

**/ Descriptions**

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

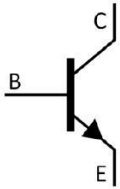
**/ Features**

High voltage, small collector output capacitance.

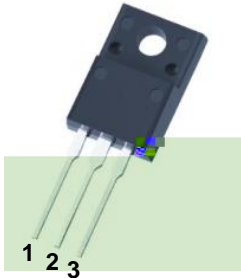
**/ Applications**

Color TV chroma output application.

**/ Equivalent Circuit**



**/ Pinning**



PIN1   Base          PIN 2   Collector          PIN 3   Emitter

**/ h<sub>FE</sub> Classifications & Marking**

See Marking Instructions.

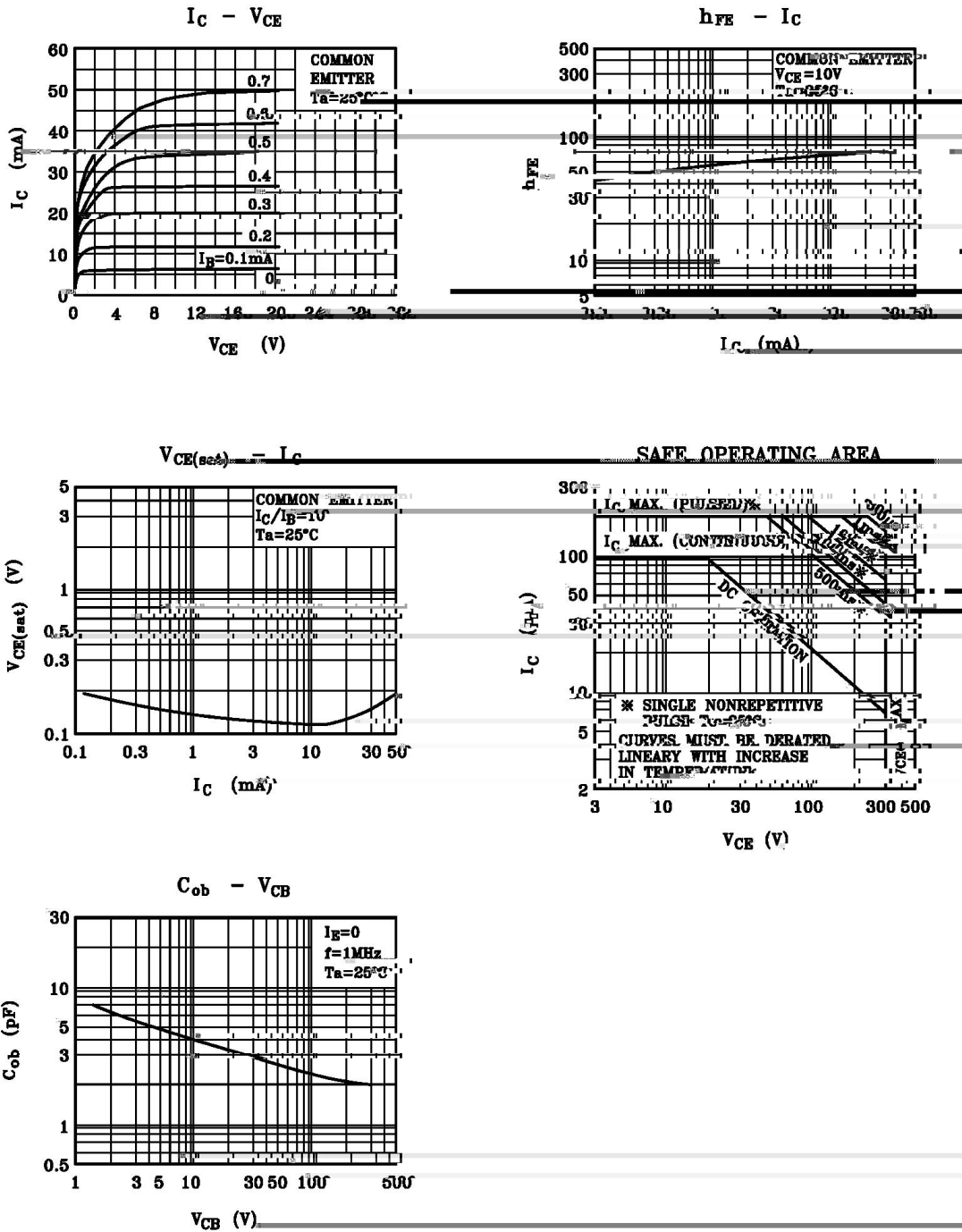
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	300	V
Collector to Emitter Voltage	$V_{CE0}$	300	V
Emitter to Base Voltage	$V_{EBO}$	5	V
Collector Current - Continuous	$I_C$	100	mA
Base Current	$I_B$	20	mA
Collector Power Dissipation	$P_C(T_C=25 )$	2	W
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

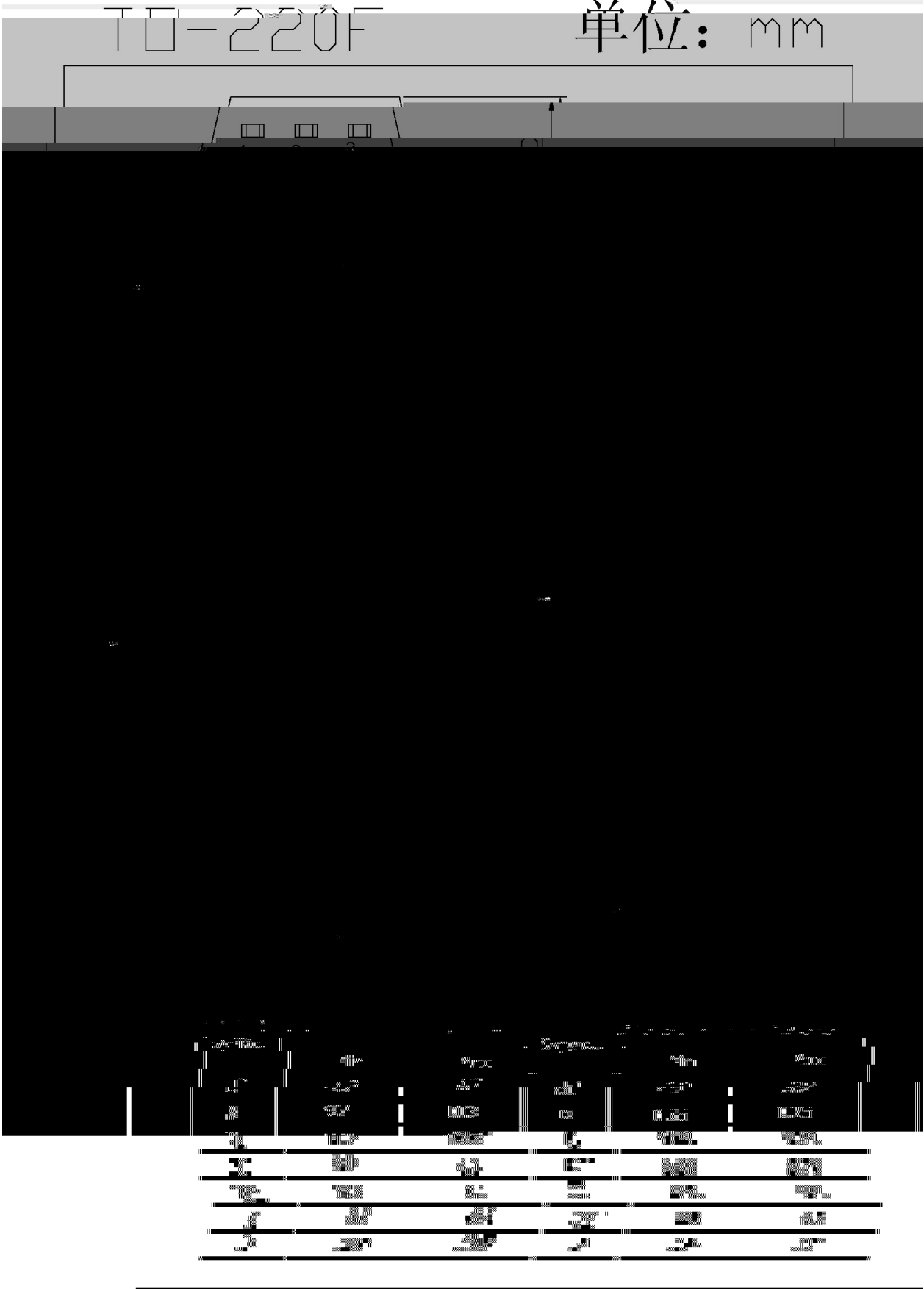
**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=240V$ $I_E=0$			1	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=5V$ $I_C=0$			1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10V$ $I_C=0.5mA$	20			
	$h_{FE(2)}$	$V_{CE}=10V$ $I_C=20mA$	30		200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1mA$			1	V
Transition Frequency	$f_T$	$V_{CE}=20V$ $I_C=20mA$	75	95		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=20V$ $f=1MHz$ $I_E=0$		4		pF

/ Electrical Characteristic Curve

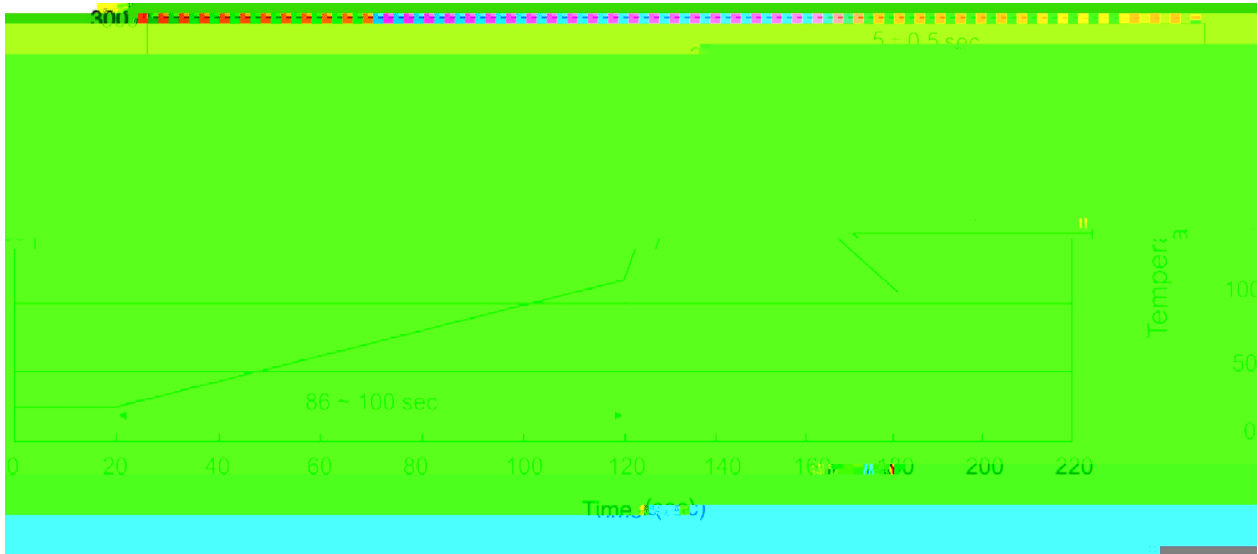


/ Package Dimensions





( ) / 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	Units					Dimension (unit mm3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm3)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices