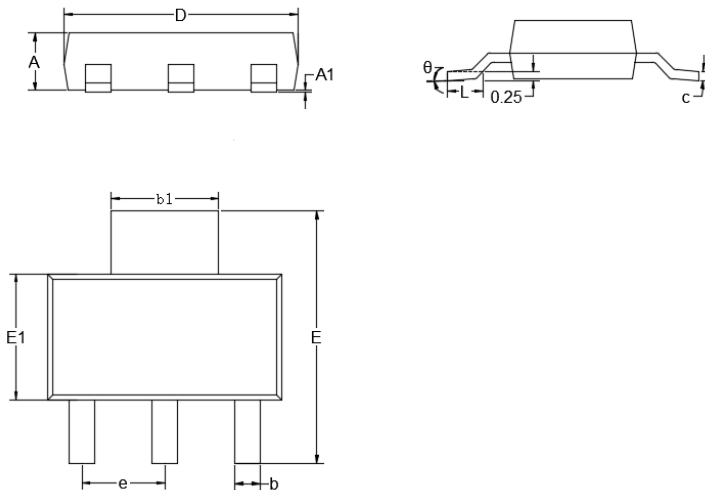


Fig.8 - Power Derating Curve

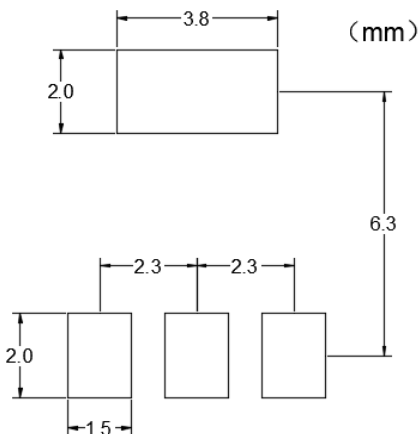


■SOT-223 Package Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

■SOT-223 Suggested Pad Layout



NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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