/ Descriptions

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

/ Features

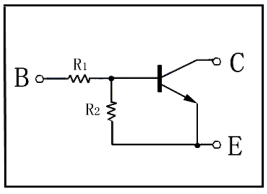
AEC-Q101

With built-in bias resistors, simplify circuit design, reduce a quantity of parts and manufacturing process, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

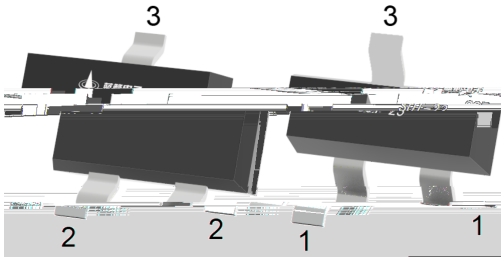
/ Applications

Switching, inverter circuit, interface circuit and driver circuit applications , Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

Marking	QE23

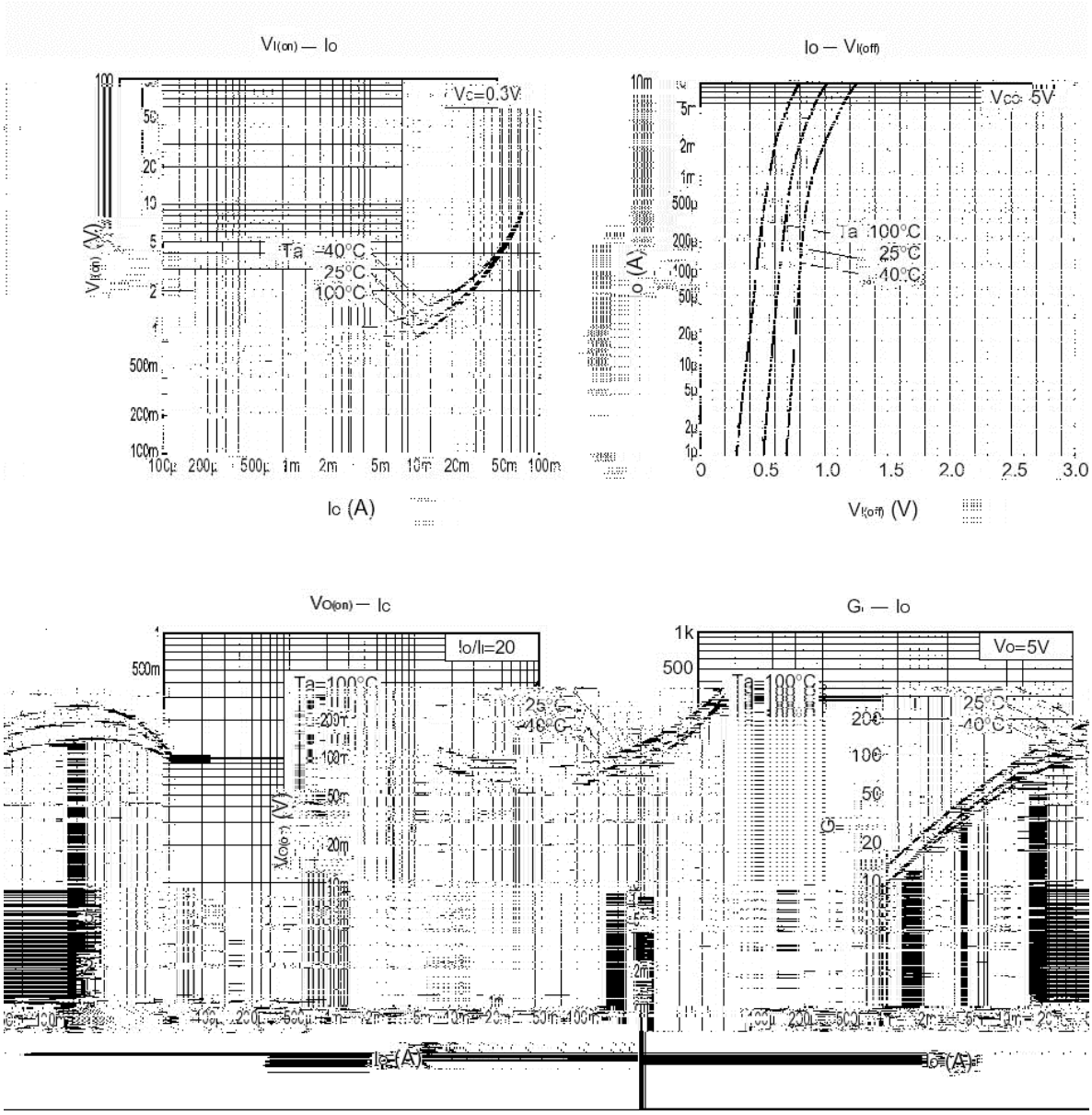
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Output Voltage	V_{CC}	50	V
Input Voltage	V_{IN}	30	V
		-5.0	V
Output Current	I_O	100	mA
	I_C	100	mA
Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 150	℃

/ Electrical Characteristics(Ta=25)

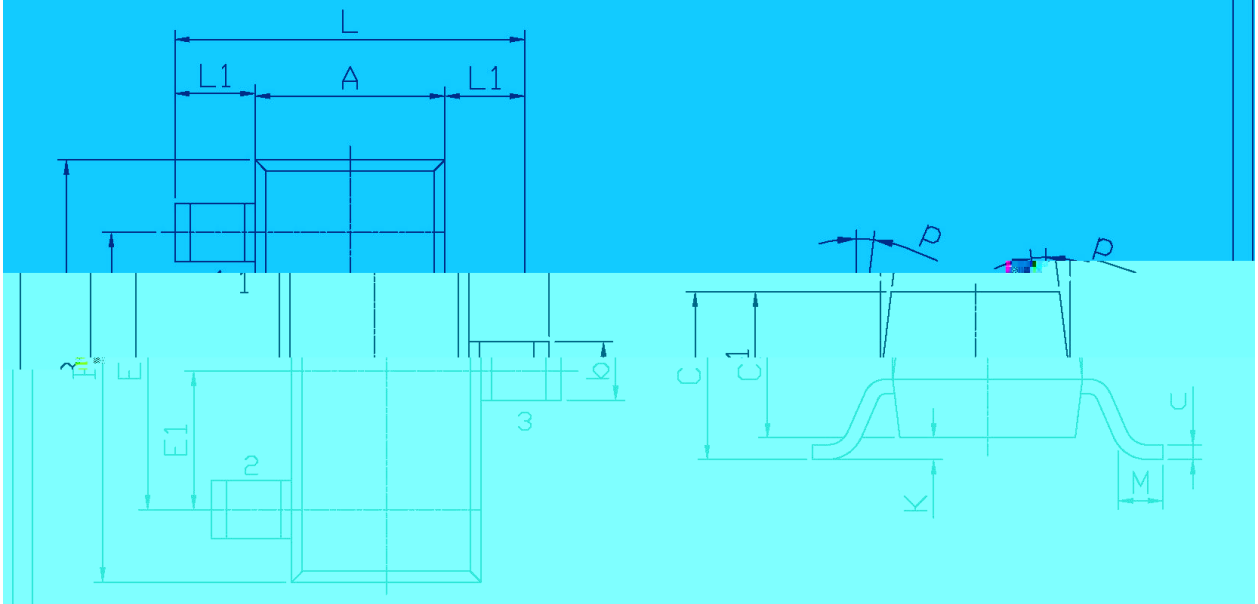
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage(OFF)	$V_{I(off)}$	V_{CC}=5.0V I_O=100μA			0.5	V
Input Voltage(ON)	$V_{I(on)}$	V_O=0.3V I_O=5.0mA	1.3			V
Output Voltage	$V_{O(on)}$	I_O=5.0mA I_I=0.25mA		0.1	0.3	V
Input Current	I_I	V_I=5.0V			1.8	mA
Output Cut-off Current	$I_{O(off)}$	V_{CC}=50V V_I=0V			0.5	μA
DC Current Gain	G_I	V_O=5.0V I_O=10mA	80			
Transition Frequency	f_T	V_{CE}=10V I_E=-5.0mA f=100MHz		250		MHz
Resistance1	R_1		3.29	4.7	6.11	KΩ
Resistance Ratio	R_2/R_1		8.0	10	12	

/ Electrical Characteristic Curve



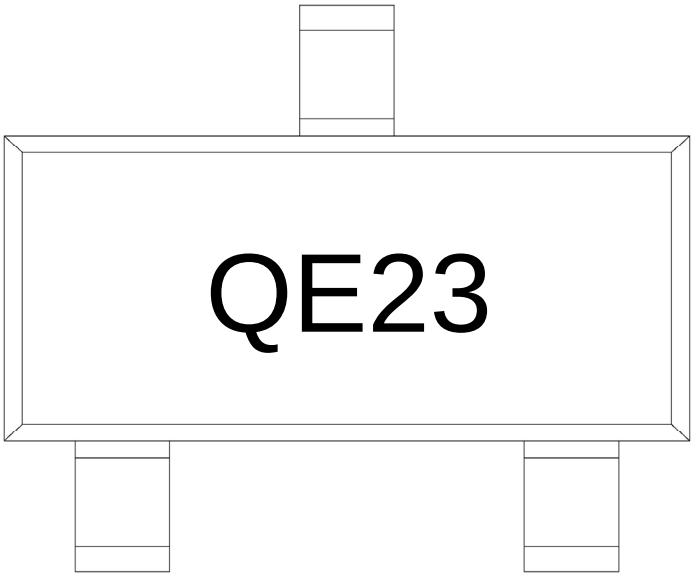
/ Package Dimensions

SOT-23 单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	[illegible]			

/ Marking Instructions



Q

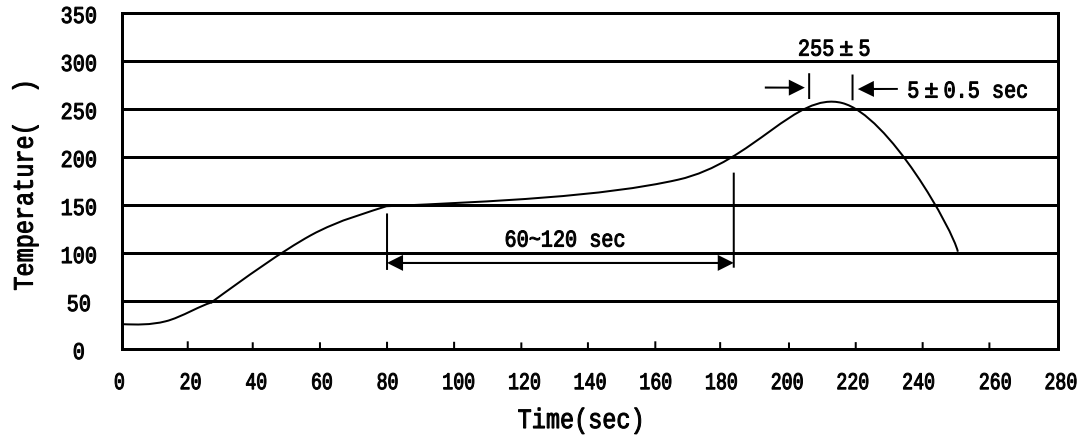
E23

Note:

Q: Automobile halogen-free product Code

E23 Product Type 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	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices