

# BRPBSS5350TQ

Rev.A Feb.-2025

## / Descriptions

SOT-23          PNP          Silicon PNP transistor in a SOT-23 Plastic Package.

## / Features

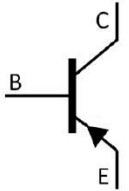
AEC-Q101

Low  $V_{CE(sat)}$ , high current, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

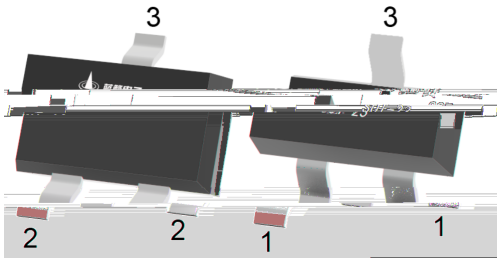
## / Applications

General purpose switching and muting, LCD back-lighting, supply line switching circuits, Meet the stringent requirements of automotive applications.

## / Equivalent Circuit



## / Pinning



PIN 1 Base          PIN 2 Emitter          PIN 3 Collector

## / $h_{FE}$ Classifications & Marking

$h_{FE}$ Range	>200
Marking	ZDQ

## / Absolute Maximum Ratings(Ta=25 )

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CB0}$	-50	V
Collector to Emitter Voltage	$V_{CEO}$	-50	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-2	A
Peak Collector Current	$I_{CM}$	-5	A
Base Current	$I_B$	-0.5	A
Total Power Dissipation	$P_{tot}^{(1)}$	300	mW
Total Power Dissipation	$P_{tot}^{(1)(2)}$	1.2	W
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-65 150	

1 tp 100 ms  $\delta$  0.25

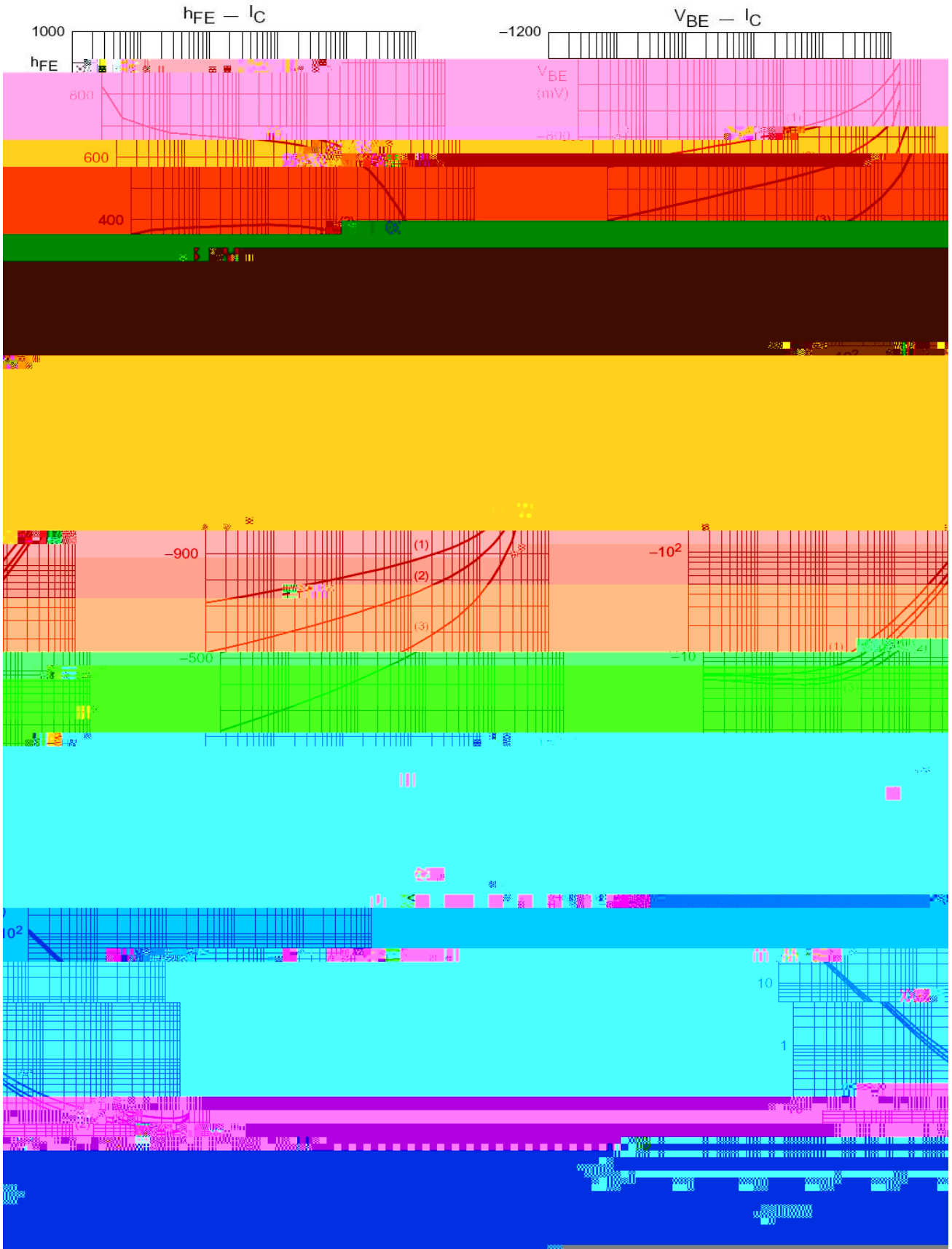
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## / Electrical Characteristics(Ta=25 )

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-50V$ $I_E=0$			-100	nA
		$V_{CB}=-50V$ $I_E=0$ $T_j=150$			-50	$\mu A$
emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-5.0V$ $I_C=0$			-100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-100mA$	200			
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-500mA$	200			
	$h_{FE(3)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$	200			
	$h_{FE(4)*}$	$V_{CE}=-2.0V$ $I_C=-2.0A$	130			
	$h_{FE(5)*}$	$V_{CE}=-2.0V$ $I_C=-3.0A$	80			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)*}$	$I_C=-500mA$ $I_B=-50mA$			-80	mV
	$V_{CE(sat)(2)*}$	$I_C=-2.0A$ $I_B=-100mA$			-320	mV
Equivalent On-Resistance	$R_{CE(sat)*}$	$I_C=-2.0A$ $I_B=-200mA$		90	135	m $\Omega$
Base-Emitter Saturation Voltage	$V_{BE(sat)*}$	$I_C=-2.0A$ $I_B=-100mA$			-1.1	V
		$I_C=-3.0A$ $I_B=-300mA$			-1.2	V
Base-Emitter Voltage	$V_{BE(ON)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$			-1.2	V
Transition Frequency	$f_T$	$V_{CE}=-5.0V$ $I_C=-100mA$ $f=100MHz$	100			MHz
Collector Capacitance	$C_C$	$V_{CB}=-10V$ $I_E=0$ $f=1.0MHz$			35	pF

\* : tp 300 $\mu s$ ;  $\delta$  0.02.

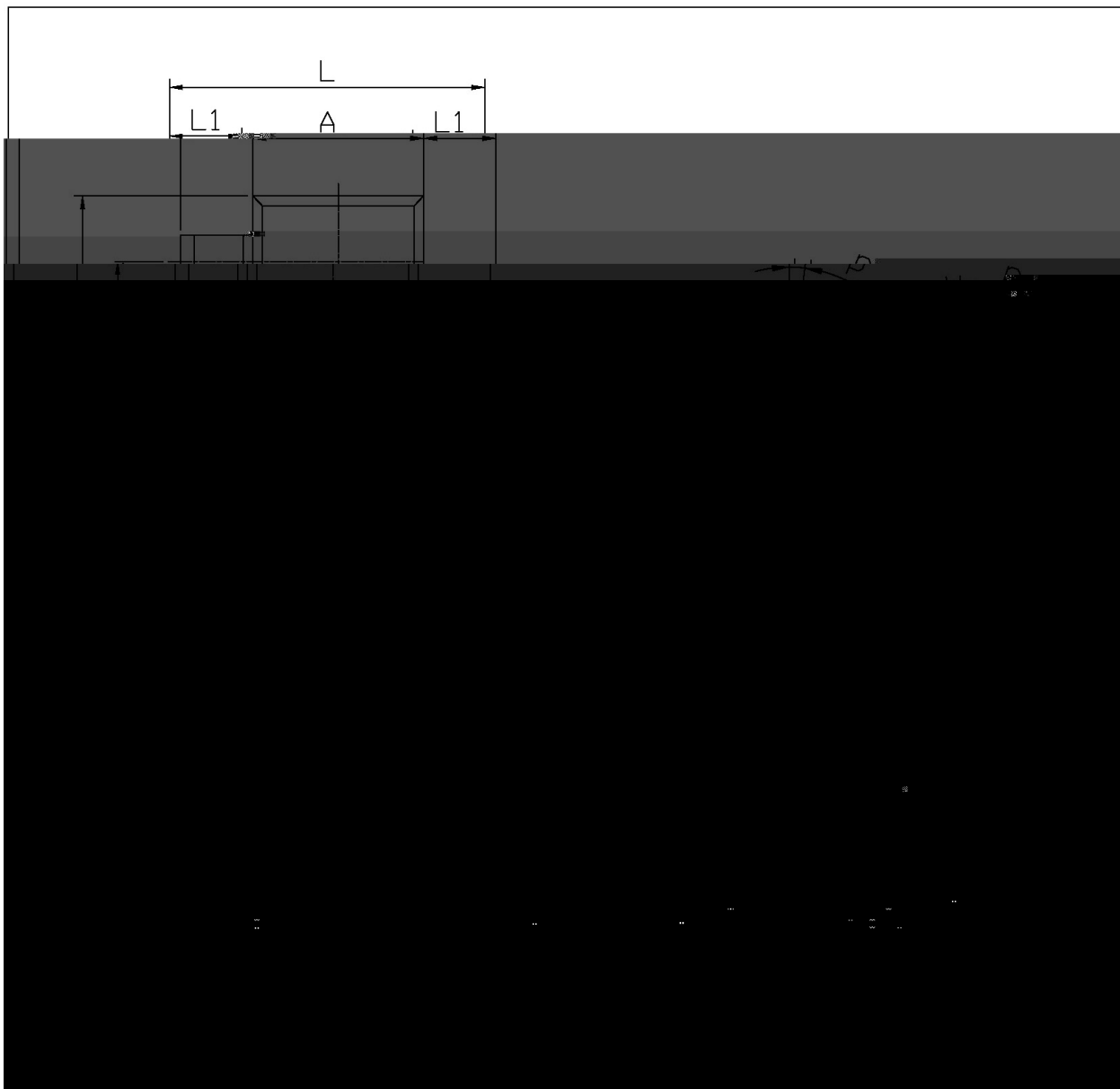
/ Electrical Characteristic Curve



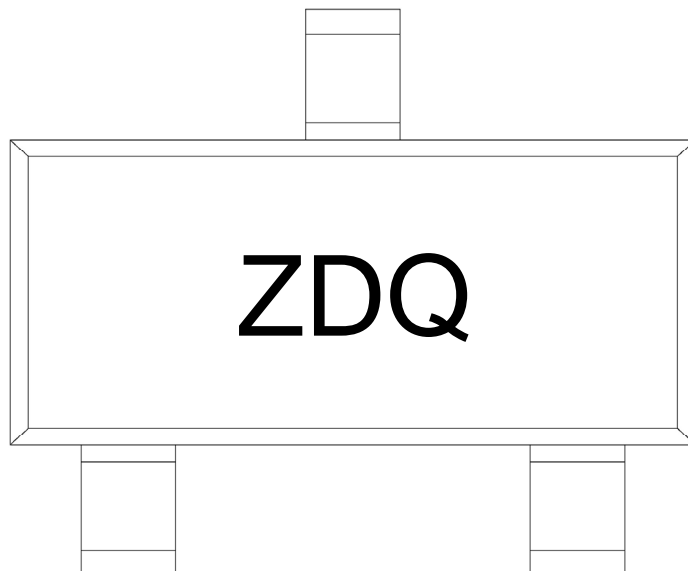
/ Package Dimensions

SOT-23

单位: mm



**/ Marking Instructions**



ZD

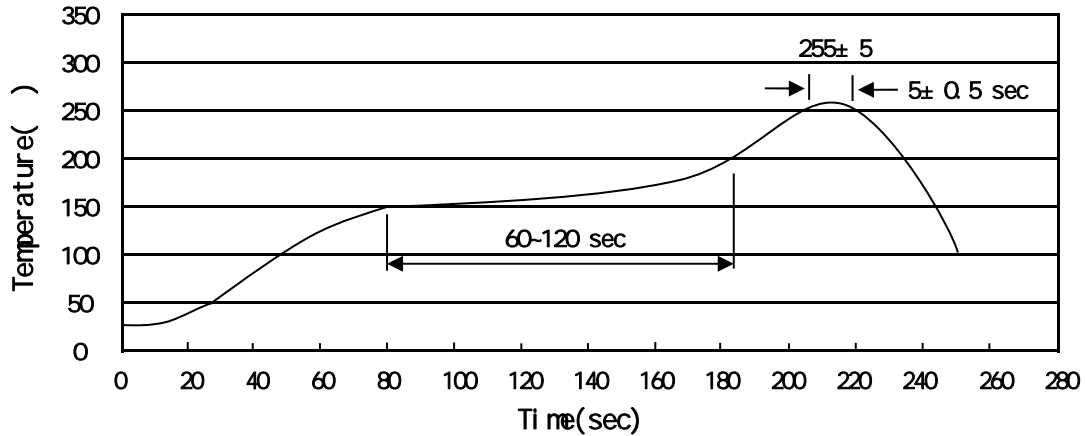
Q

Note:

ZD      Product Type

Q:      Automobile halogen-free product Code

( ) /



Note:

- 1            150   200            60   120sec;    1.Preheating:150~200 , Time:60~120sec.
- 2            255±5                    5±0.5sec;    2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3                            2   10 /sec.            3. Cooling Speed: 2~10 /sec.

**/ Resistance to Soldering Heat Test Conditions**

260±5                    10±1 sec.                    Temp.:260±5                    Time:10±1 sec

**/ Packaging SPEC.**

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7 x8	180x120x180	390x385x205

**/ Notices**