

**/ Descriptions**

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

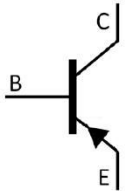
**/ Features**

        ,          KTC4369  
Good linearity of  $h_{FE}$ , complementary to KTC4369.

**/ Applications**

General purpose amplifier.

**/ Equivalent Circuit**



**/ Pinning**



PIN1   Base          PIN 2   Collector          PIN 3   Emitter

**/  $h_{FE}$  Classifications & Marking**

$h_{FE}$ Classifications Symbol	O	Y
$h_{FE}$ Range	70   140	120   240

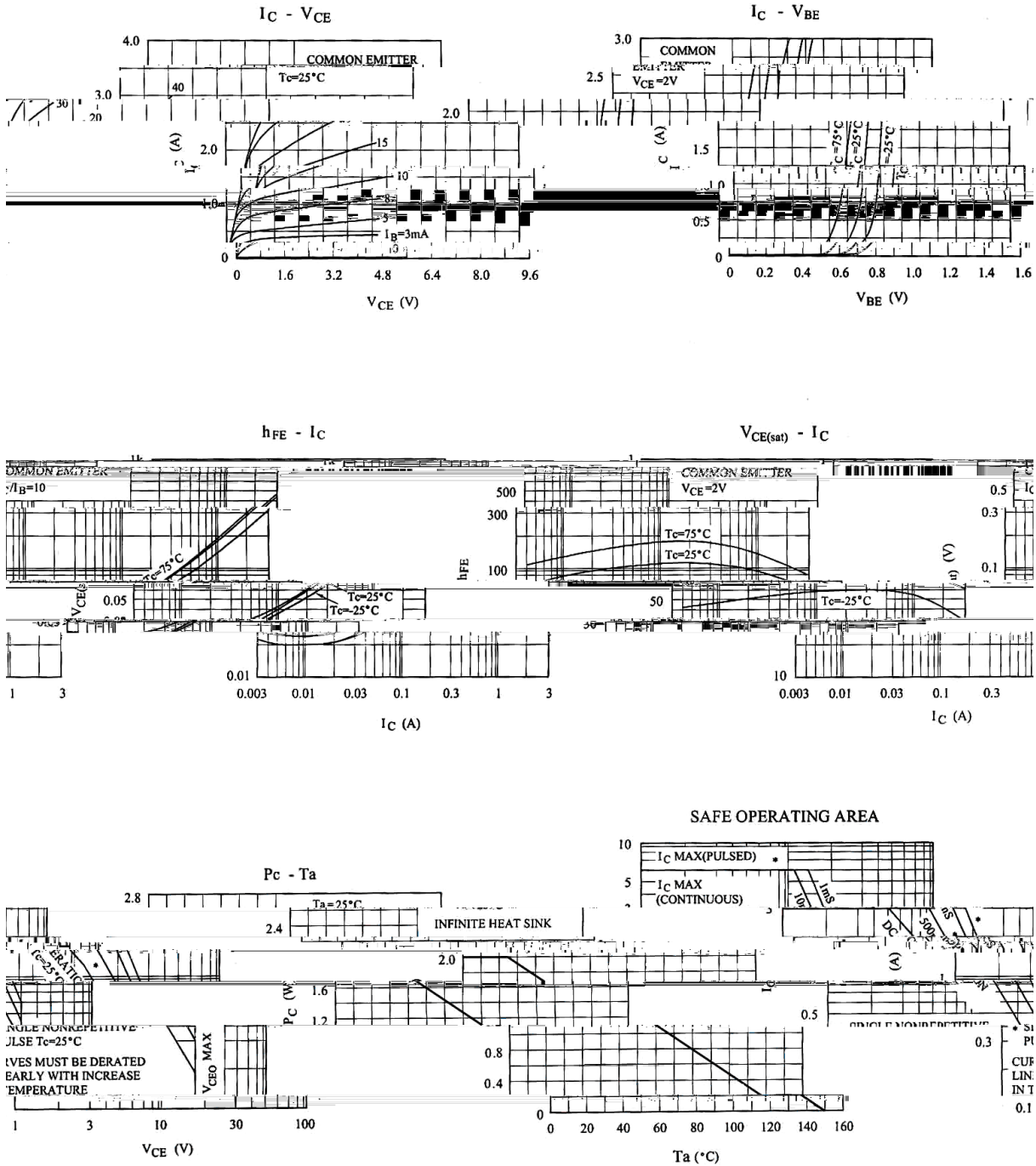
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-30	V
Collector to Emitter Voltage	$V_{CEO}$	-30	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current - Continuous	$I_C$	-3.0	A
Base Current	$I_B$	-0.3	A
Collector Power Dissipation	$P_C$	2.0	W
Collector Power Dissipation	$P_C(T_c=25 )$	15	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55 150	°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=-10mA$ $I_B=0$	-30			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-20V$ $I_E=0$			-1.0	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-5.0V$ $I_C=0$			-1.0	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-0.5A$	70		240	
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-2.5A$	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-2.0A$ $I_B=-0.2A$		-0.3	-0.8	V
Collector to Emitter Voltage	$V_{BE}$	$V_{CE}=-2.0V$ $I_C=-0.5A$		-0.75	-1.0	V
Transition Frequency	$f_T$	$V_{CE}=-2.0V$ $I_C=-0.5A$		100		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=-10V$ $I_E=0$ $f=1.0MHz$		40		pF

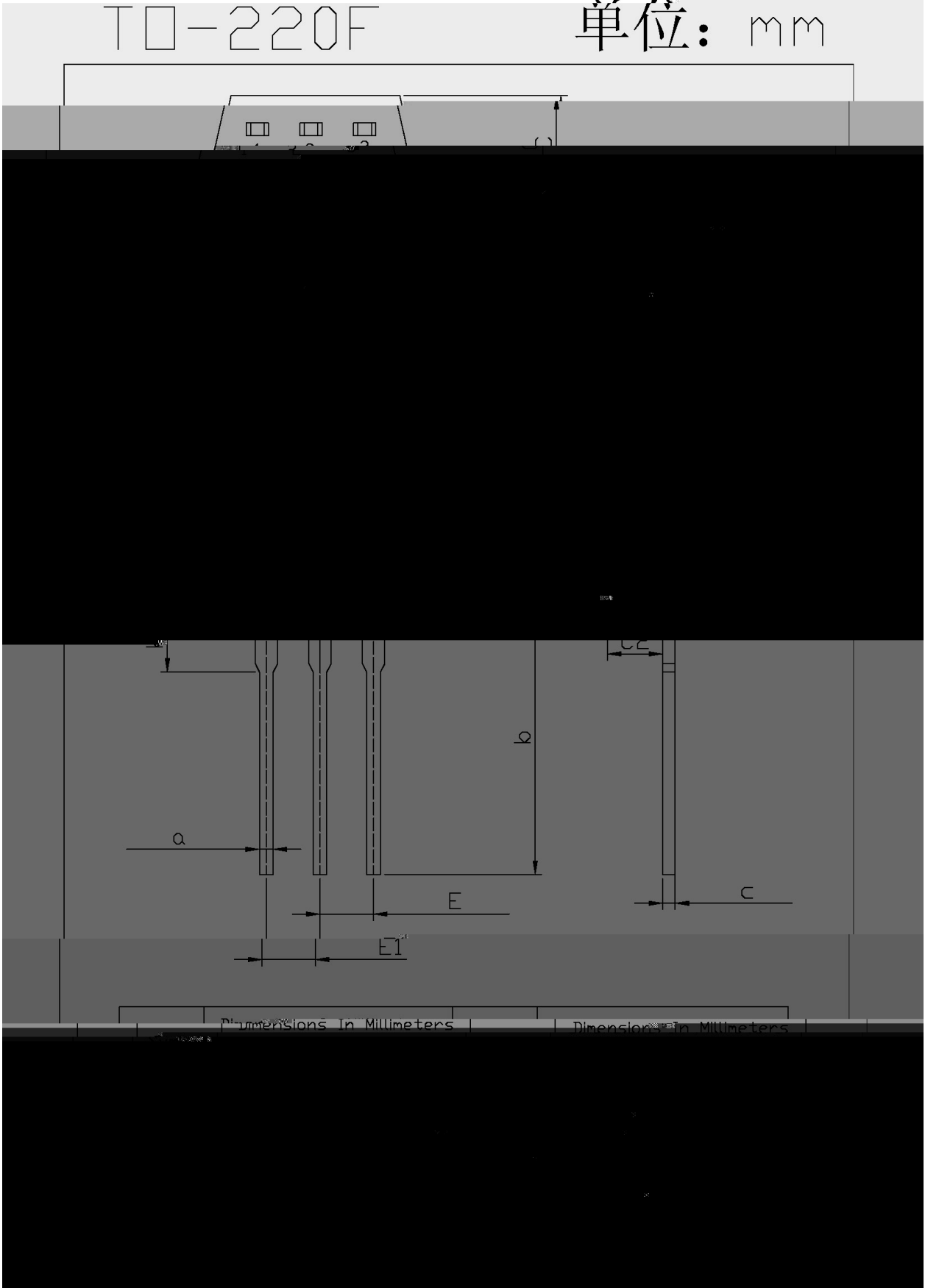
/ Electrical Characteristic Curve



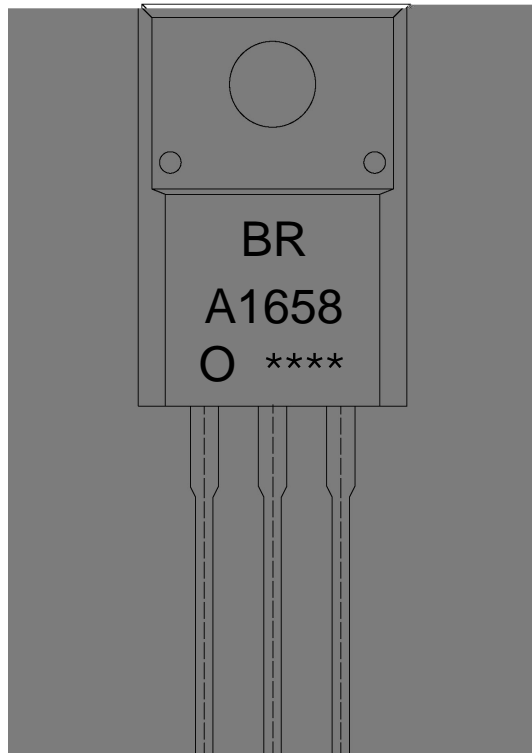
/ Package Dimensions

TO-220F

单位: mm



**/ Marking Instructions**



BR

A1658

O:  $h_{FE}$

\*\*\*\*

**Note:**

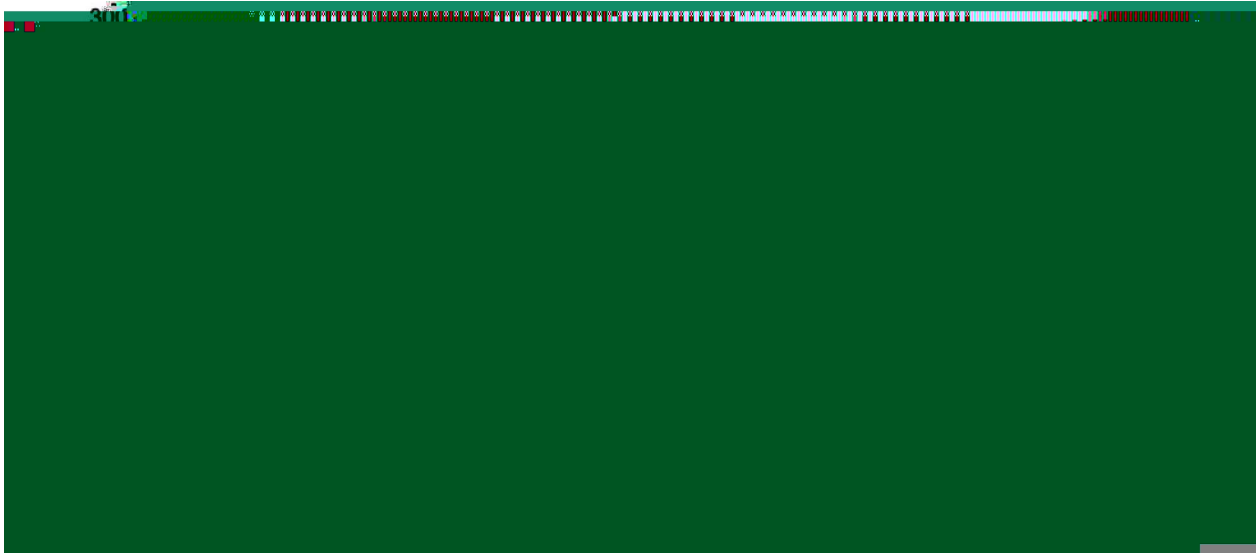
BR: Company Code.

A1658: Product Type.

O:  $h_{FE}$  Classifications Symbol.

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

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



Note:

- |   |        |           |                                         |
|---|--------|-----------|-----------------------------------------|
| 1 | 25 150 | 60 90sec; | 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