

/ Descriptions

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

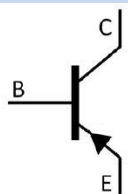
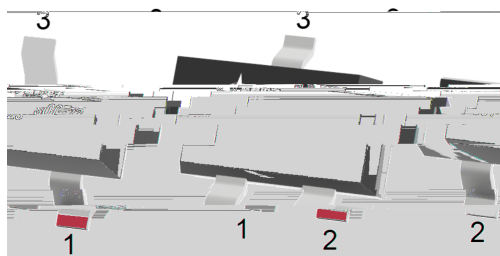
/ Features

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($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-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 $t_p \leq 100 \text{ ms}$ $\delta \leq 0.25$

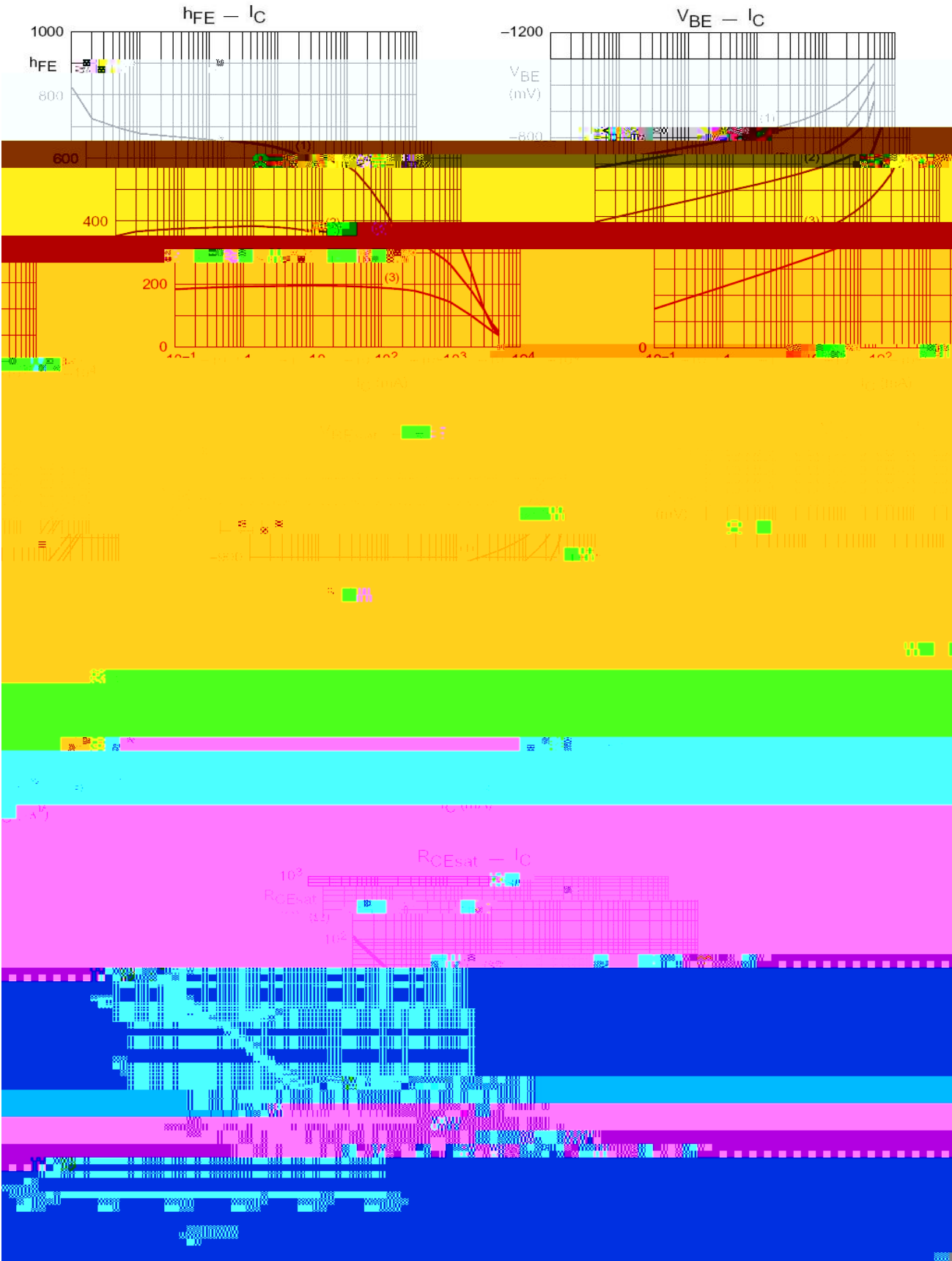
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/ Electrical Characteristics($T_a=25^\circ\text{C}$)

