

/ Revised record

G	2018-8				
H	2020-5-15	1			
A	2022-5-24	all	BR/Q AEC-Q101 , H Q 245±5 5±0.5sec 255±5 5± 0.5sec		

/ Descriptions

SOT-23 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-23 Plastic Package.

/ Features

低电流，低电压，符合 AEC-Q101 标准高可靠性要求，无卤产品。

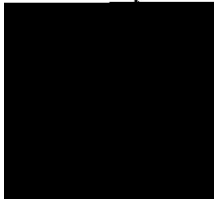
Low current, Low voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

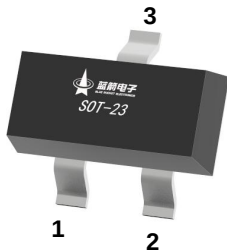
用于一般放大，满足汽车应用的严格要求。

General power amplifier application, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 : Base PIN 2 : Emitter PIN 3 : Collector

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	A	B	C
h_{FE} Range	125~250	220~475	420~800
Marking	Q3E	Q3F	Q3G

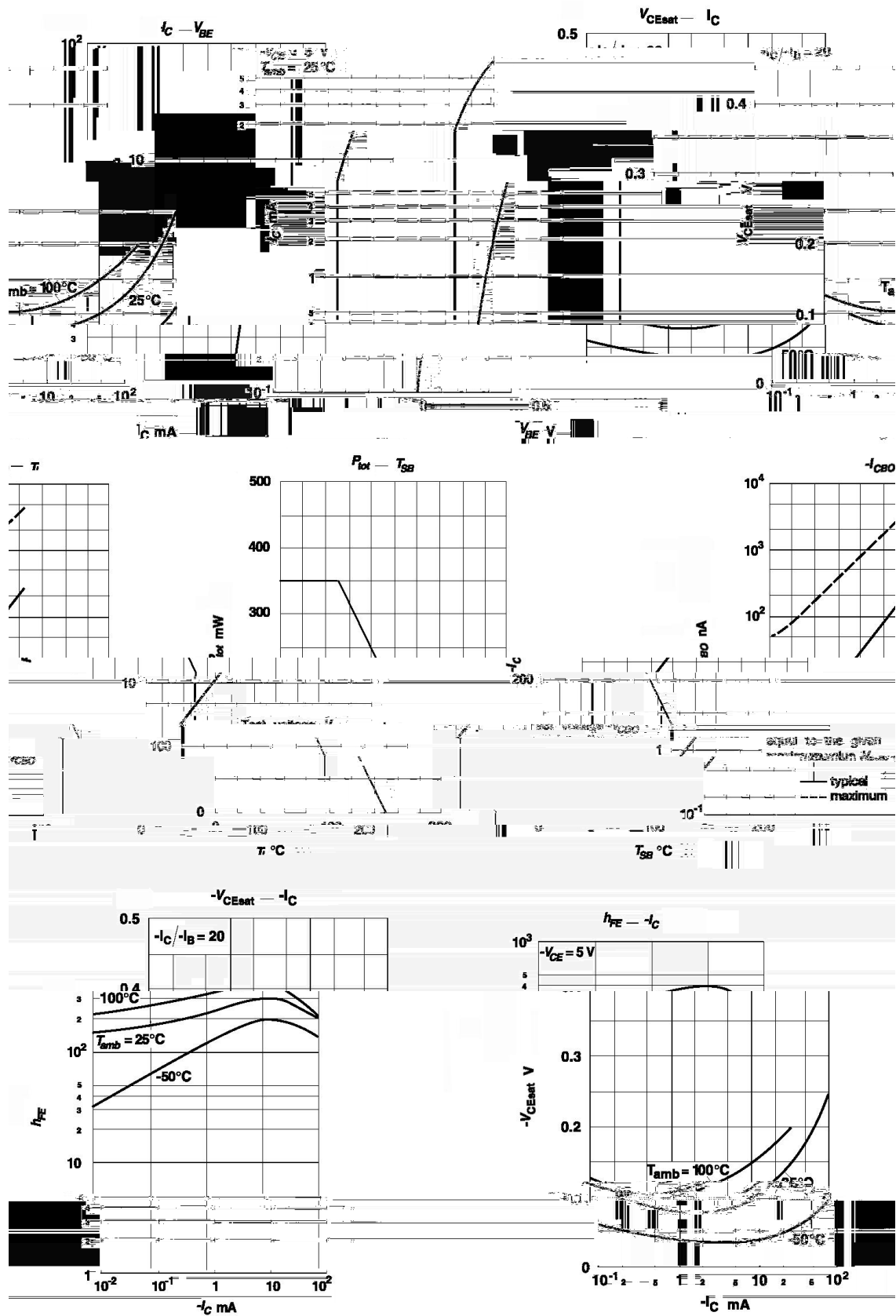
/ Absolute Maximum Ratings(Ta=25)

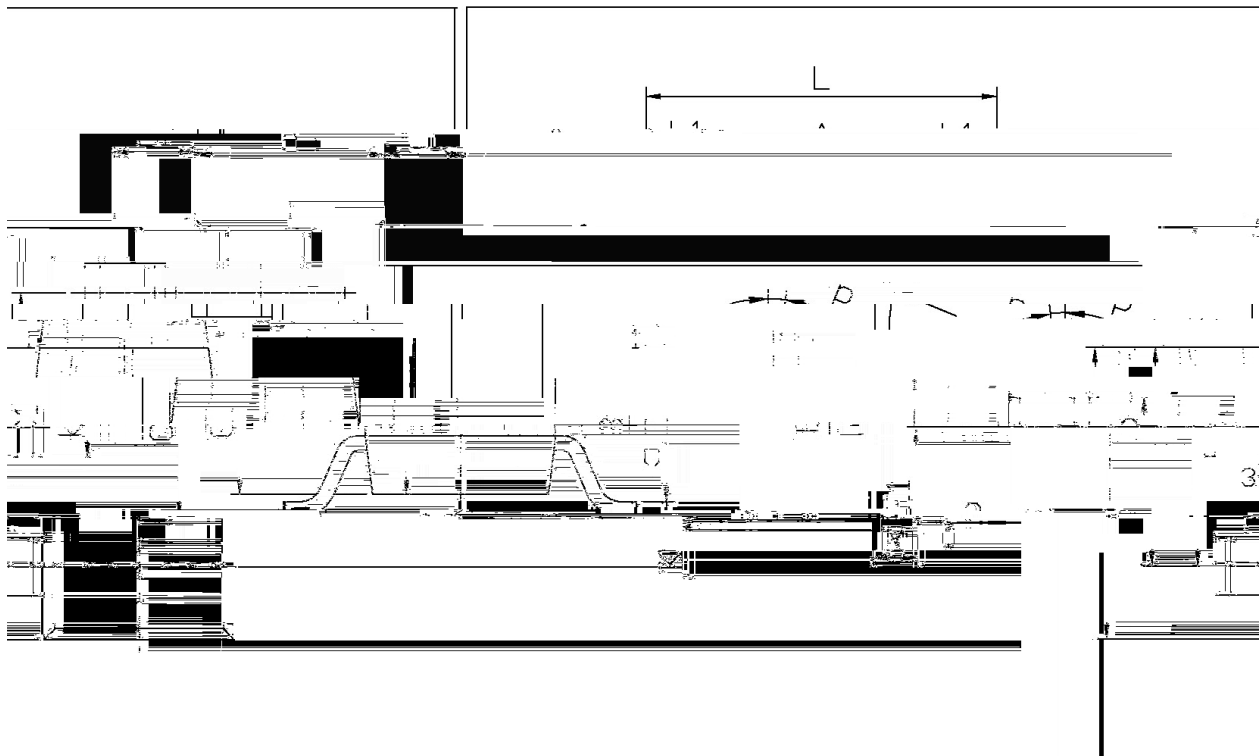
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-50	V
Collector to Emitter Voltage	V_{CEO}	-45	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-100	mA
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-30V$ $I_E=0$			-0.015	μA
DC Current Gain	h_{FE}	$V_{CE}=-5.0V$ $I_C=-2.0mA$	125		800	
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=-10mA$ $I_B=-0.5mA$		-0.09	-0.3	V
	$V_{CE(sat)(2)}$	$I_C=-100mA$ $I_B=-5.0mA$		-0.25	-0.65	V
Base to Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C=-10mA$ $I_B=-0.5mA$		-0.7		V
	$V_{BE(sat)(2)}$	$I_C=-100mA$ $I_B=-5.0mA$		-0.9		V
Collector to Emitter Voltage	$V_{CE(ON)(1)}$	$V_{CE}=5.0V$ $I_C=2.0mA$	-0.6	-0.65	-0.75	V
	$V_{CE(ON)(2)}$	$V_{CE}=5.0V$ $I_C=10mA$			-0.82	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $f=100MHz$ $I_C=10mA$		150		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		4.5		pF
Noise Figure	NF	$V_{CE}=6.0V$ $I_C=0.1mA$ $R_g=10K\Omega$ $f=1.0KHz$		2.0	10	dB

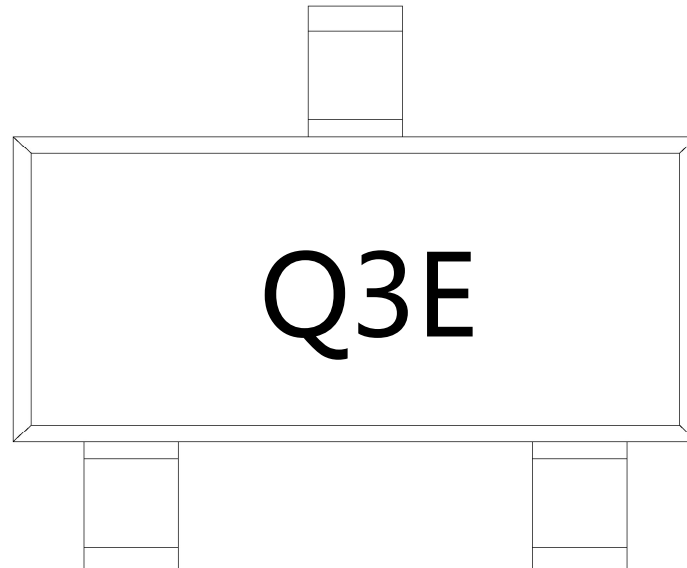
/ Electrical Characteristic Curve



[illegible]

Symbol		Dimensions In Millimeters		Symbol		Dimensions In Millimeters	
1	0.45	1	0.45	1	0.45	1	0.45
2	0.65	2	0.65	2	0.65	2	0.65
3	0.85	3	0.85	3	0.85	3	0.85
4	1.05	4	1.05	4	1.05	4	1.05
5	1.25	5	1.25	5	1.25	5	1.25
6	1.45	6	1.45	6	1.45	6	1.45
7	1.65	7	1.65	7	1.65	7	1.65
8	1.85	8	1.85	8	1.85	8	1.85
9	2.05	9	2.05	9	2.05	9	2.05
10	2.25	10	2.25	10	2.25	10	2.25
11	2.45	11	2.45	11	2.45	11	2.45
12	2.65	12	2.65	12	2.65	12	2.65
13	2.85	13	2.85	13	2.85	13	2.85
14	3.05	14	3.05	14	3.05	14	3.05
15	3.25	15	3.25	15	3.25	15	3.25
16	3.45	16	3.45	16	3.45	16	3.45
17	3.65	17	3.65	17	3.65	17	3.65
18	3.85	18	3.85	18	3.85	18	3.85
19	4.05	19	4.05	19	4.05	19	4.05
20	4.25	20	4.25	20	4.25	20	4.25
21	4.45	21	4.45	21	4.45	21	4.45
22	4.65	22	4.65	22	4.65	22	4.65
23	4.85	23	4.85	23	4.85	23	4.85
24	5.05	24	5.05	24	5.05	24	5.05
25	5.25	25	5.25	25	5.25	25	5.25
26	5.45	26	5.45	26	5.45	26	5.45
27	5.65	27	5.65	27	5.65	27	5.65
28	5.85	28	5.85	28	5.85	28	5.85
29	6.05	29	6.05	29	6.05	29	6.05
30	6.25	30	6.25	30	6.25	30	6.25
31	6.45	31	6.45	31	6.45	31	6.45
32	6.65	32	6.65	32	6.65	32	6.65
33	6.85	33	6.85	33	6.85	33	6.85
34	7.05	34	7.05	34	7.05	34	7.05
35	7.25	35	7.25	35	7.25	35	7.25
36	7.45	36	7.45	36	7.45	36	7.45
37	7.65	37	7.65	37	7.65	37	7.65
38	7.85	38	7.85	38	7.85	38	7.85
39	8.05	39	8.05	39	8.05	39	8.05
40	8.25	40	8.25	40	8.25	40	8.25
41	8.45	41	8.45	41	8.45	41	8.45
42	8.65	42	8.65	42	8.65	42	8.65
43	8.85	43	8.85	43	8.85	43	8.85
44	9.05	44	9.05	44	9.05	44	9.05
45	9.25	45	9.25	45	9.25	45	9.25
46	9.45	46	9.45	46	9.45	46	9.45
47	9.65	47	9.65	47	9.65	47	9.65
48	9.85	48	9.85	48	9.85	48	9.85
49	10.05	49	10.05	49	10.05	49	10.05
50	10.25	50	10.25	50	10.25	50	10.25
51	10.45	51	10.45	51	10.45	51	10.45
52	10.65	52	10.65	52	10.65	52	10.65
53	10.85	53	10.85	53	10.85	53	10.85
54	11.05	54	11.05	54	11.05	54	11.05
55	11.25	55	11.25	55	11.25	55	11.25
56	11.45	56	11.45	56	11.45	56	11.45
57	11.65	57	11.65	57	11.65	57	11.65
58	11.85	58	11.85	58	11.85	58	11.85
59	12.05	59	12.05	59	12.05	59	12.05
60	12.25	60	12.25	60	12.25	60	12.25
61	12.45	61	12.45	61	12.45	61	12.45
62	12.65	62	12.65	62	12.65	62	12.65
63	12.85	63	12.85	63	12.85	63	12.85
64	13.05	64	13.05	64	13.05	64	13.05
65	13.25	65	13.25	65	13.25	65	13.25
66	13.45	66	13.45	66	13.45	66	13.45
67	13.65	67	13.65	67	13.65	67	13.65
68	13.85	68	13.85	68	13.85	68	13.85
69	14.05	69	14.05	69	14.05	69	14.05
70	14.25	70	14.25	70	14.25	70	14.25
71	14.45	71	14.45	71	14.45	71	14.45
72	14.65	72	14.65	72	14.65	72	14.65
73	14.85	73	14.85	73	14.85	73	14.85
74	15.05	74	15.05	74	15.05	74	15.05
75	15.25	75	15.25	75	15.25	75	15.25
76	15.45	76	15.45	76	15.45	76	15.45
77	15.65	77	15.65	77	15.65	77	15.65
78	15.85	78	15.85	78	15.85	78	15.85
79	16.05	79	16.05	79	16.05	79	16.05
80	16.25	80	16.25	80	16.25	80	16.25
81	16.45	81	16.45	81	16.45	81	16.45
82	16.65	82	16.65	82	16.65	82	16.65
83	16.85	83	16.85	83	16.85	83	16.85
84	17.05	84	17.05	84	17.05	84	17.05
85	17.25	85	17.25	85	17.25	85	17.25
86	17.45	86	17.45	86	17.45	86	17.45
87	17.65	87	17.65	87	17.65	87	17.65
88	17.85	88	17.85	88	17.85	88	17.85
89	18.05	89	18.05	89	18.05	89	18.05
90	18.25	90	18.25	90	18.25	90	18.25
91	18.45	91	18.45	91	18.45	91	18.45
92	18.65	92	18.65	92	18.65	92	18.65
93	18.85	93	18.85	93	18.85	93	18.85
94	19.05	94	19.05	94	19.05	94	19.05
95	19.25	95	19.25	95	19.25	95	19.25
96	19.45	96	19.45	96	19.45	96	19.45
97	19.65	97	19.65	97	19.65	97	19.65
98	19.85	98	19.85	98	19.85	98	19.85
99	20.05	99	20.05	99	20.05	99	20.05
100	20.25	100	20.25	100	20.25	100	20.25

/ Marking Instructions



Q

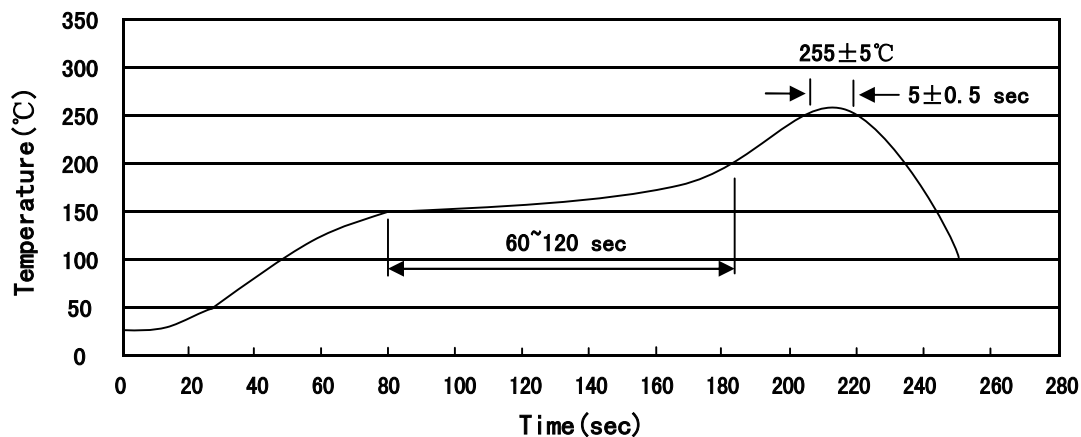
3E

Note:

Q: Automobile halogen-free product Code

3E: Product Type Code

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



Note:

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

/ Resistance to Soldering Heat Test Conditions

260±5°C 10±1 sec. Temp.: 260±5°C 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)		
	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	180000	7" x8	180×120×180	390×385×205

/ Notices