

Rev.A Mar.-2023

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SOT-23

NPN

Silicon NPN transistor in a SOT-23 Plastic Package.

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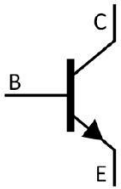
AEC-Q101

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

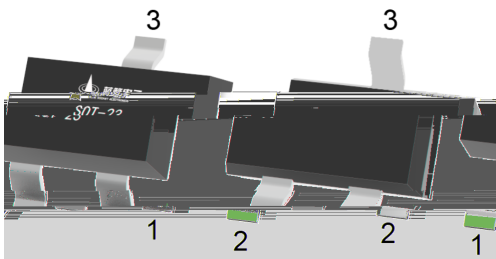
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General purpose switching and muting, LCD back-lighting, supply line switching circuits, Meet the stringent requirements of automotive applications.

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PIN 1 Base PIN 2 Emitter PIN 3 Collector

Z ÜB , M V

h _{FE} Range	>200
Marking	QU5

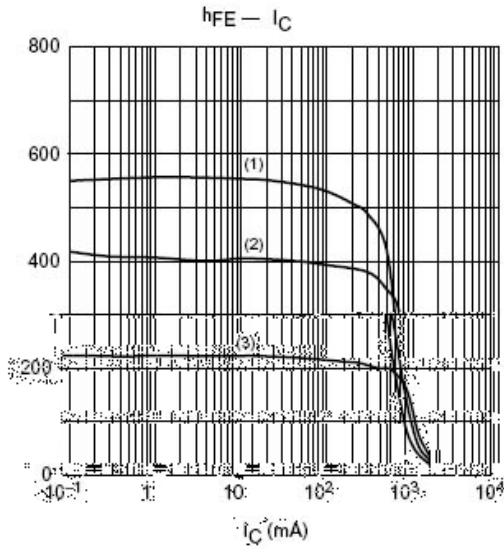
参数表

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	

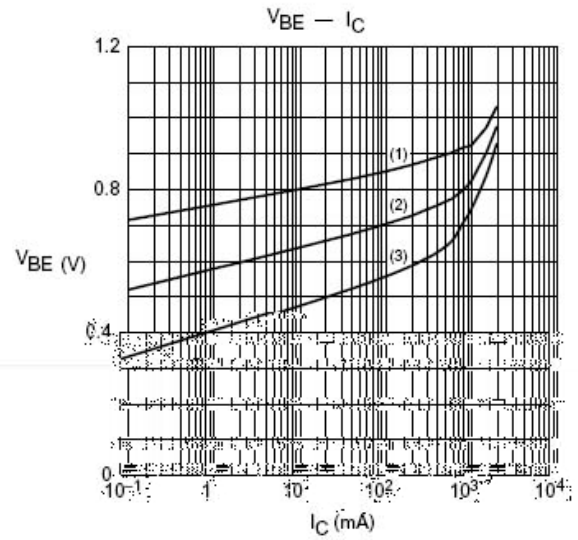
特性表

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

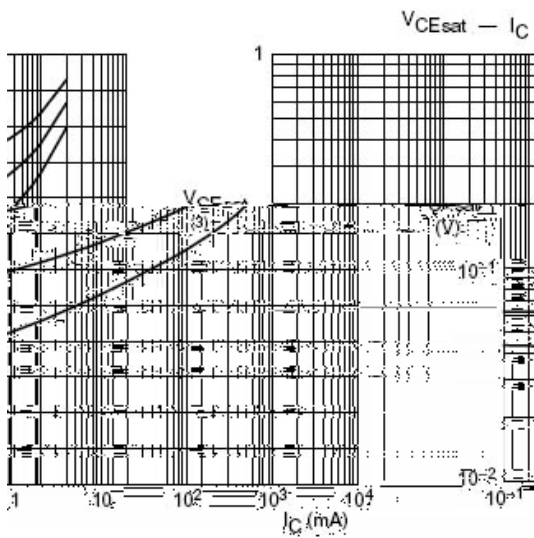
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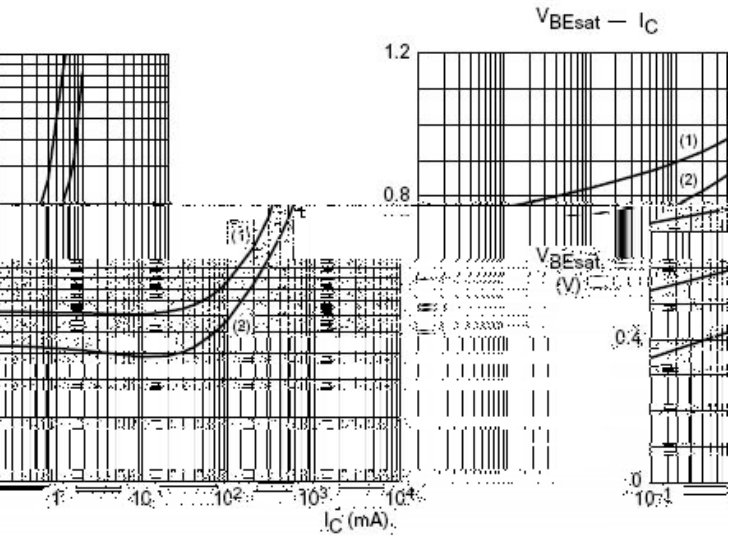
$V_{CE} = 5\text{ V}$.
 (1) $T_{amb} = 100\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.



$V_{CE} = 5\text{ V}$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 100\text{ }^{\circ}\text{C}$.

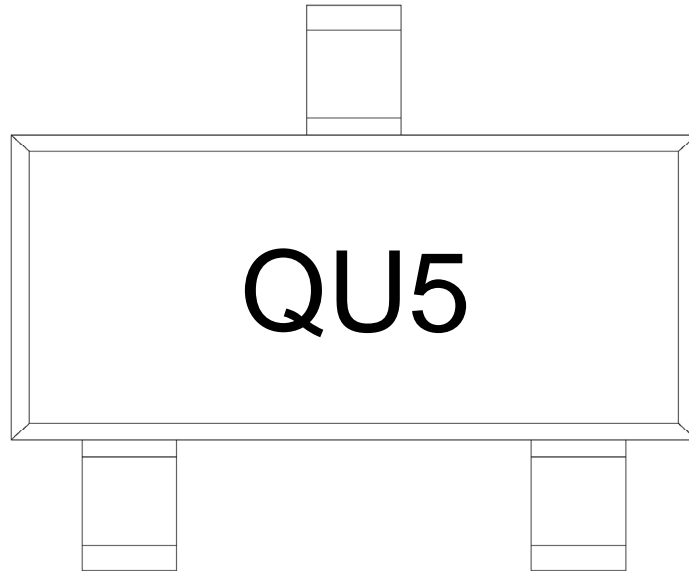


$T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (1) $I_C/I_B = 100$.
 (2) $I_C/I_B = 50$.



$I_C/I_B = 20$.
 (1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
 (2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
 (3) $T_{amb} = 100\text{ }^{\circ}\text{C}$.

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U5

Note:

Q: Automobile halogen-free product Code

U5 Product Type Code

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Note:

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|---|-----------|--------------|---|
| 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. |

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

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