

/ Descriptions

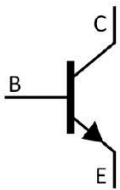
Silicon NPN transistor in a SOT-23 Plastic Package.

/ Features

High frequency.

/ Applications

UHF frequency converter, local oscillator, wide band amplifier.



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h _{FE} Range	20 200
Marking	HGC

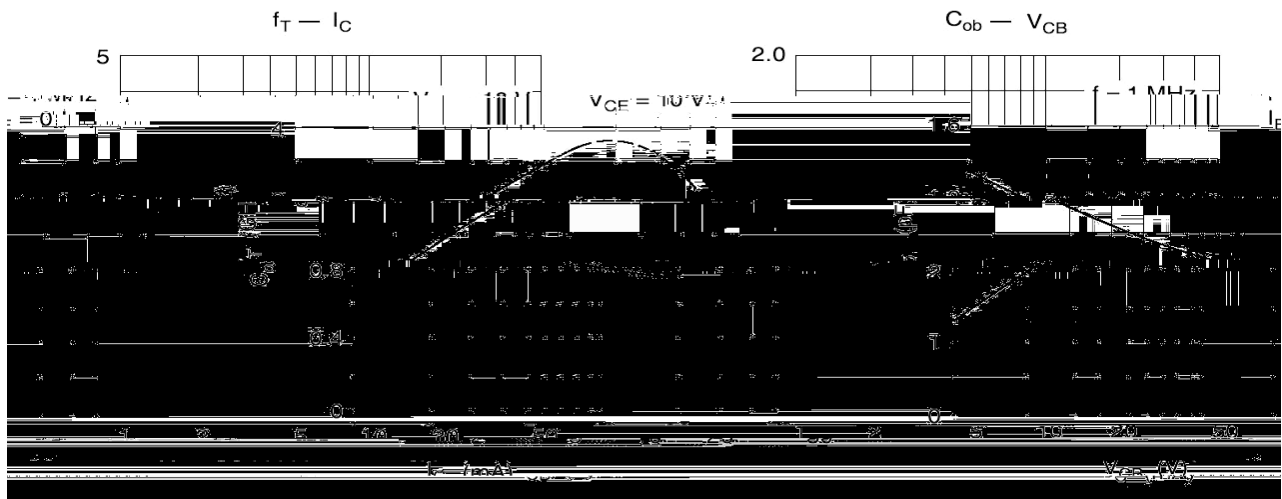
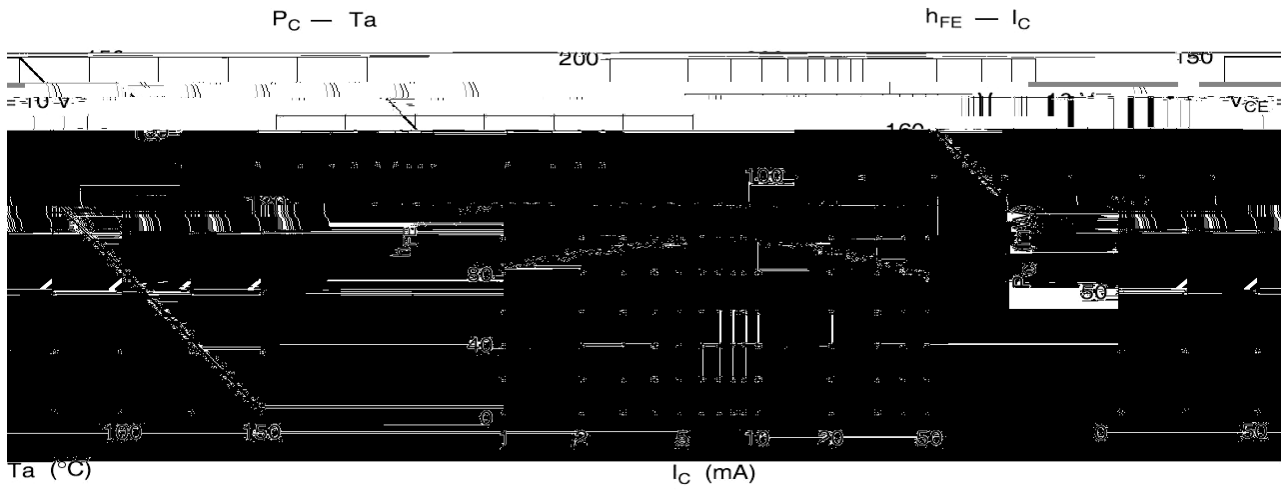
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	11	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

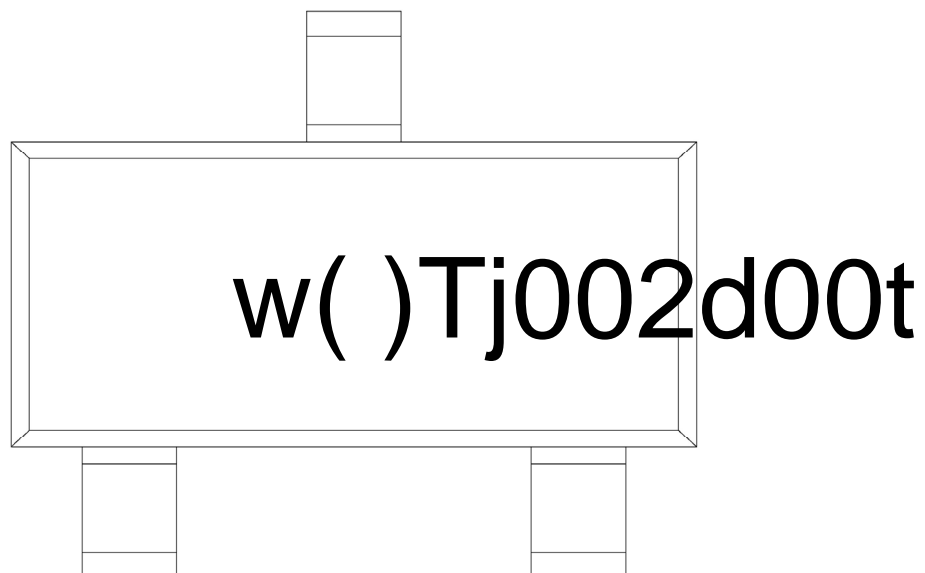
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- Base Breakdown Voltage	V_{CBO}	$I_C=10\text{ A}$ $I_E=0$	20			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$ $R_{BE}=\infty$	11			V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=10\text{ A}$ $I_C=0$	3.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=10\text{V}$ $I_E=0$			0.5	A
Emitter Cut-Off Current	I_{EBO}	$V_{CB}=2.0\text{V}$ $I_E=0$			0.5	A
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$ $I_C=5.0\text{mA}$	20	90	200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ $I_B=5.0\text{mA}$			0.7	V
Transition Frequency	f_T	$V_{CE}=10\text{V}$ $I_C=10\text{mA}$	1400	3500		MHz
Collector output capacitance	C_{ob}	$V_{CE}=10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$		0.9	1.5	pF
Conversion Gain	CG	$V_{CC}=6.0\text{V}$ $I_C=2.0\text{mA}$ $f=900\text{MHz}$ $f_{OSC}=930\text{MHz}(0\text{dBm})$ $f_{out}=30\text{MHz}$		15		dB
Noise Figure	NF	$V_{CC}=6.0\text{V}$ $I_C=2.0\text{mA}$ $f=900\text{MHz}$ $f_{OSC}=930\text{MHz}(0\text{dBm})$ $f_{out}=30\text{MHz}$		9.0		dB
The Output Clock Supply Voltage	V_{OSC}	$V_{CC}=6.0\text{V}$ $I_C=5.0\text{mA}$ $f=930\text{MHz}$		140		mV

/ Electrical Characteristic Curve



/ Marking Instructions

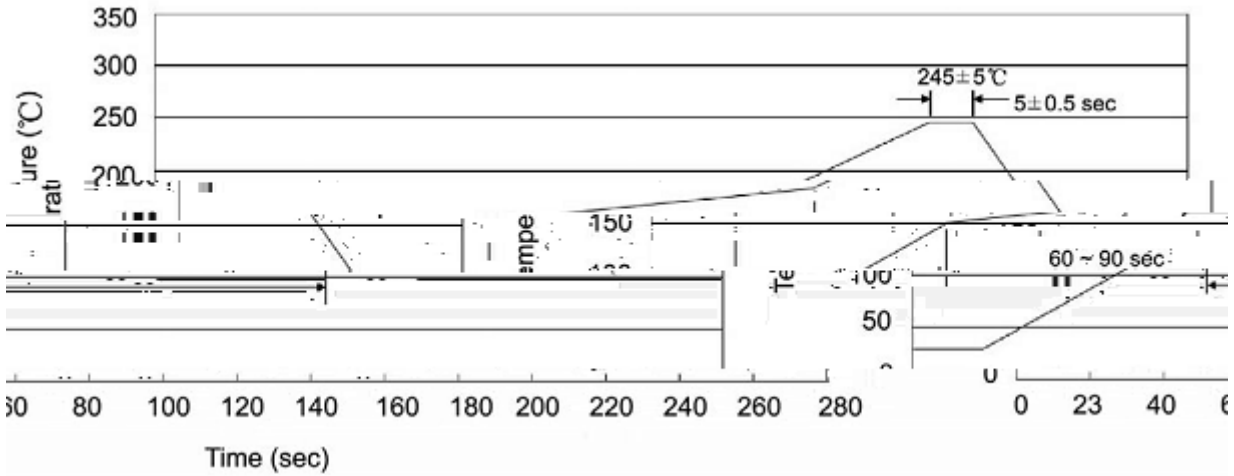


Note:

Company Code

Product Type Code

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



Note:

- | | | | | | |
|---|-----|-----|----|----------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 245 | 5 | 5 | 0.5sec; | 2.Peak Temp.:245 5 , Duration:5 0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering ⑤ Test Conditions

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

/ Packaging SPEC.

/ REEL

Units Dimension (unit mm³)