

/ Descriptions

Silicon NPN transistor in a TO-220 Plastic Package.

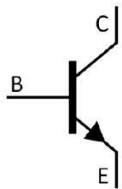
/ Features

Large Current Capability.

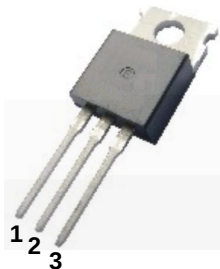
/ Applications

Versatile, can be used in the humidifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Y	GR
h_{FE} Range	100 200	160 240

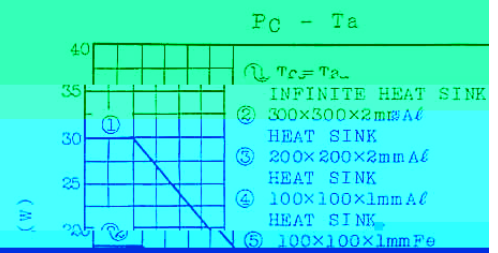
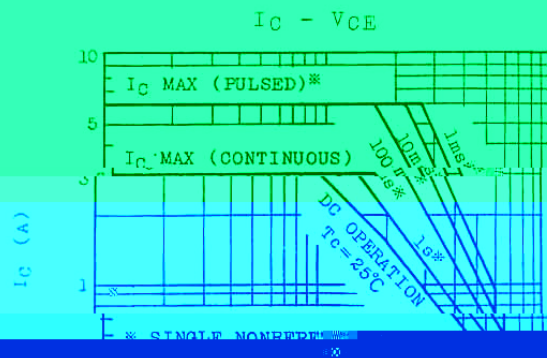
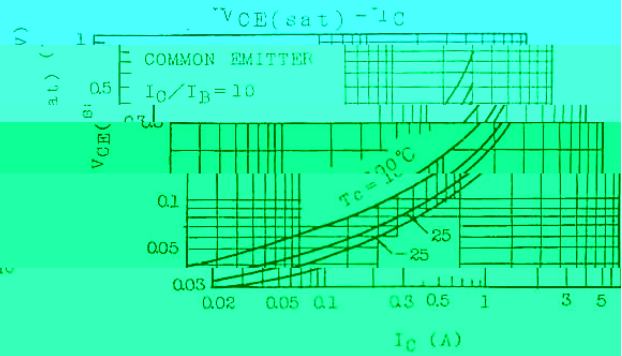
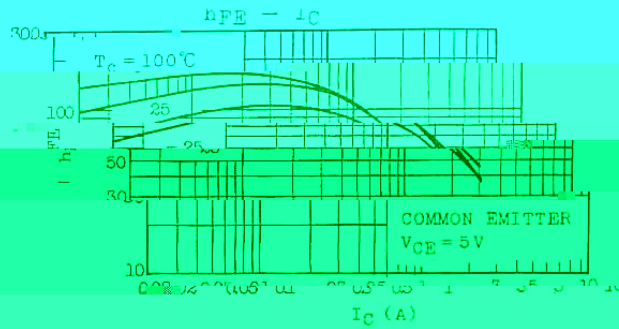
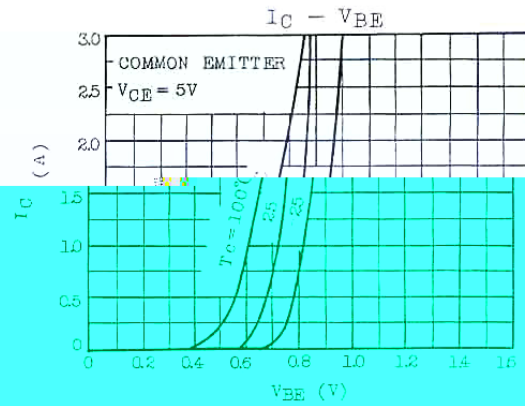
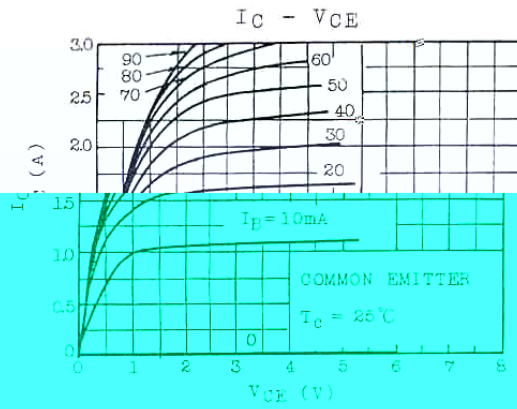
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	160	V
Collector to Emitter Voltage	V_{CEO}	80	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	4.0	A
Collector Current(Pulse)	I_{CP}	7	A
Base Current – Continuous	I_B	1	A
Collector Power Dissipation	$P_C(T_C=25)$	28	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 150	°C

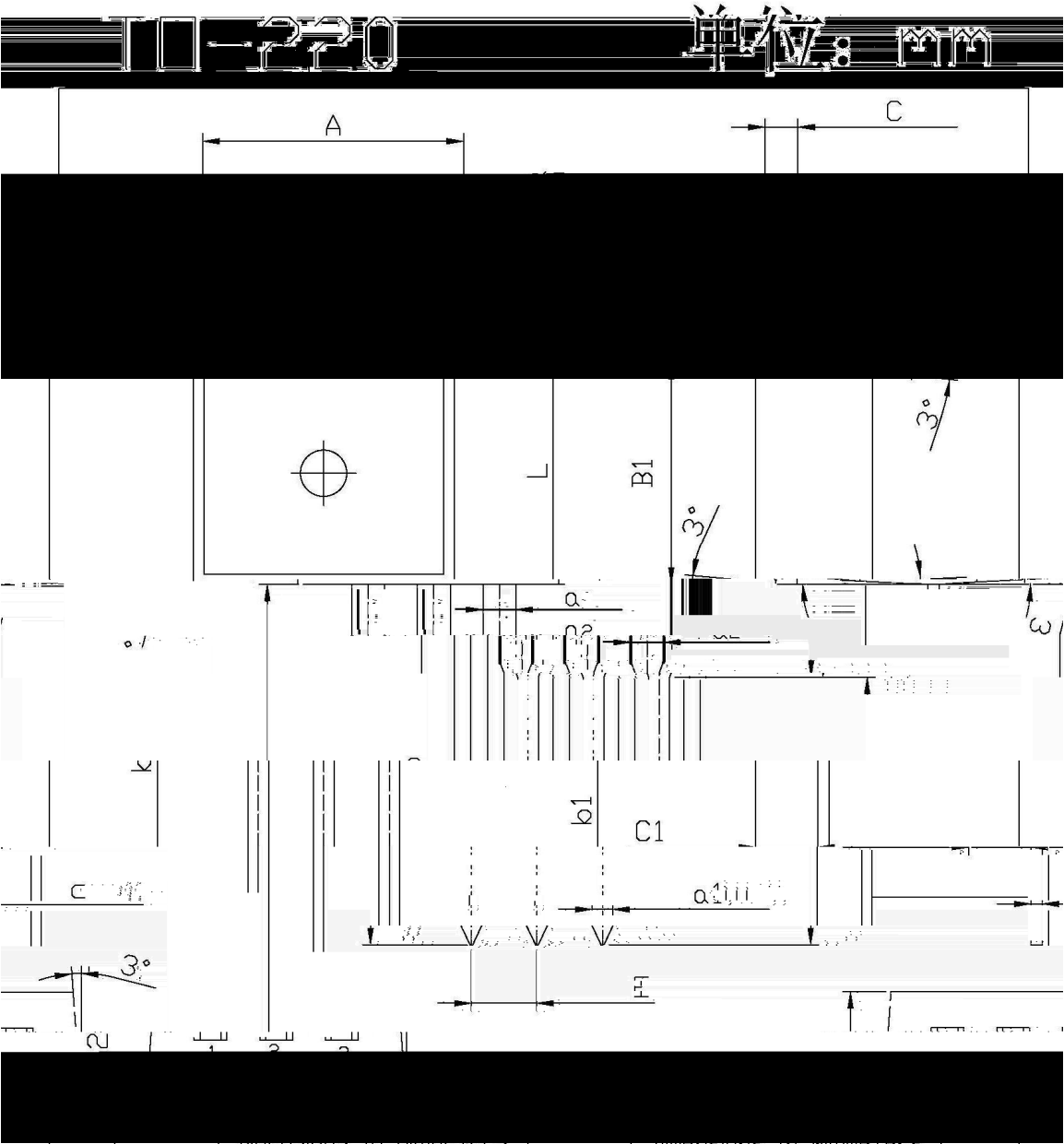
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=160V$ $I_E=0$			1	μA
Collector Cut-Off Current	I_{CEO}	$V_{CE}=80V$ $I_B=0$			10	μA
Emitter Cut-Off Current	I_{EBO}	$V_{BE}=7.0V$ $I_C=0$			1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V$ $I_C=1.0A$	100		240	
	$h_{FE(2)}$	$V_{CE}=5.0V$ $I_C=10mA$	80			
Collector to Emitter Saturation Voltage	$V_{CE(sat) (1)}$	$I_C=4.0A$ $I_B=0.4A$		0.35	0.55	V
	$V_{CE(sat) (2)}$	$I_C=1.0A$ $I_B=0.1A$		0.10	0.20	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.0A$ $I_B=0.1A$		0.90	1.20	V
Base to Emitter Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=1.0A$		0.80	1.00	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=0.5A$	20			MHz
Turn-Off Time	t_{off}	$I_C=2.0A$ $I_B=0.25A$			0.70	S

/ Electrical Characteristic Curve

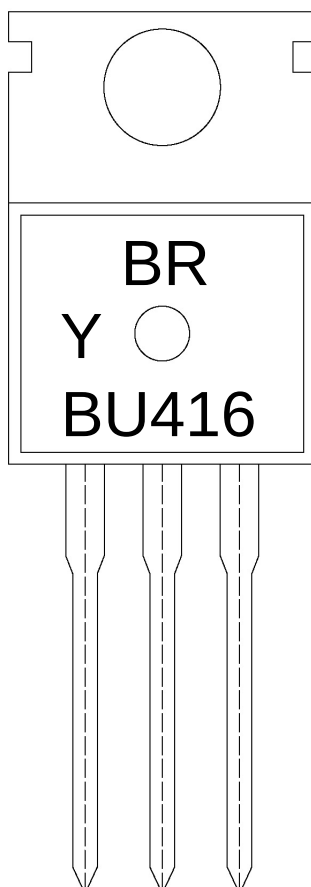


/ Package Dimensions



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	9.8	10.2	C	1.2	1.4
B	3.56	3.64	B1	6.3	6.7
B2	15.7	16.1	B3	9.4	9.8
C1	12.6	13.0	C2	10.7	11.1
a	1.22	1.32	a1	0.7	0.9
F	0.6	0.7	F1	0.4	0.5
F2	0.2	0.25	F3	0.1	0.15

/ Marking Instructions



Note:

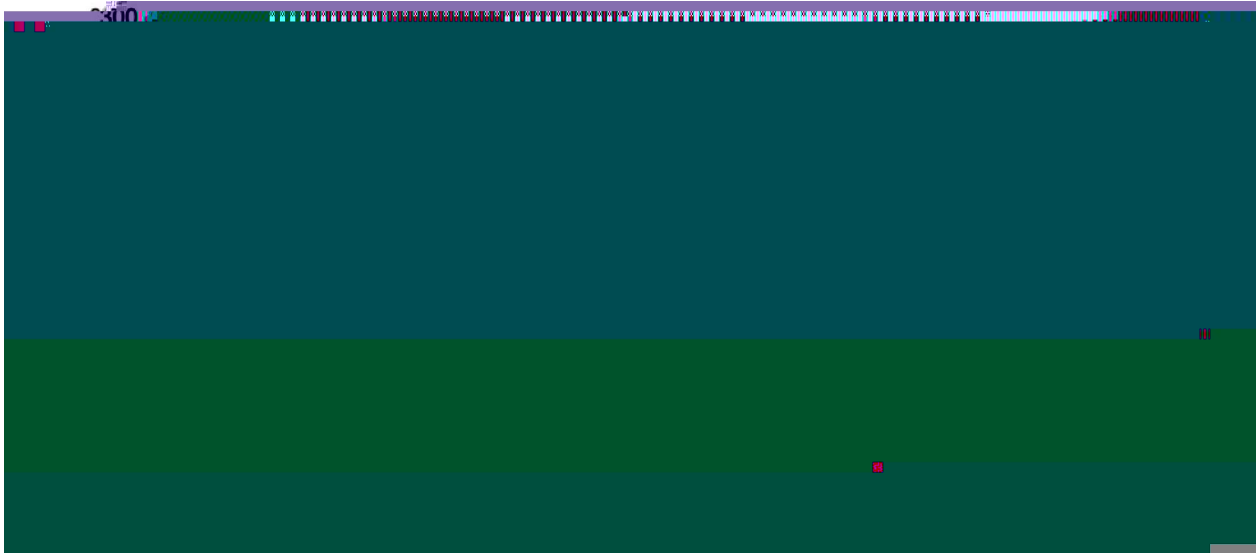
BR: Company Code

BU416: Product Type.

Y: 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	Units					Dimension (unit mm ³)		

/ TUBE

Package Type	Units					Dimension (unit mm ³)		

/ Notices