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

* : $t_p \leq 300\mu\text{s}$; $\delta \leq 0.02$.

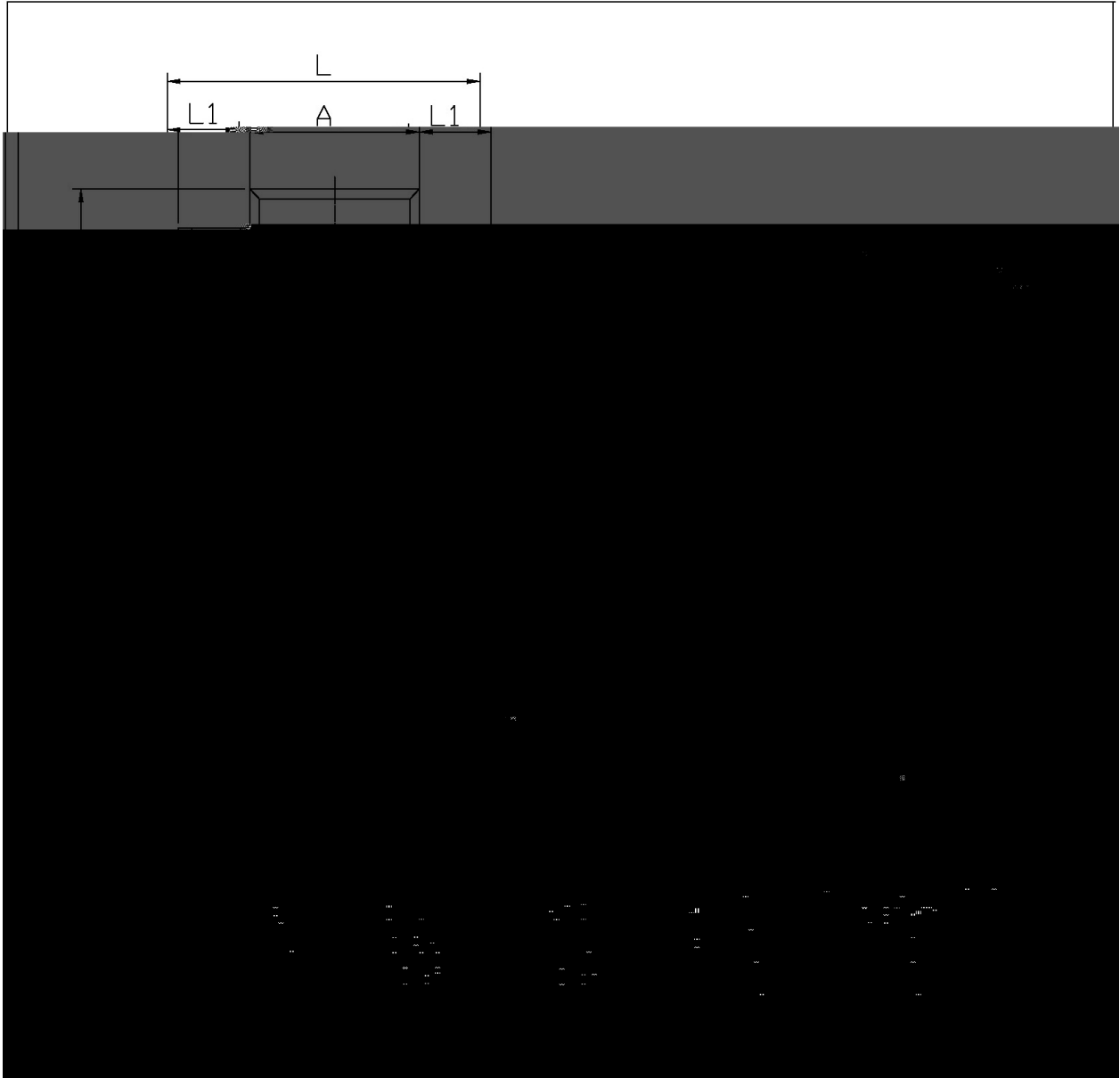
/ Electrical Characteristic Curve



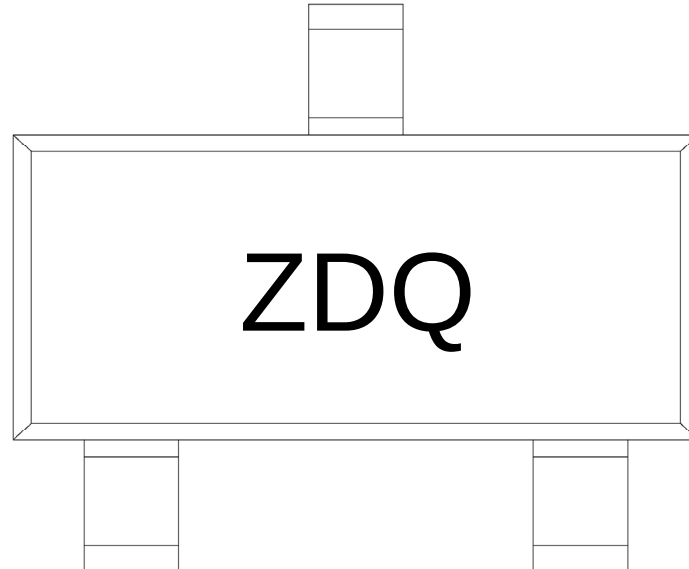
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



ZD

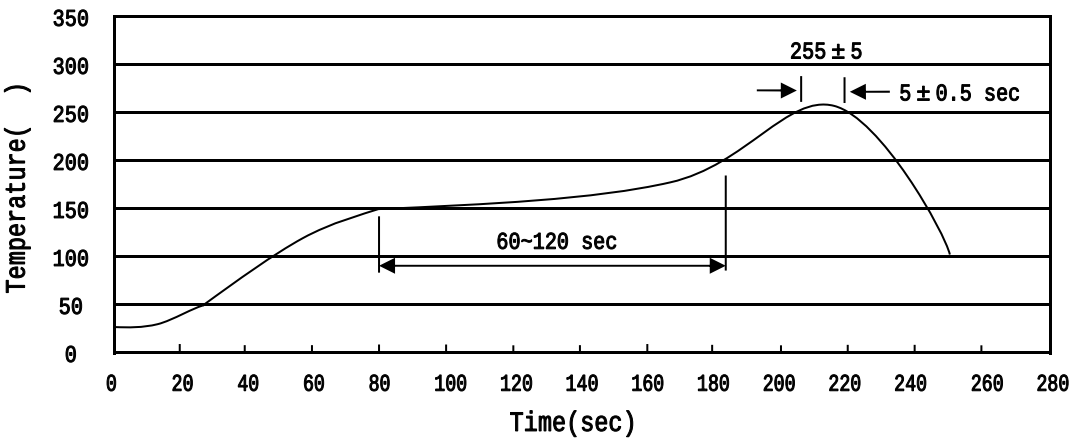
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Note:

ZD Product Type

Q: Automobile halogen-free product Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



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 ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices