

5 Ø / Descriptions

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

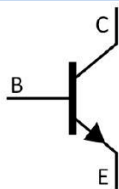
/“ / Features

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

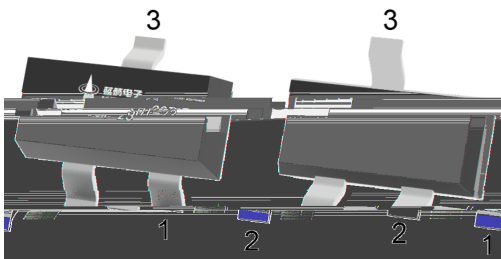
— ÷ / Applications

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

^ W] Ô / Equivalent Circuit



Û æ / Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

Z ÜB , M V / h_{FE} Classifications & Marking

h_{FE} Range	>200
Marking	QU5

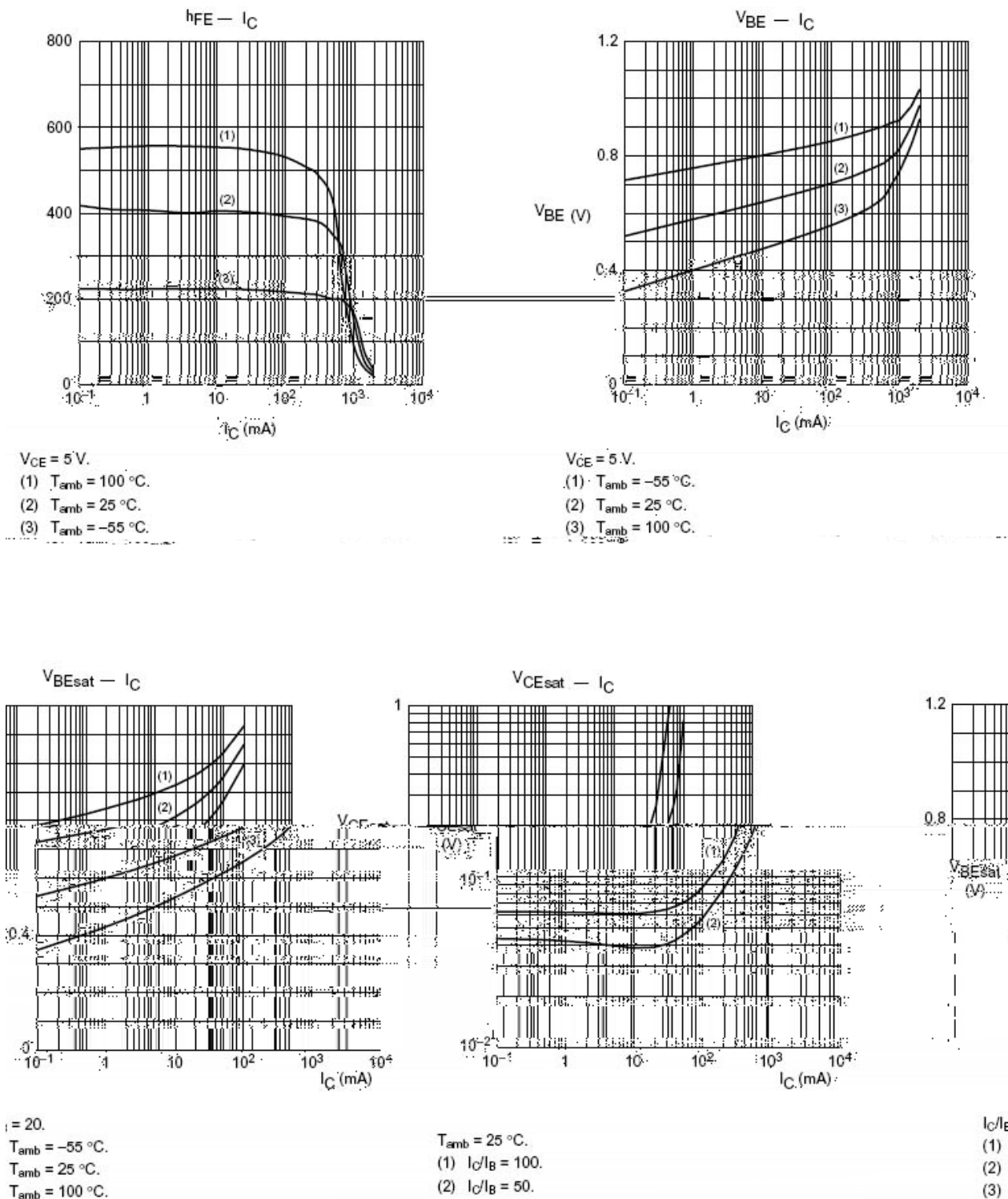
1. Absolute Maximum Ratings(Ta=25 ;)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	80	V
Collector to Emitter Voltage	V_{CEO}	60	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current	I_C	1	A
Peak Collector Current	I_{CM}	2	A
Base Current	I_B	0.3	A
Peak Base Current	I_{BM}	1	A
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

2. Electrical Characteristics(Ta=25 ;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=60V$ $I_E=0A$			100	nA
		$V_{CB}=60V$ $I_E=0A$ $T_j=150$			50	A
Collector Cut-Off Current	I_{CES}	$V_{CE}=60V$ $V_{BE}=0V$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0A$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V$ $I_C=500mA$	200	350		
	$h_{FE(2)}$	$V_{CE}=5.0V$ $I_C=1.0mA$	250	400		
	$h_{FE(3)}$	$V_{CE}=5.0V$ $I_C=1.0A$	100	150		
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=100mA$ $I_B=1.0mA$		90	110	mV
	$V_{CE(sat)(2)}$	$I_C=500mA$ $I_B=50mA$		110	140	mV
	$V_{CE(sat)(3)}$	$I_C=1.0A$ $I_B=100mA$		200	250	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.0A$ $I_B=50mA$		0.95	1.1	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=1.0A$		0.82	0.9	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=50mA$ $f=100MHz$	150	220		MHz
Output Capacitance	C_C	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		5.5	10	pF

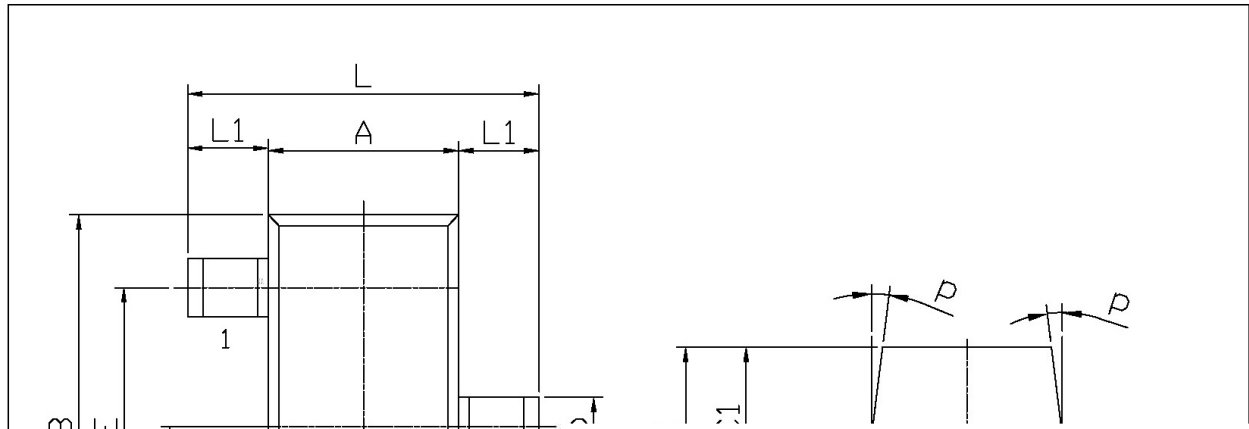
电气特性 / Electrical Characteristic Curve



$\varnothing =) \varnothing$ / Package Dimensions

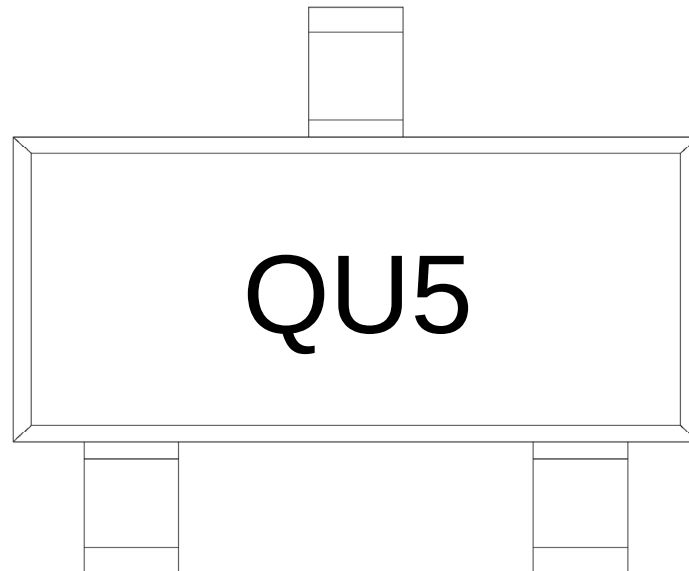
SOT-23

单位: mm



	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	E	0.50	0.80
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

, M y / Marking Instructions



Q

U5

Note:

Q: Automobile halogen-free product Code

U5 Product Type Code

WD t ¢ (x/) / :KSVKXGZ[XK 6XULORK LUX /8 8KLRU] 9URJKXOTM 6

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.

´D /Cª p fl »] / Resistance to Soldering Heat Test Conditions

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

G P Æ / Packaging SPEC.

/ REEL