

/ Descriptions

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

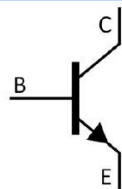
/ Features

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

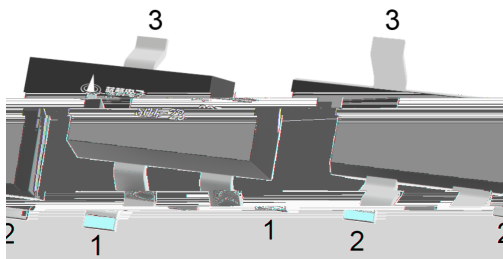
/ Applications

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

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	>200
Marking	QU5

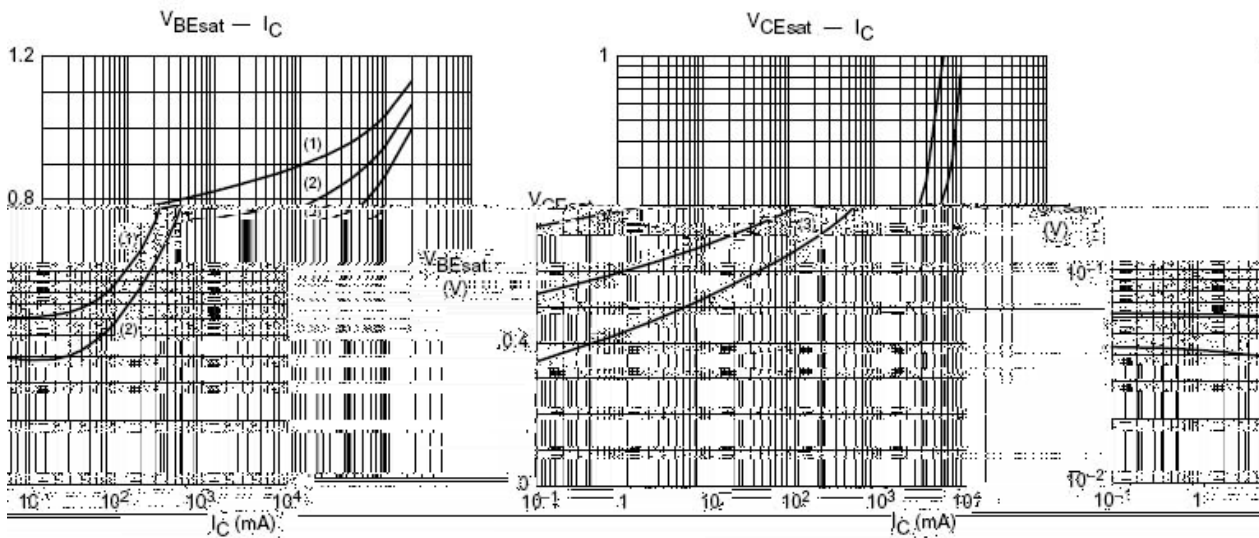
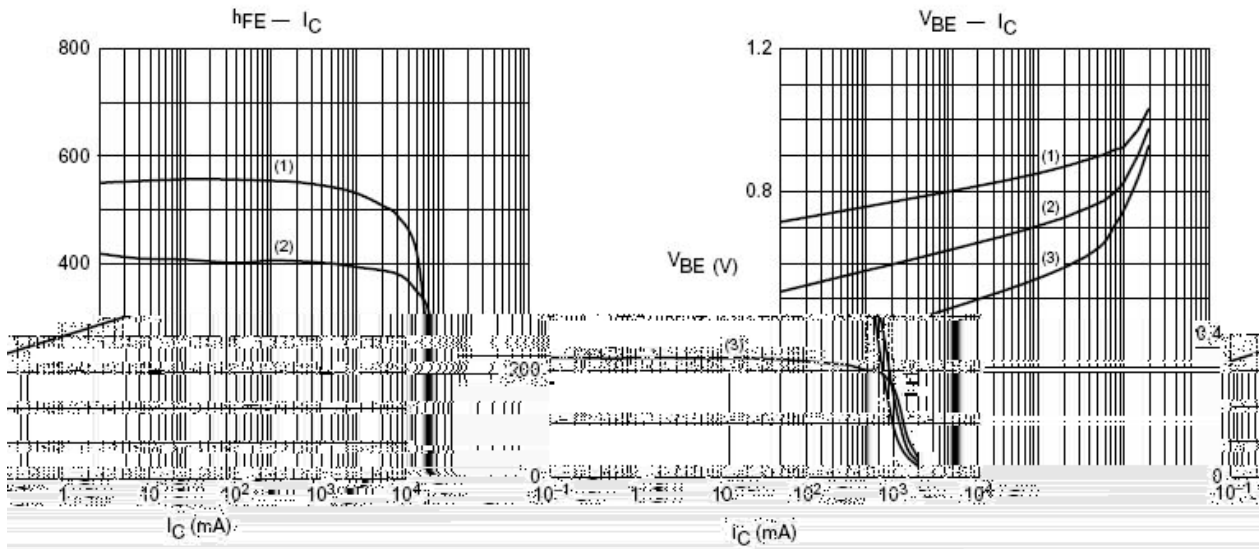
/ Absolute Maximum Ratings(Ta=25 –)

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	

/ Electrical Characteristics(Ta=25 –)

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

/ Electrical Characteristic Curve



$I_C/I_B = 20$

- (1) $T_{amb} = -55^\circ C$
- (2) $T_{amb} = 25^\circ C$
- (3) $T_{amb} = 100^\circ C$

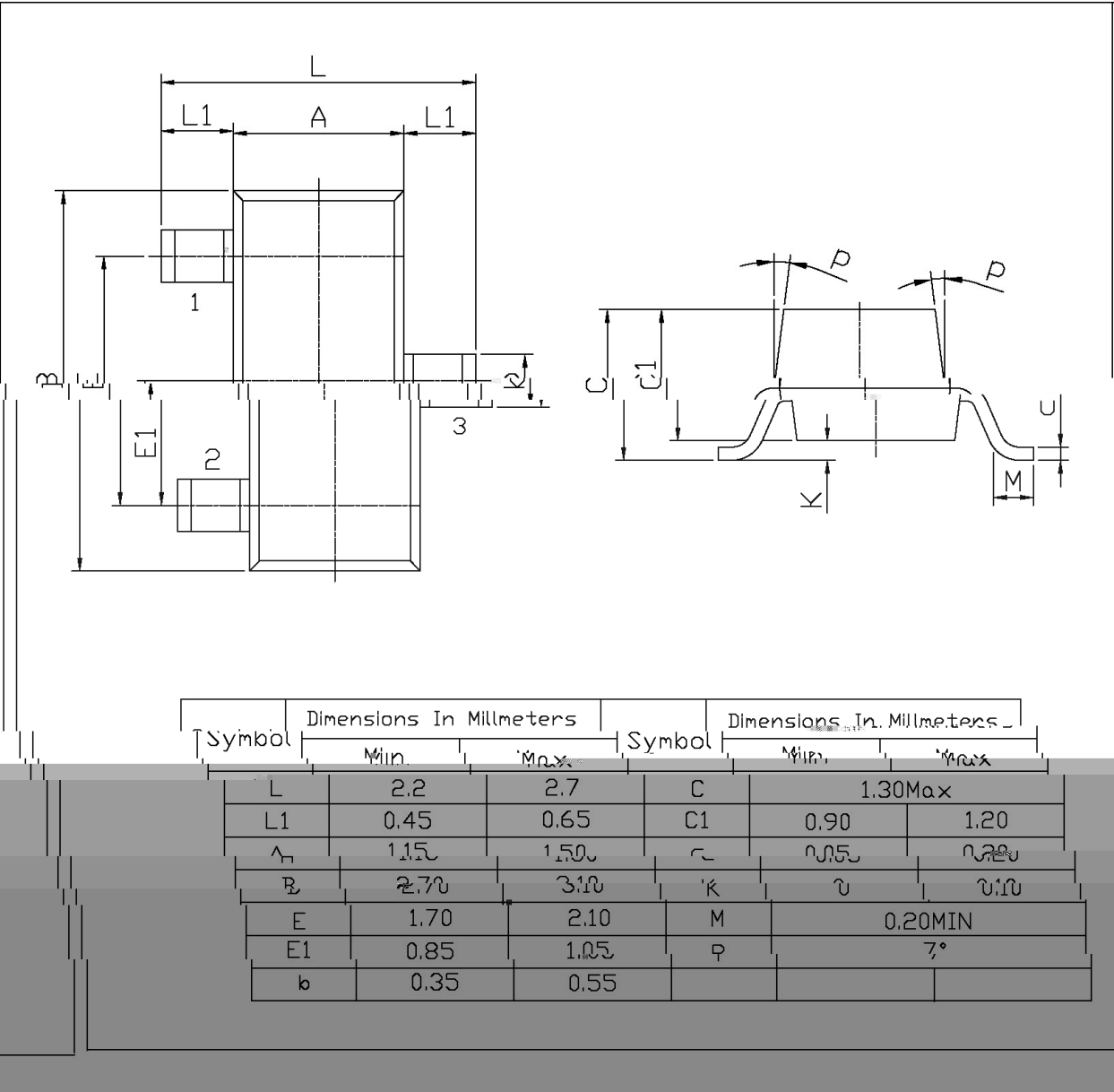
$T_{amb} = 25^\circ C$

- (1) $I_C/I_B = 100$
- (2) $I_C/I_B = 50$

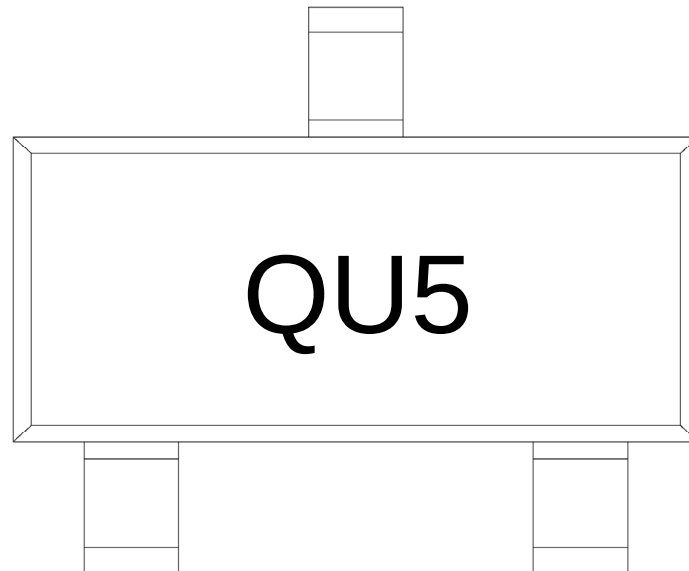
/ Package Dimensions

SOT-23

单位：mm



/ Marking Instructions



Q

U5

Note:

Q: Automobile halogen-free product Code

U5 Product Type Code

() / Wh p shudwxuh Sur iloh i ru LU Uhior z Vroghulqj +Se0luhh,

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 Type55.8(y TT4 1 Tf1.0004 0 TD.8312 Tc(-TT8 25.98 59.44(E)005 Tc()Tj9)8-5121.48(6 TD.2252 Tc[/\$23704b053efb15981TT909 0 TD0