

/ Descriptions

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

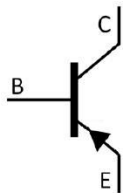
/ Features

Low saturation voltage, excellent dependence of h_{FE} on current, fast switching time.

/ Applications

Lamp drivers, power amplifiers, high-speed switching.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Q	R	S
h_{FE} Range	70 140	100 200	140 280

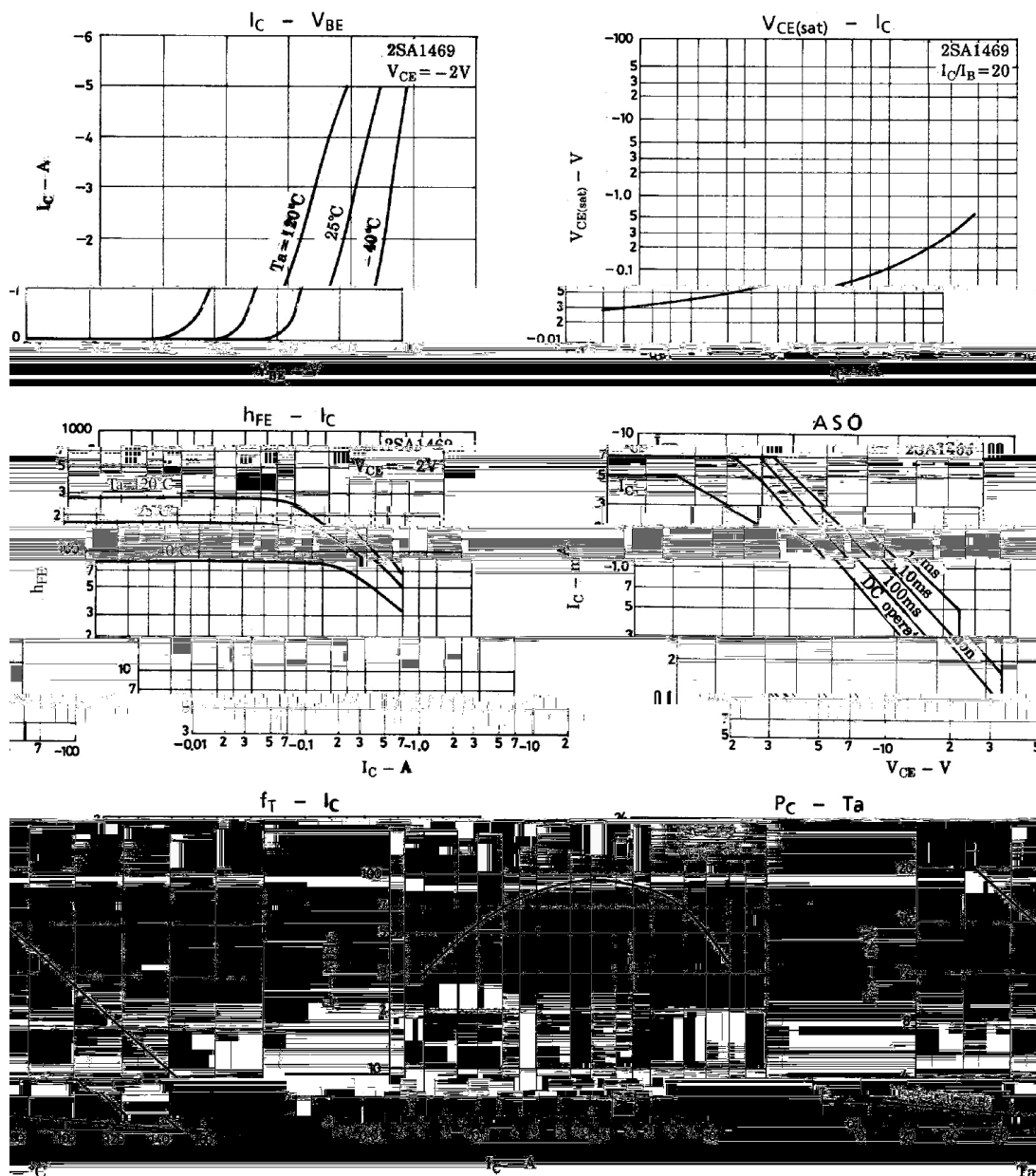
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-80	V
Collector to Emitter Voltage	V_{CEO}	-60	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-5.0	A
Collector Current – Continuous(Pulse)	I_{CP}	-7.0	A
Collector Power Dissipation	P_C	2.0	W
Collector Power Dissipation	$P_C(T_c=25)$	20	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

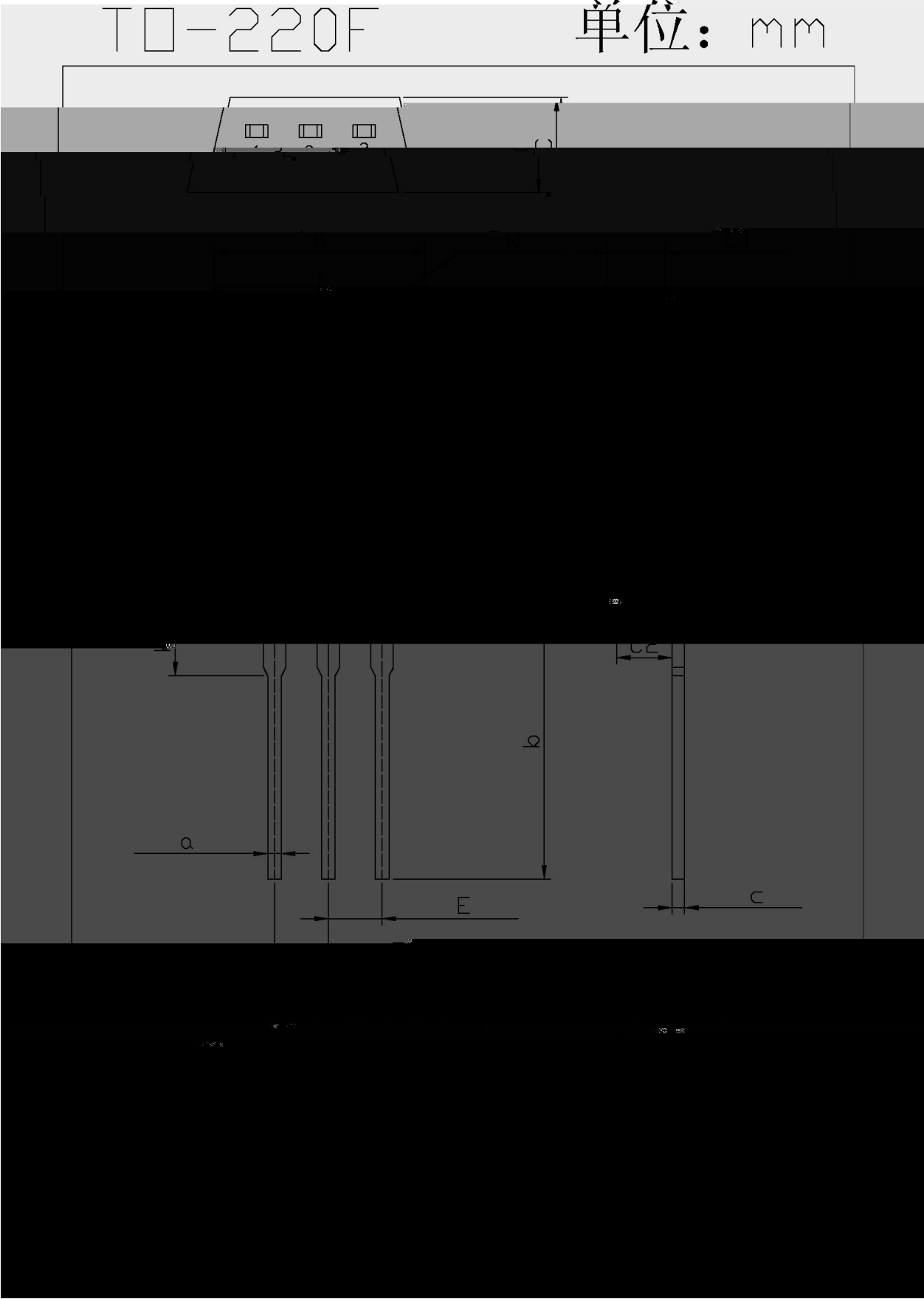
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=-1.0mA$ $I_E=0$	-80			V
Collector to Base Breakdown Voltage	V_{CEO}	$I_C=-1.0mA$ $I_B=0$	-60			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=-1.0mA$ $I_C=0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-40V$ $I_E=0$			-0.1	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-4.0V$ $I_C=0$			-0.1	mA
DC Current Gain	h_{FE}	$V_{CE}=-2.0V$ $I_C=-1.0A$	70		280	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-2.5A$ $I_B=-0.125A$			-0.4	V
Transition Frequency	f_T	$V_{CE}=-5.0V$ $I_C=-1.0A$		100		MHz
Turn-On Time	t_{on}	$20I_{B1}=-20I_{B2}=I_C=2A$		0.1		μs
Storage Time	t_{stg}			0.5		
Fall Time	t_f			0.1		

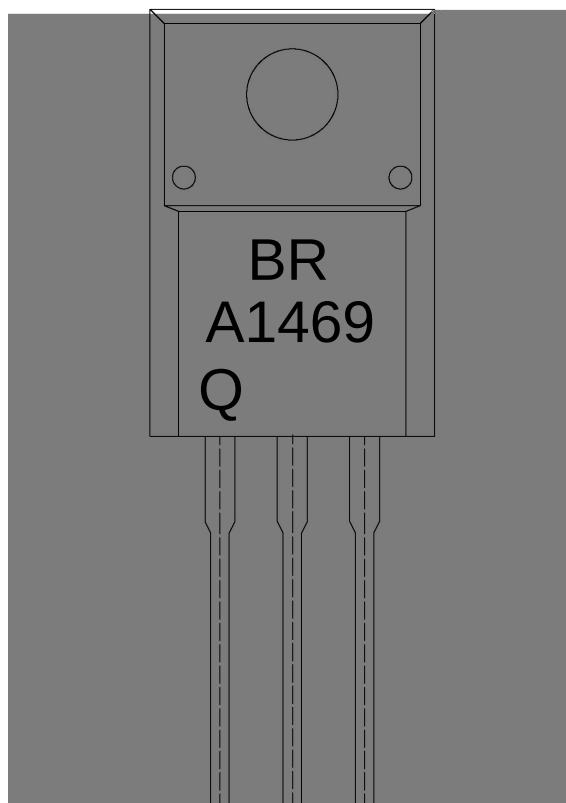
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

A1469

Q: h_{FE}

Note:

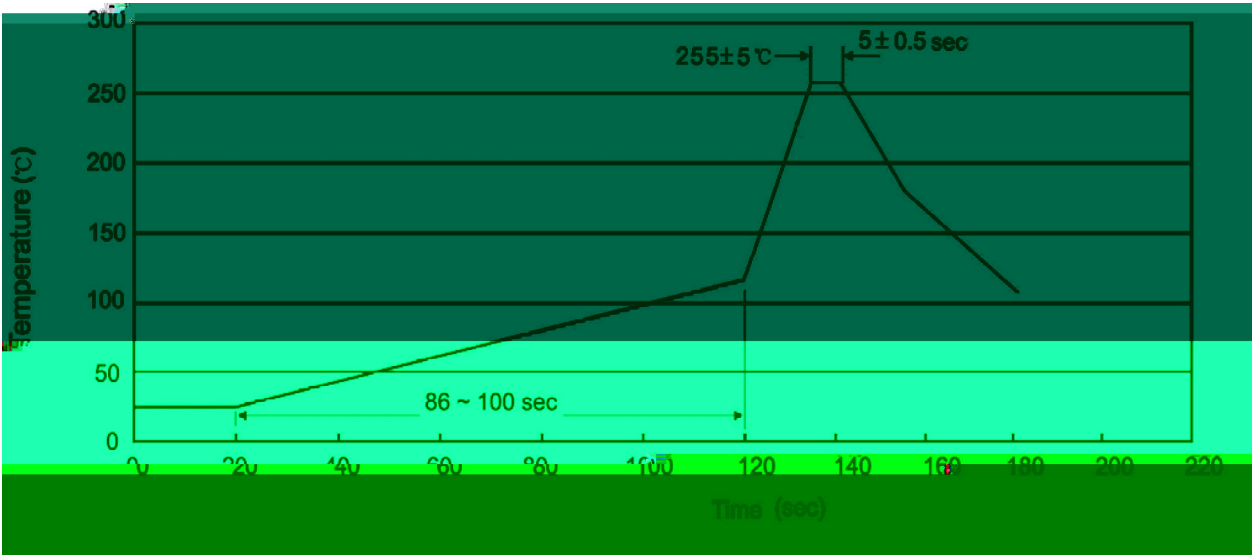
BR: Company Code.

A1469: Product Type.

Q: 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	盒 箱	只 箱	套管	盒	箱

/ Notices