

/ Descriptions

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

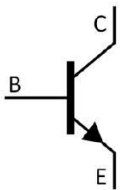
/ Features

High voltage, small collector output capacitance.

/ Applications

Color TV chroma output application.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

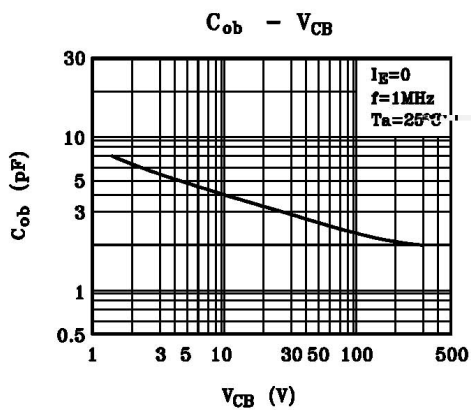
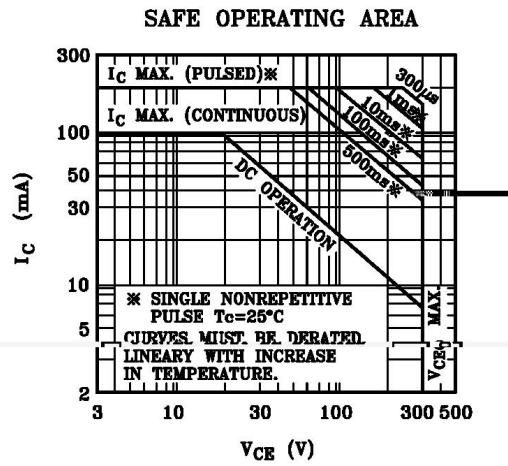
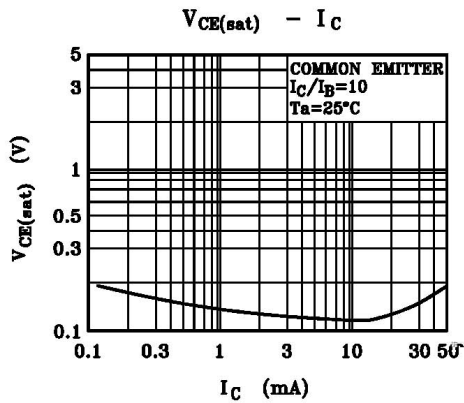
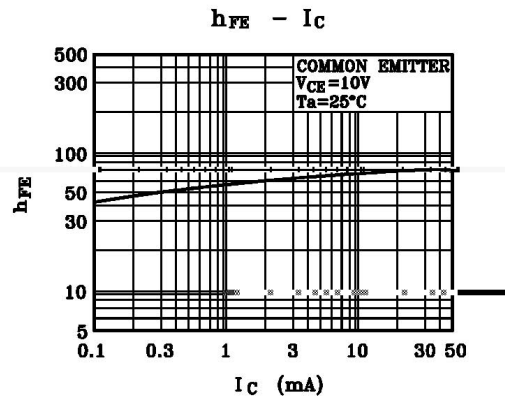
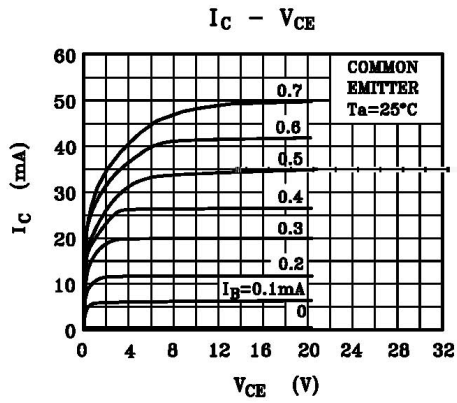
/ Absolute Maximum Ratings(Ta=25)

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	$P_C(T_C=25^{\circ}C)$	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	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5V$ $I_C=0$			1	μA
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

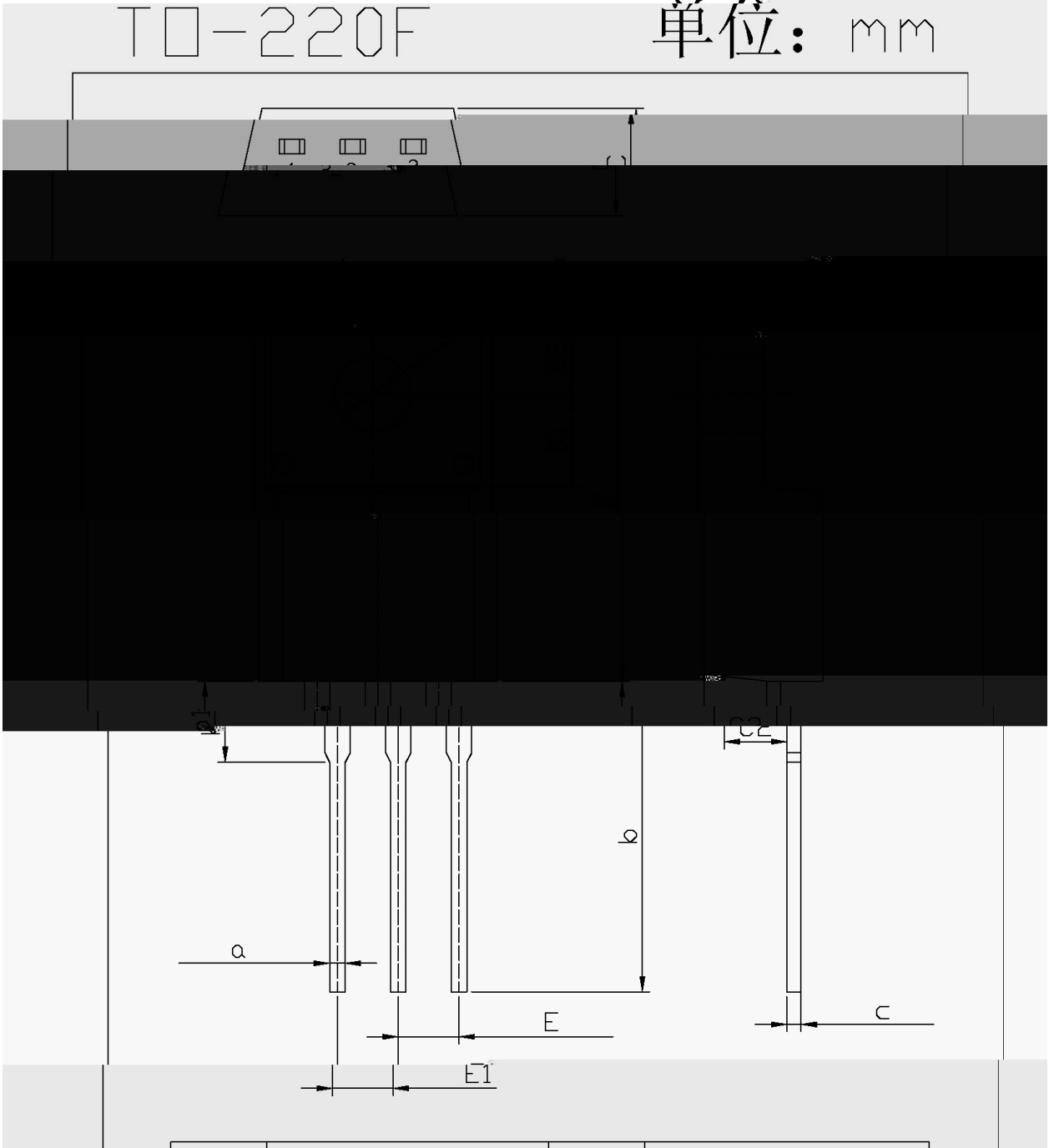
/ Electrical Characteristic Curve



/ Package Dimensions

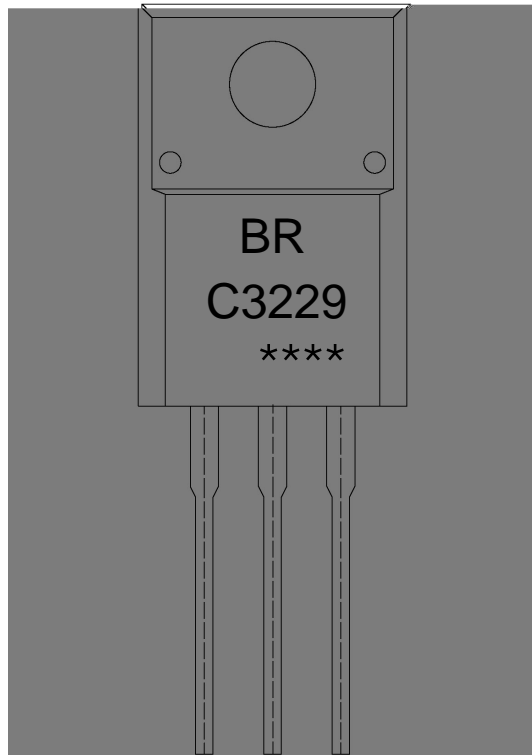
TO-220F

单位: mm



Dimensions In Millimeters			Dimensions In Millimeters		
Symbol	Min	Max	Symbol	Min	Max
C	4.3	4.7	b1	2.9	3.9
A	9.7	10.3	a	0.55	0.75
B	14.7	15.3	E	2.29	2.79
B1	2.8	4.0	E1	2.29	2.79
B2	2.9	3.1	C1	2.5	2.9

/ Marking Instructions



BR

C3229

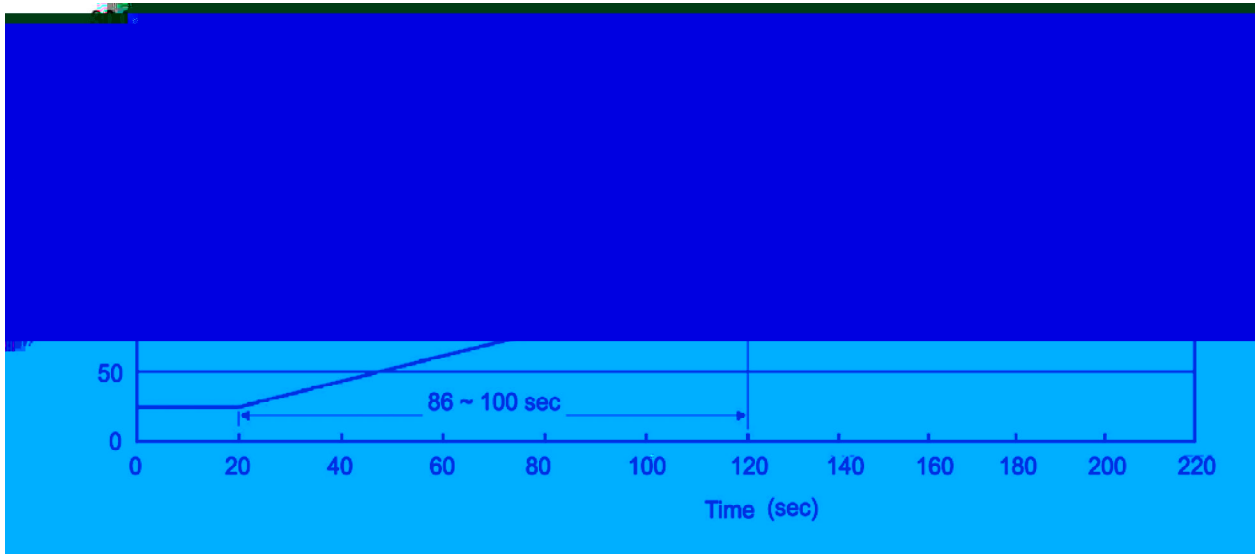
Note:

BR: Company Code.

C3229: Product Type.

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

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

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-220F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices