



修订记录

F	2017-4				
G	2020-5-15	1			
A	2021-12-17	all	BR Q AEC-Q101 H Q 245±5℃ 5±0.5sec 255±5℃ 5±0.5sec		



Rev.A Dec.-2021

描述

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

特征

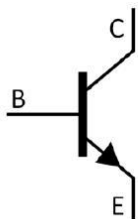
, , , BRMMBTA92Q AEC-Q101

High voltage, Low saturation voltage, low collector capacitance output, complementary pair with BRMMBTA92Q, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途

High voltage control circuit, Meet the stringent requirements of automotive applications.

内部等效电路



引脚排列



PIN1 Base PIN 2 Emitter PIN 3 Collector

印章代码

h_{FE} Range	>40
Marking	Q1D



极限参数

°C

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	300	V
Collector to Emitter Voltage	V_{CEO}	300	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	500	mA
Collector Power Dissipation*	$*P_C$	350	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 150	°C

*: 4.0*4.0*0.15mm³ FR-4 PCB*: Device mounted on FR-4 PCB 4.0*4.0*0.15mm³

电性能参数

°C

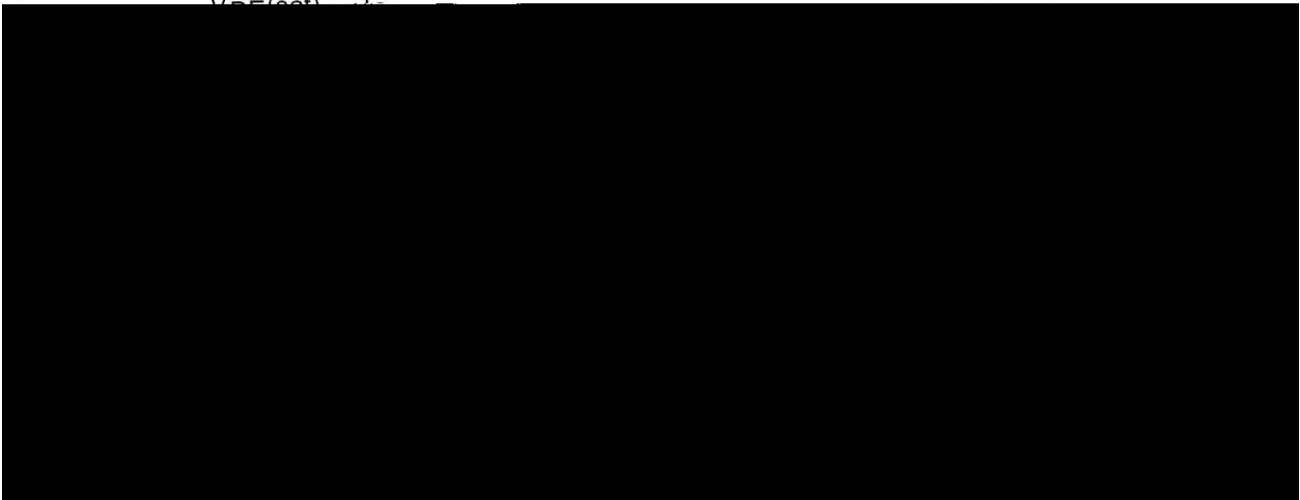
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=100\mu A$ $I_E=0$	300			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	300			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=200V$ $I_E=0$			0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{BE}=6.0V$ $I_C=0$			0.1	μA
DC Current Gain	$*h_{FE(1)}$	$V_{CE}=10V$ $I_C=10mA$	40			
	$*h_{FE(2)}$	$V_{CE}=10V$ $I_C=30mA$	40			
	$*h_{FE(3)}$	$V_{CE}=10V$ $I_C=1.0mA$	25			
Collector to Emitter Saturation Voltage	$*V_{CE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.5	V
Base to Emitter Saturation Voltage	$*V_{BE(sat)}$	$I_C=20mA$ $I_B=2.0mA$			0.9	V
Transition Frequency	f_T	$I_C=10mA$ $V_{CE}=20V$ $f=100MHz$	50			MHz
Collector output capacitance	C_{ob}	$V_{CB}=20V$ $I_E=0$ $f=1.0MHz$			3.0	pF

* 300 μS 2.0%*pulse test: pulse width $\leq 300\mu S$, duty cycle $\leq 2.0\%$.



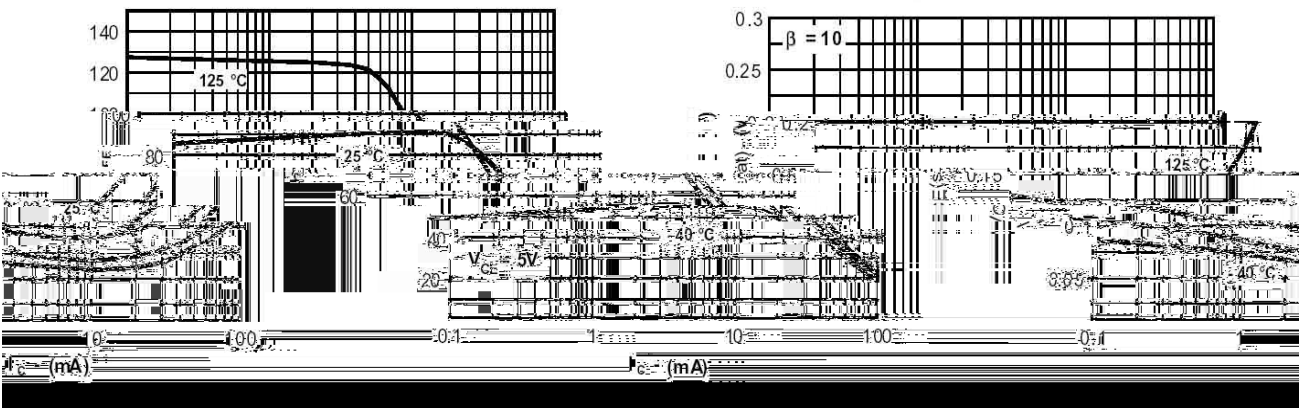
电参数曲线图

$V_{CE(sat)} - I_C$



$h_{FE} - I_C$

$V_{CE(sat)} - I_C$

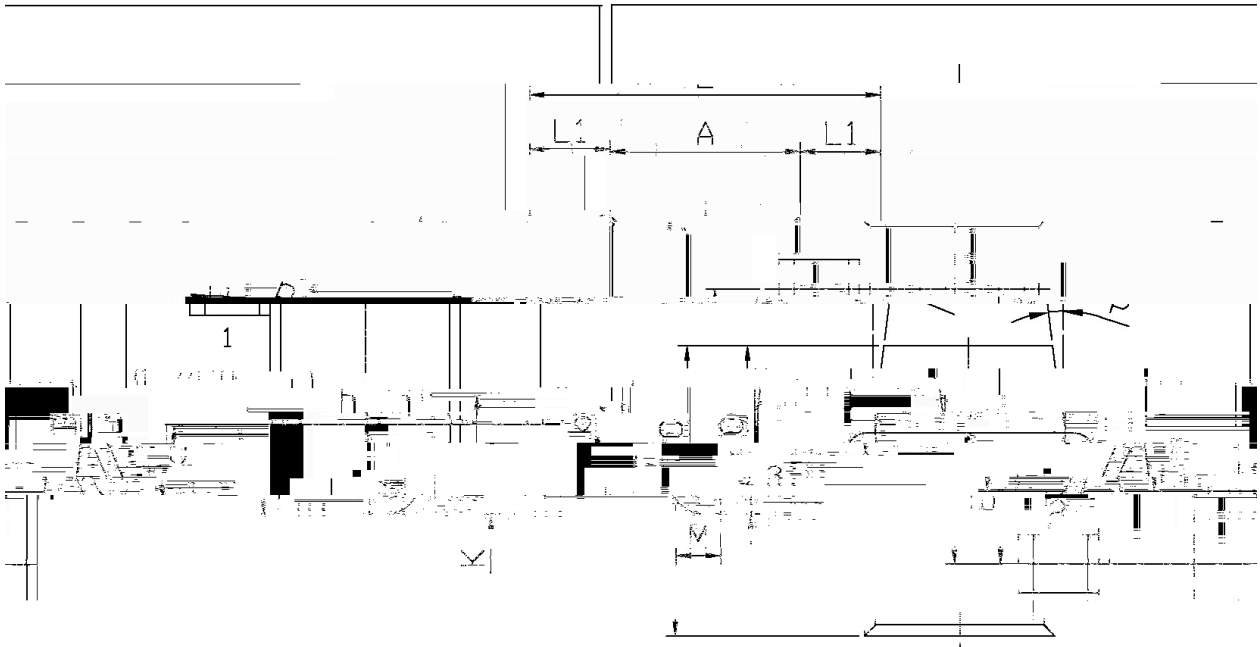


外形尺寸图




$\xrightarrow[\text{H}_2\text{O}]{\text{H}^+}$ $\frac{\text{CH}_3}{\text{C}} \begin{matrix} \text{OH} \\ | \\ \text{CH}_2\text{CH}_2\text{CH}_3 \end{matrix}$

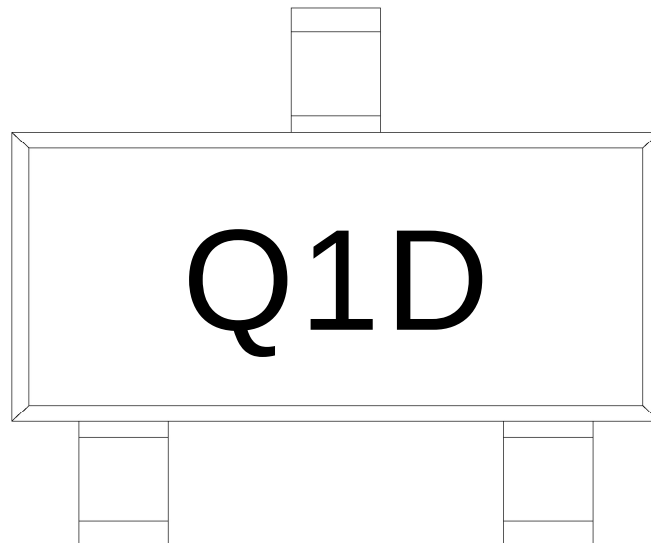
单 位



Symbol		Dimensions in Millimeters		Symbol		Dimensions in Millimeters	
		Min	Max			Min	Max
		0.45	0.65			0.45	0.97
	A		1.53		C		0.15
	B		2.70		D		0
	E		1.70		F		
	E1		0.85		G		
	H		0.85		I		



印章说明



Q

1D

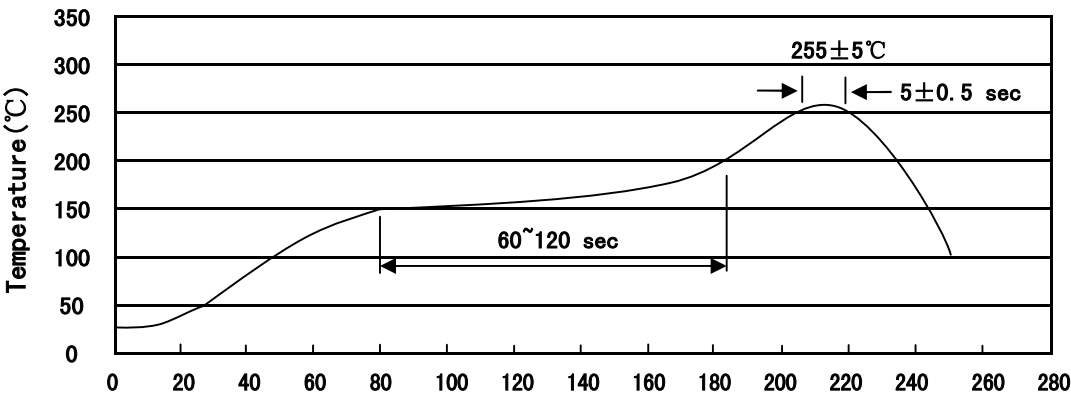
Note:

Q: Automobile halogen-free product Code

1D: Product Type Code.



回流焊温度曲线图 无铅 Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

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

耐焊接热试验条件

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

包装规格

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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" ×8	180×120×180	390×385×205

使用说明