

/ Descriptions

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

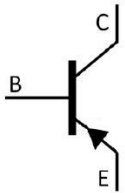
/ Features

Low $V_{CE(sat)}$, excellent DC current gain characteristics, wide SOA, fast speed switching, complements the 2SC4596.

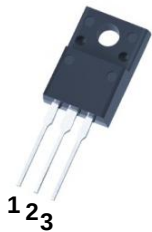
/ Applications

High speed switching applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

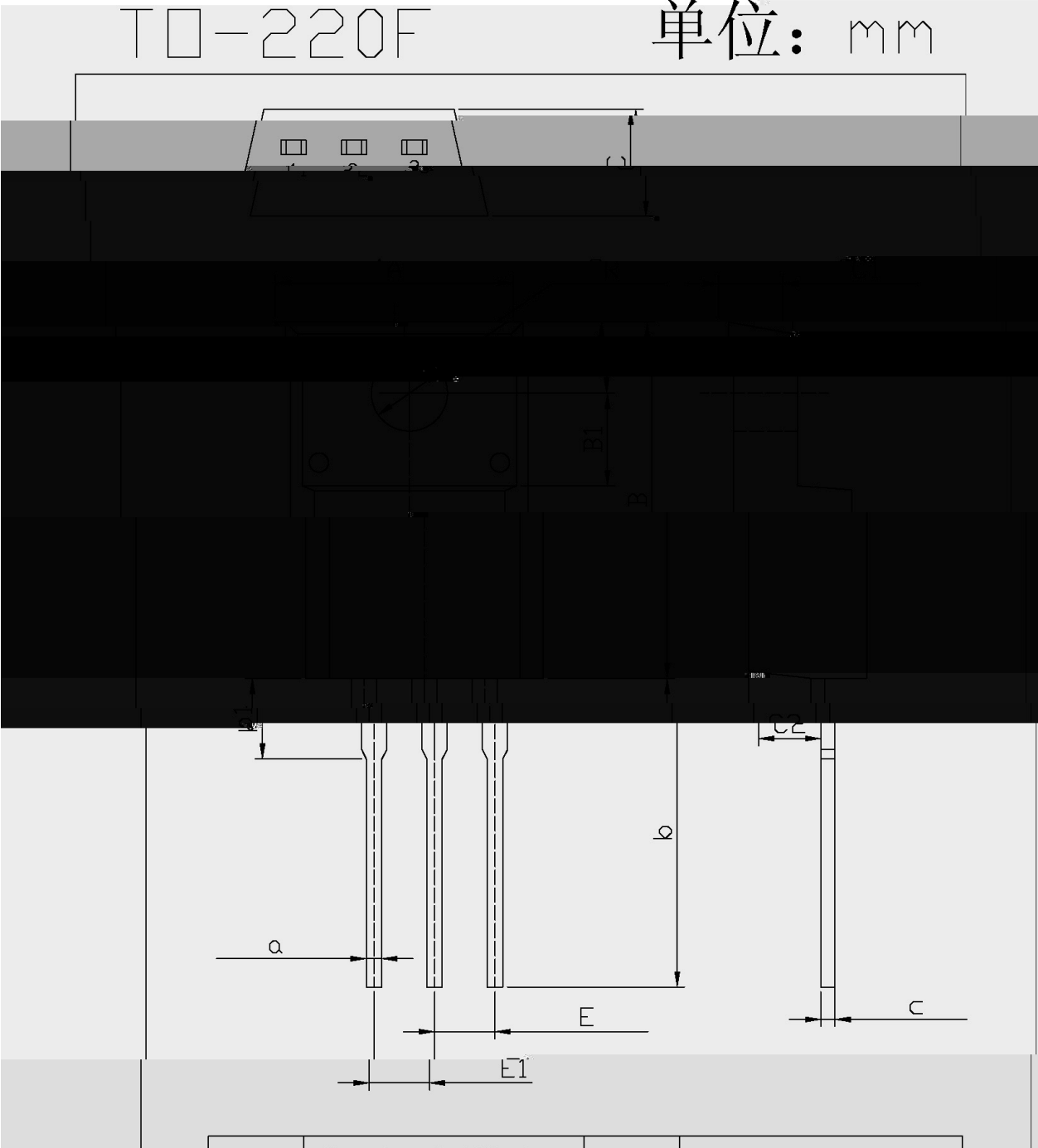
h_{FE} Classifications Symbol	D	E	F
h_{FE} Range	60 120	100 200	160 320

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-100	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}	-10	A
Collector Power Dissipation	P_C	2.0	W
Collector Power Dissipation	$P_C(T_C=25)$	25	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

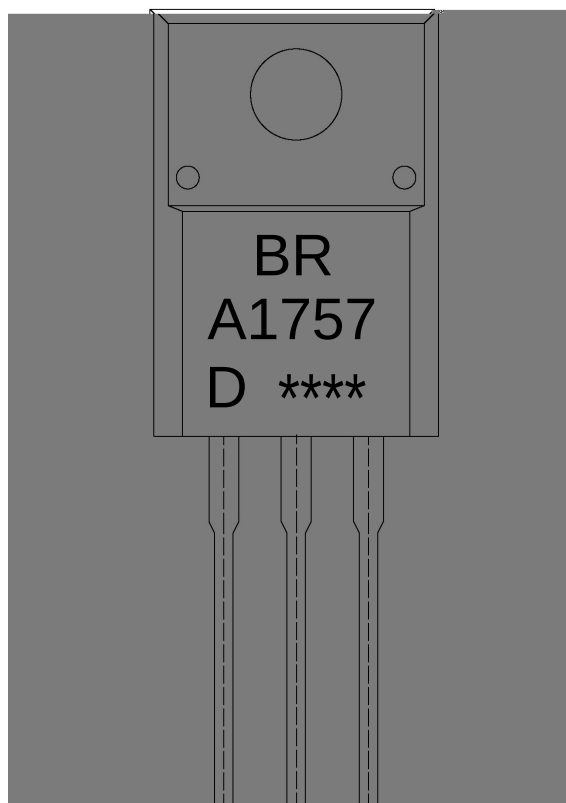
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=-50\mu A$ $I_E=0$	-100			V
Collector to Base Breakdown Voltage	V_{CEO}	$I_C=-1.0mA$ $I_B=0$	-60			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=-50\mu A$ $I_C=0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-100V$ $I_E=0$			-10	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5.0V$ $I_C=0$			-10	μA
DC Current Gain	h_{FE}	$V_{CE}=-2.0V$ $I_C=-1.0A$	60		320	
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=-3.0A$ $I_B=-0.15A$			-0.3	V
	$V_{CE(sat)(2)}$	$I_C=-4.0A$ $I_B=-0.2A$			-0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C=-3.0A$ $I_B=-0.15A$			-1.2	V
	$V_{BE(sat)(2)}$	$I_C=-4.0A$ $I_B=-0.2A$			-1.5	V
Transition Frequency	f_T	$V_{CE}=-10V$ $I_E=0.5A$ $f=30MHz$		80		MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10V$ $I_E=0A$ $f=1.0MHz$		130		pF
Turn-On Time	t_{on}	$V_{CC}=-30V$ $I_C=-3A$ $R_L=10\Omega$ $I_{B1}=-I_{B2}=-0.15A$			0.3	μs
Fall Time	t_f				0.3	μs
Storage Time	t_{stg}				1.5	μs

/ Package Dimensions



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	2.9	4.0	E1	2.29	2.79
B2	2.9	3.1	C1	2.5	2.9

/ Marking Instructions



BR

A1757

D: h_{FE}

Note:

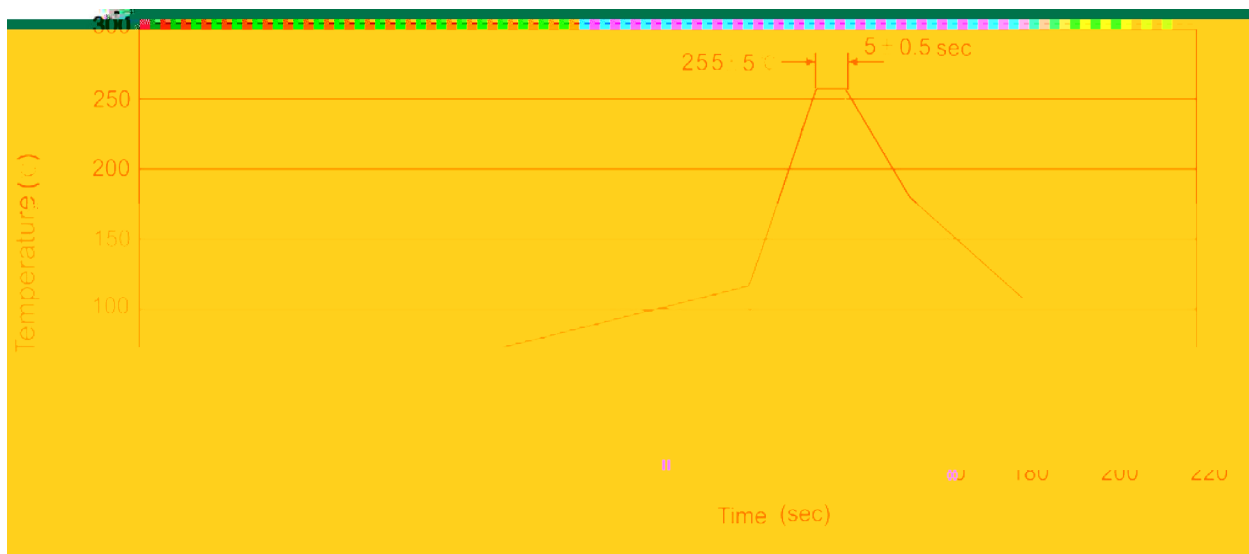
BR: Company Code.

A1757: Product Type.

D: 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: mm ³)		
	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-220/F	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: mm ³)		
	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-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices