

/ Descriptions

TO-220F NPN Silicon NPN transistor in a TO-220F Plastic Package.

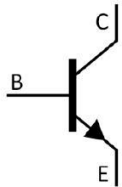
/ Features

High V_{CEO} , low $V_{CE(sat)}$.

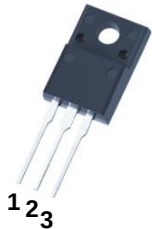
/ Applications

Power out amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	R	O
h_{FE} Range	60~120	100~200

/ Absolute Maximum Ratings(Ta=25)

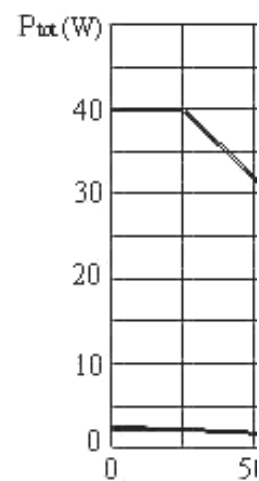
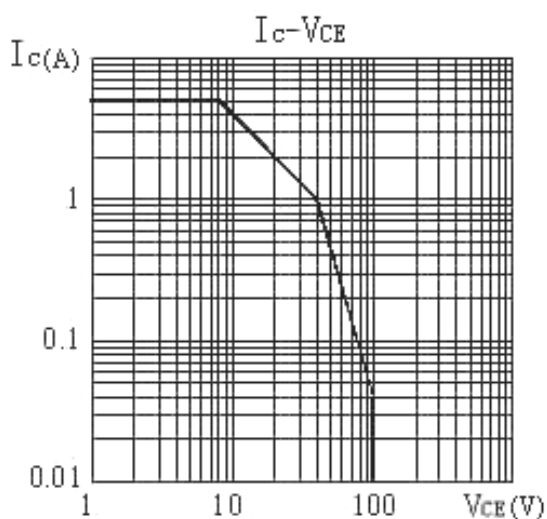
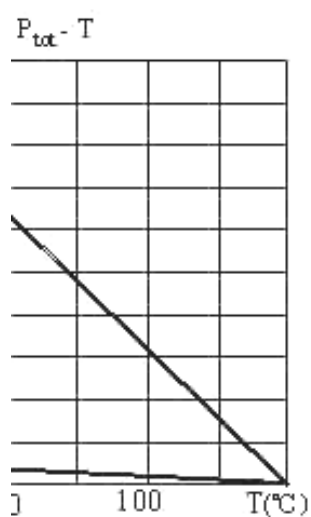
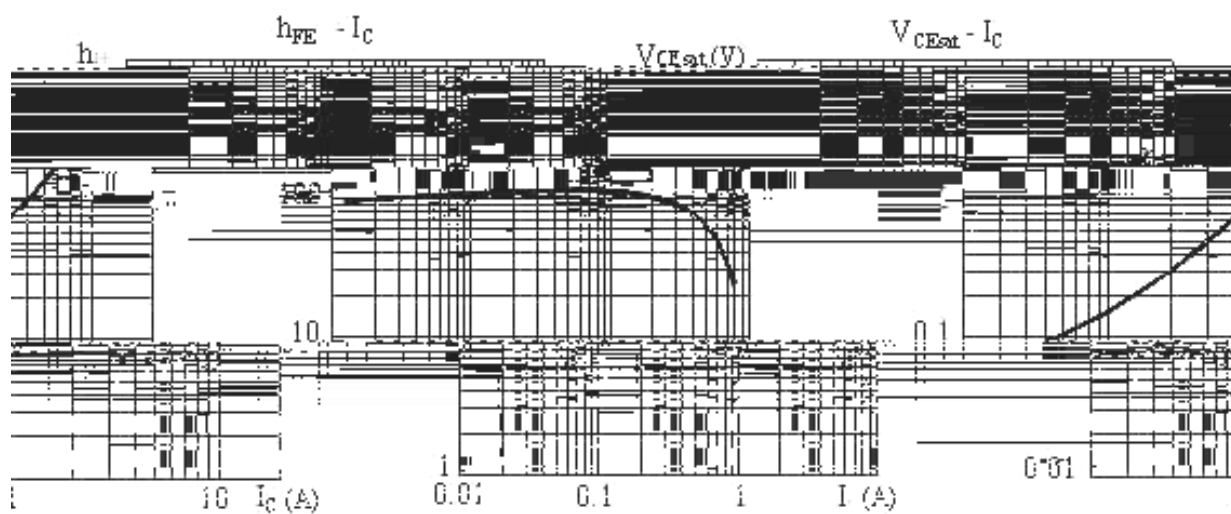
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	100	V
Collector to Emitter Voltage	V_{CEO}	100	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	5.0	A
Collector Power Dissipation	P_C	2.0	W
Collector Power Dissipation	$P_C(T_C=25^{\circ}C)$	40	W
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55~150	$^{\circ}C$

/ Electrical Characteristics(Ta=25)

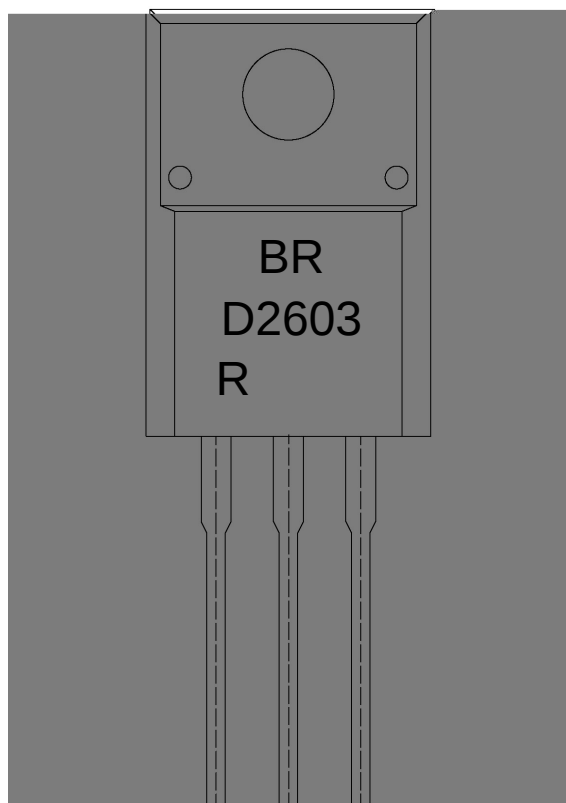
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=100V$ $I_E=0$			20	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			20	A
DC Current Gain*	h_{FE}	$V_{CE}=5.0V$ $I_C=1.0A^*$	60		200	
Collector to Emitter Saturation Voltage*	$V_{CE(sat)}$	$I_C=3.0A$ $I_B=0.3A^*$			1.0	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $f=1.0MHz$ $I_C=500mA$	10			MHz

*: /pulse test.

/ **Electrical Characteristic Curve**



/ Marking Instructions



BR

D2603

R: h_{FE}

Note:

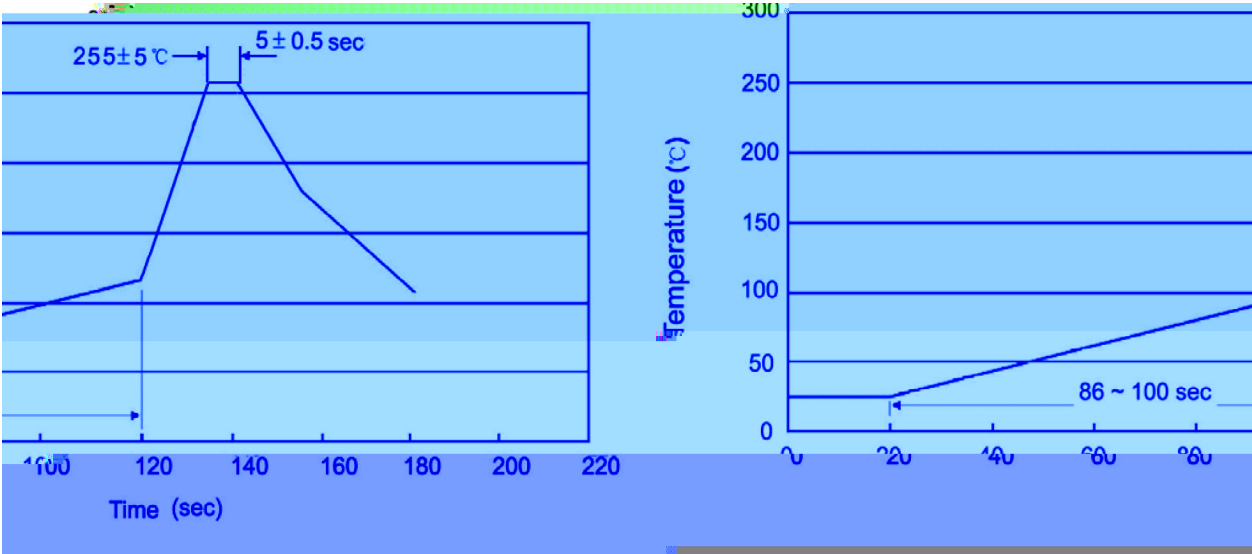
BR: Company Code.

D2603: Product Type.

R: h_{FE} Classifications Symbol

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- 1

25 150

60 90sec;
- 2

255±5

5±0.5sec;
- 3

2 10 /sec.
- 1.Preheating:25~150

, Time:60~90sec.
- 2.Peak Temp.:255±5

, Duration:5±0.5sec.
3. Cooling Speed: 2~10

/sec.

/ Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5℃ Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只袋	袋盒	只盒	盒箱	只箱	袋	盒	箱
				/	:			

/ TUBE

Package Type 封装形式	Units 包装数量			Dimension 包装尺寸 (unit: mm ³)
	只套管	套管盒	只盒	