

/ Descriptions

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

/ Features

C-B $V_{CBO} = 150V$ $I_C = 5A$
High Collector-Base Voltage, High Collector Current.

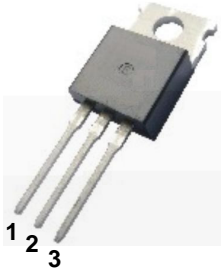
/ Applications

B/W TV horizontal deflection output.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	N	R	O
h_{FE} Range	20 50	40 80	70 140

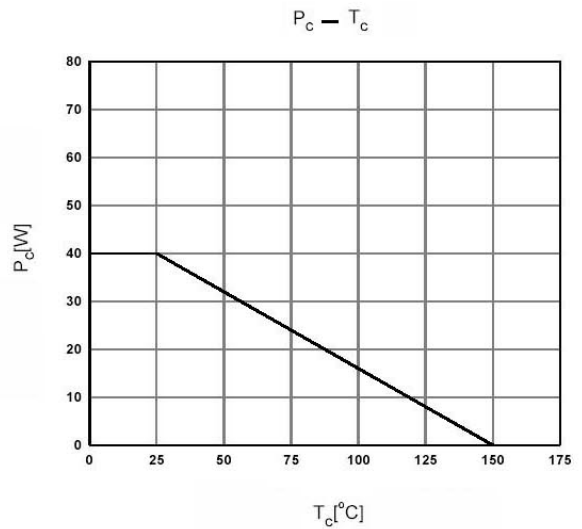
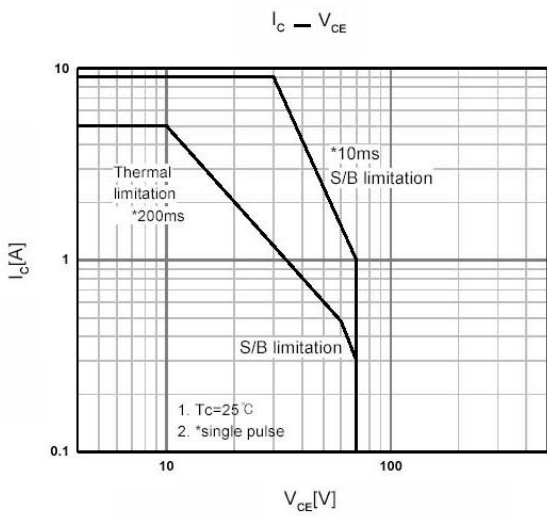
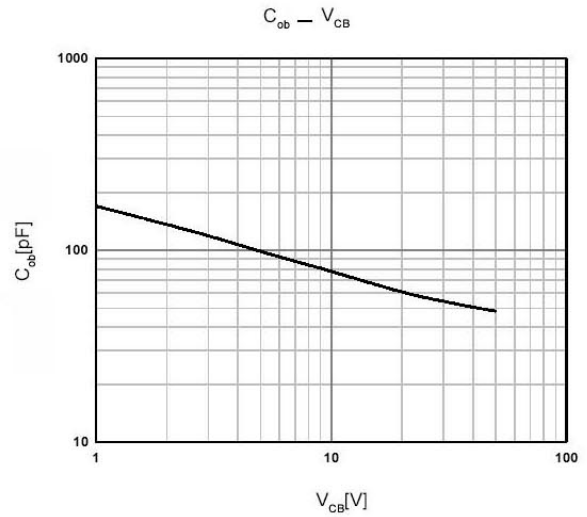
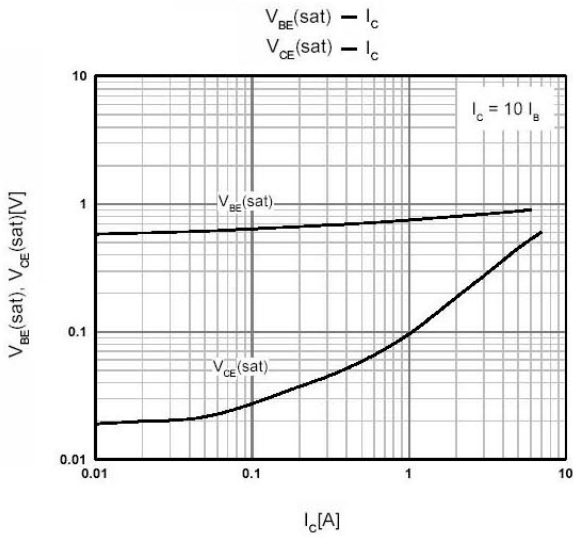
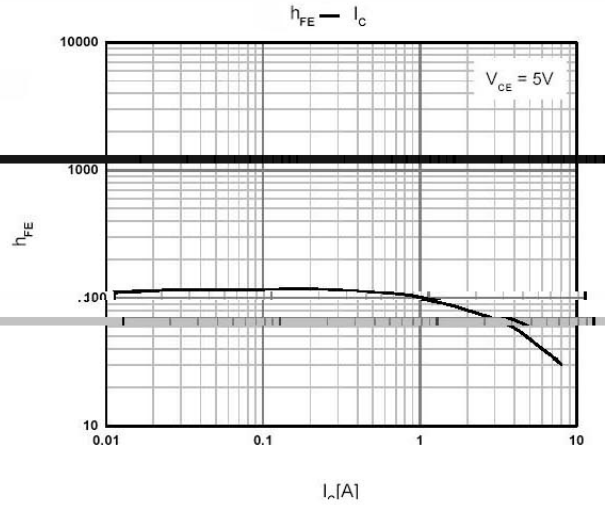
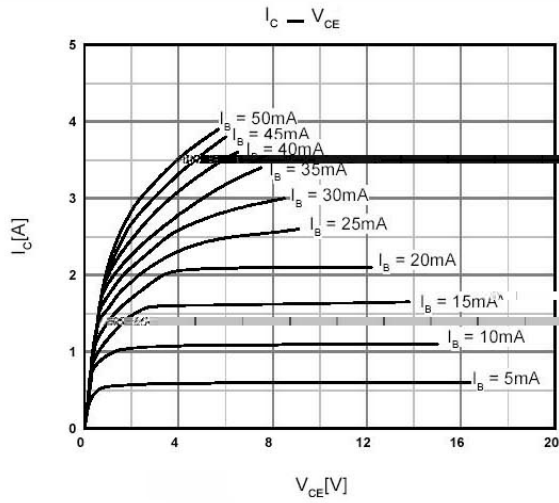
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	150	V
Collector to Emitter Voltage	V_{CEO}	70	V
Emitter to Base Voltage	V_{EBO}	8.0	V
Collector Current - Continuous	I_C	5.0	A
Collector Power Dissipation	$P_C(T_C=25)$	40	W
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 to Base Breakdown Voltage	V_{CBO}	$I_C=1.0mA$ $I_E=0$	150			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=2.0mA$ $R_{BE}=\infty$	70			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=1.0mA$ $I_C=0$	8.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=100V$ $I_E=0$			20	A
DC Current Gain	h_{FE}	$V_{CE}=5.0V$ $I_C=5.0A$	20		140	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5.0A$ $I_B=0.5A$			1.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5.0A$ $I_B=0.5A$			1.5	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=0.5A$		10		MHz

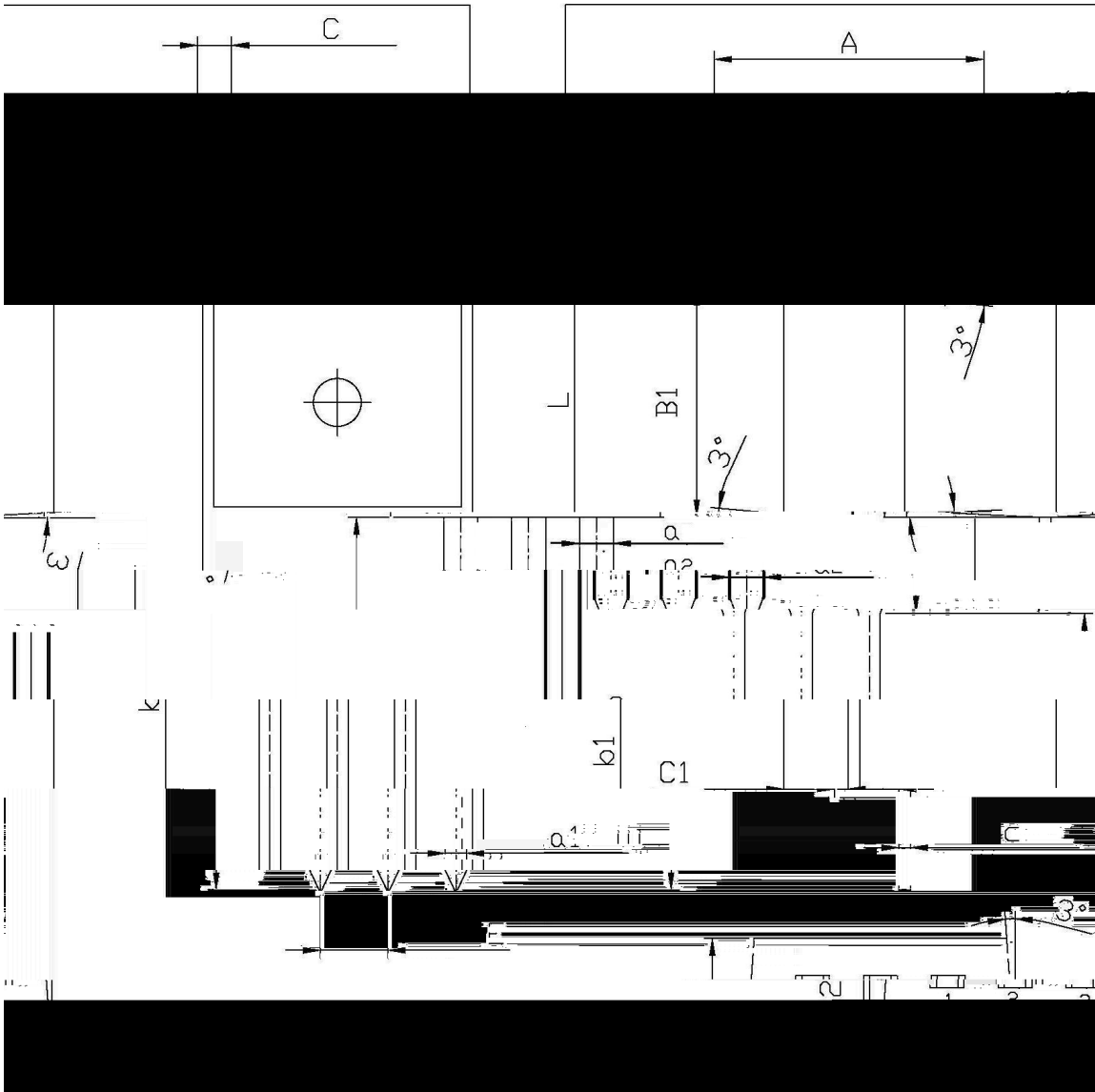
/ Electrical Characteristic Curve



/ Package Dimensions

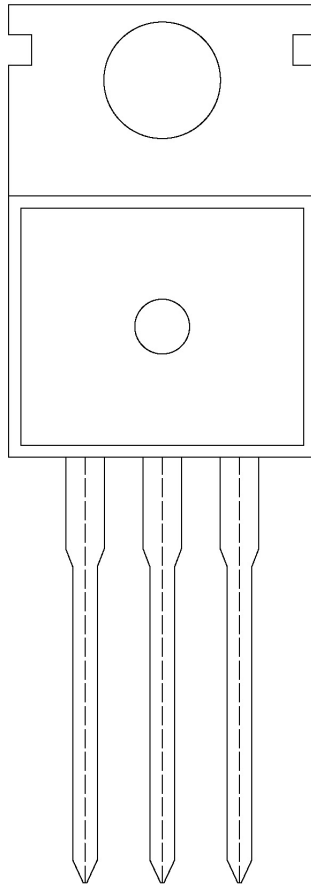
单位: mm

TO-220

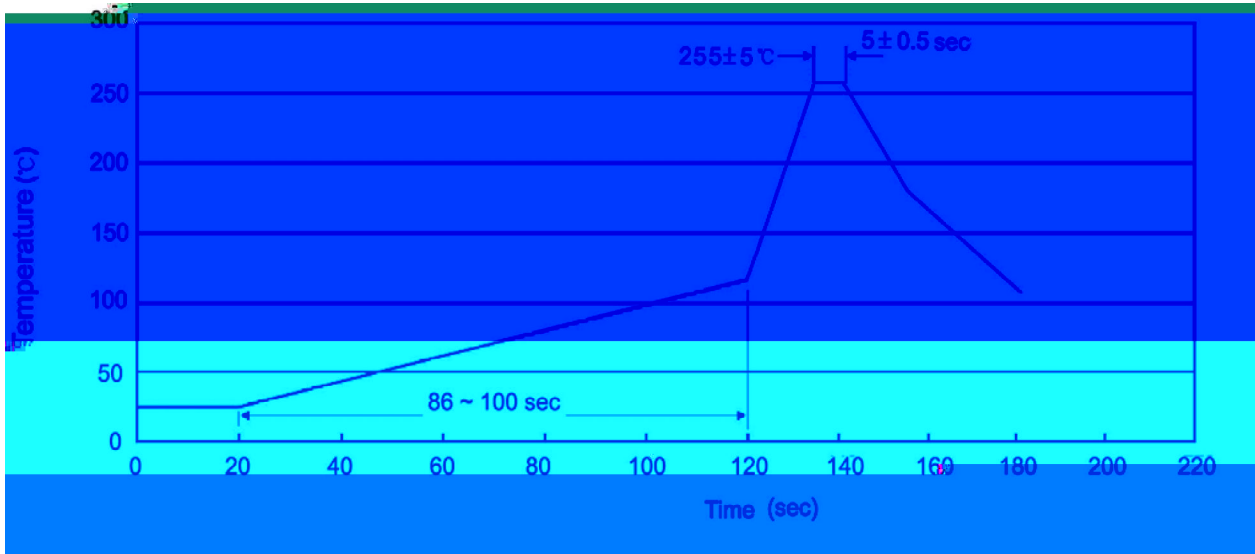


Symbol	DIMENSIONS IN MILLIMETERS		Symbol	DIMENSIONS IN MILLIMETERS	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
15.7	16.1	B1	9.0	9.4	
b1	12.6	13.6	C1	2.2	2.6
a	0.22	0.32	a	0.4	0.6
k	1.27	1.71	k	1.3	1.7
ω	0.2	0.25	ω	0.145	

/ Marking Instructions



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



Note:

- | | | | |
|---|--------|-----------|---|
| 1 | 25 150 | 60 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 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

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	盒箱	只箱	套管	盒	箱

/ Notices