

/ Descriptions

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

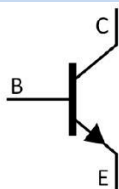
/ Features

Low $V_{CE(sat)}$, high current.

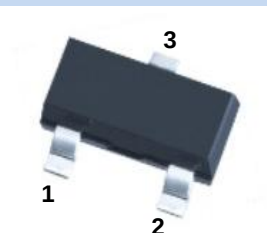
/ Applications

General purpose switching and muting, LCD back-lighting, supply line switching circuits.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	>300
Marking	HZC

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	50	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current	I_C	2	A
Peak Collector Current	I_{CM}	5	A
Base Current	I_B	0.5	A
Total Power Dissipation	$P_{tot(1)}$	300	mW
	$P_{tot(2)}$	1.2	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-65 150	

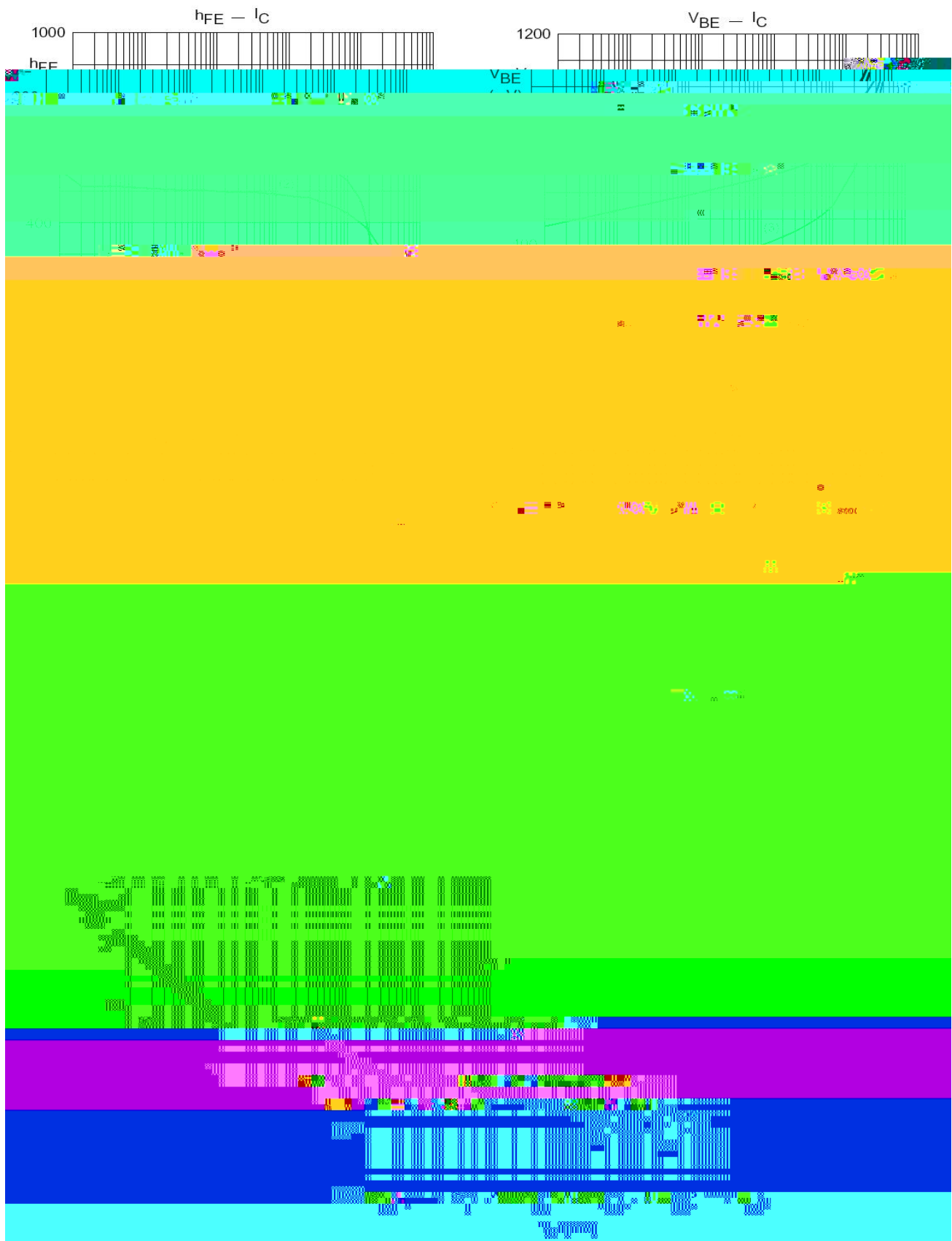
1 $tp \leq 100 \text{ ms}$ ≤ 0.25
2

/ Electrical Characteristics(Ta=25)

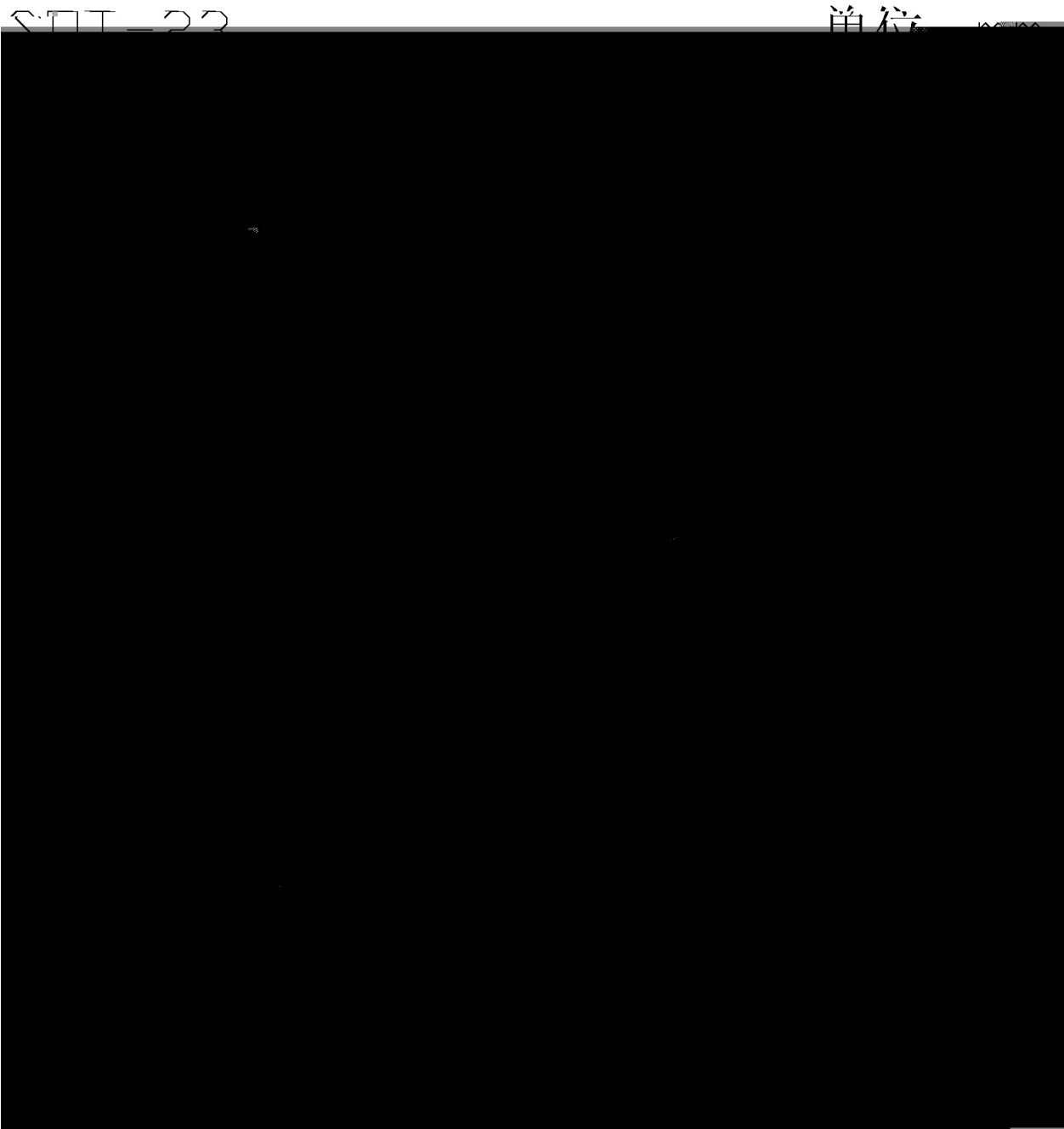
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V \quad I_E=0$			100	nA
		$V_{CB}=50V \quad I_E=0$ $T_j=150$			50	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V \quad I_C=0$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2.0V \quad I_C=100mA$	300			
	$h_{FE(2)}$	$V_{CE}=2.0V \quad I_C=500mA$	300			
	$h_{FE(3)*}$	$V_{CE}=2.0V \quad I_C=1.0A$	300			
	$h_{FE(4)*}$	$V_{CE}=2.0V \quad I_C=2.0A$	200			
	$h_{FE(5)*}$	$V_{CE}=2.0V \quad I_C=3.0A$	100			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=500mA \quad I_B=50mA$			80	mV
	$V_{CE(sat)(2)*}$	$I_C=2.0A \quad I_B=100mA$			280	mV
Equivalent On-Resistance	$R_{CE(sat)*}$	$I_C=2.0A \quad I_B=200mA$		100	130	$m\Omega$
Base-Emitter Saturation Voltage	$V_{BE(sat)*}$	$I_C=2.0A \quad I_B=100mA$			1.1	V
		$I_C=3.0A \quad I_B=300mA$			1.2	V
Base-Emitter Voltage	$V_{BE(ON)*}$	$V_{CE}=2.0V \quad I_C=1.0A$			1.2	V
Transition Frequency	f_T	$V_{CE}=5.0V \quad I_C=100mA$ $f=100MHz$	100			MHz
Collector Capacitance	C_C	$V_{CB}=10V \quad I_E=0$ $f=1.0MHz$			25	pF

* : $tp \leq 300 \text{ } \mu s$; $\delta \leq 0.02$.

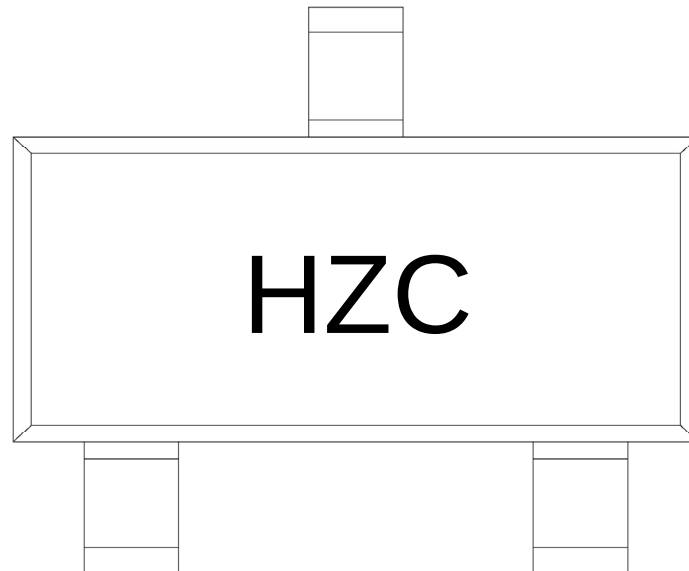
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



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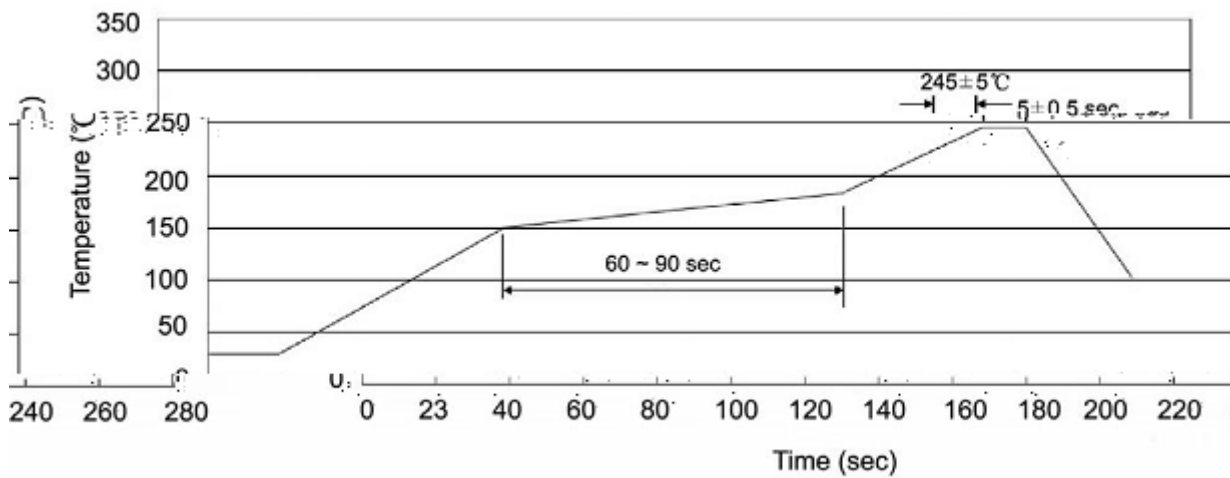
ZC

Note:

H Company Code

ZC 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 | | $5 \pm 0.5 \text{ sec}$; | 2.Peak Temp.: 245 ± 5 , Duration: $5 \pm 0.5 \text{ sec}$. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260 ± 5 $10 \pm 1 \text{ sec.}$ Temp.: 260 ± 5 Time: $10 \pm 1 \text{ sec}$