

/ Descriptions

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

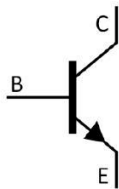
/ Features

High voltage.

/ Applications

High voltage switching and humidifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

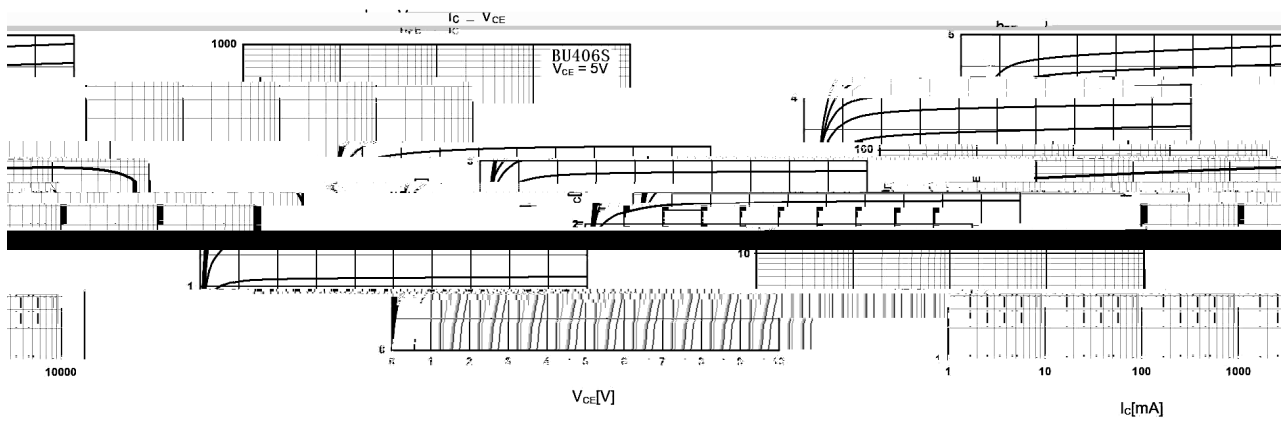
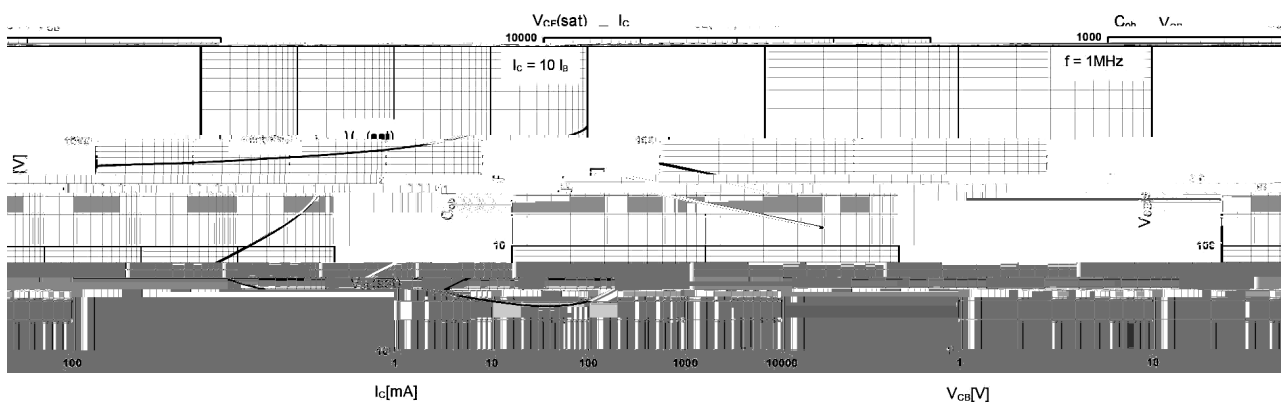
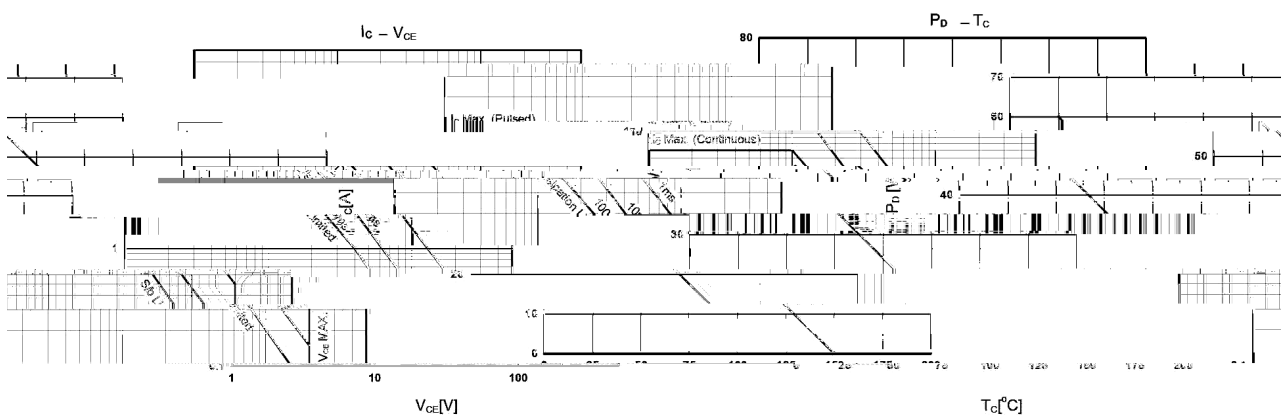
See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

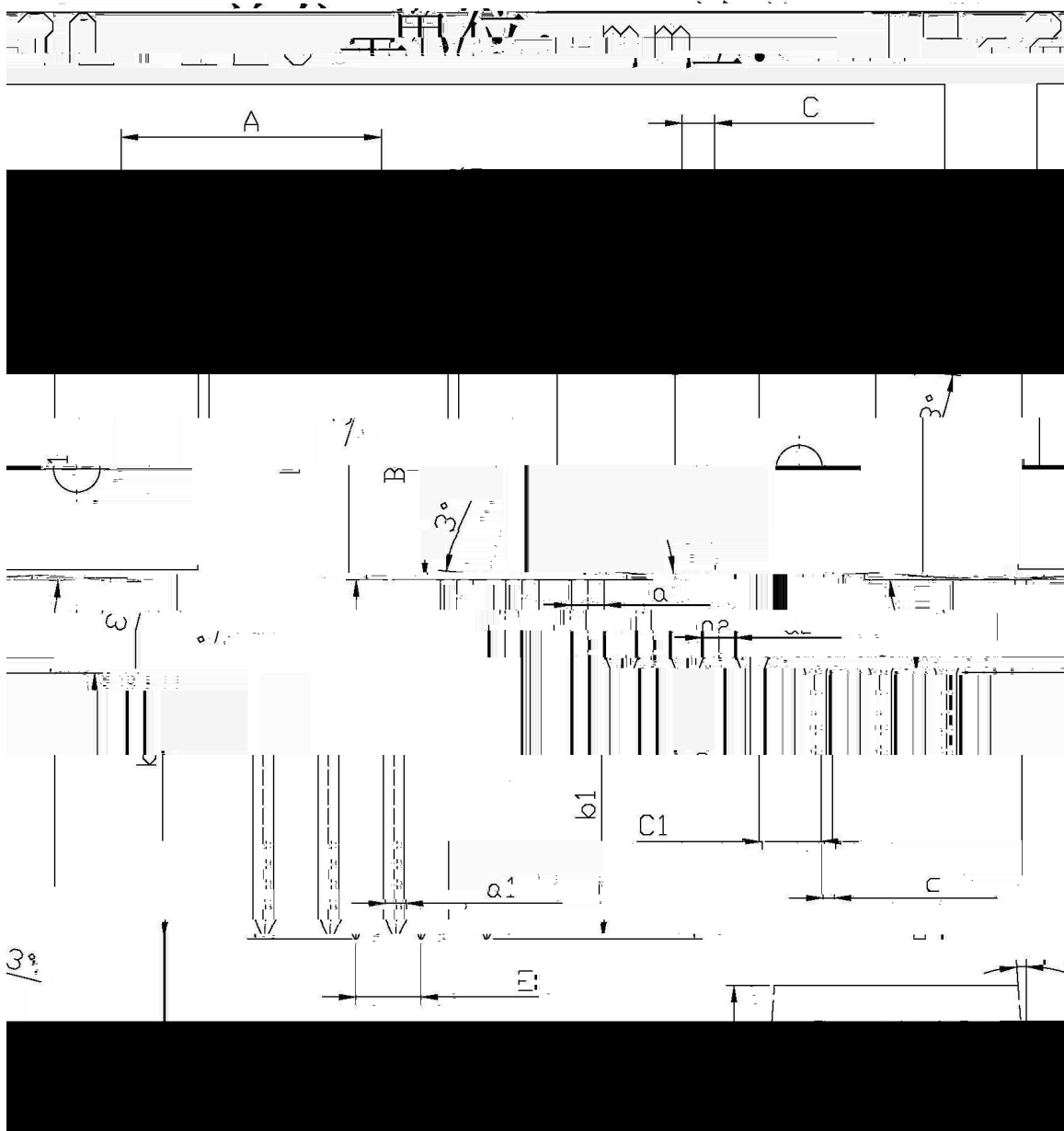
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	200	V
Collector to Emitter Voltage	V_{CEO}	120	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	7	A
Collector Current(Pulse)	I_{CP}	10	A
Base Current – Continuous	I_B	2	A
Collector Power Dissipation	P_C	60	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CES(1)}$	$V_{CE}=200V \quad V_{BE}=0$			100	μA
	$I_{CES(2)}$	$V_{CE}=150V \quad V_{BE}=0$			50	μA
	$I_{CES(3)}$	$V_{CE}=150V \quad V_{BE}=0$ $T_C=150$			500	μA
Collector Cut-Off Current	I_{CEO}	$V_{CE}=120V \quad V_{BE}=0$			100	μA
Emitter Cut-Off Current	I_{EBO}	$V_{BE}=6.0V \quad I_C=0$			1.0	mA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V \quad I_C=2.0A$	60		120	
	$h_{FE(2)}$	$V_{CE}=5.0V \quad I_C=5.0A$	40			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5.0A \quad I_B=0.5A$		0.22	0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5.0A \quad I_B=0.5A$		1.05	1.25	V
Transition Frequency	f_T	$V_{CE}=10V \quad I_C=0.5A$	10			MHz
Turn-Off Time	t_{off}	$I_C=5.0A \quad I_B=0.5A$			0.7	μS

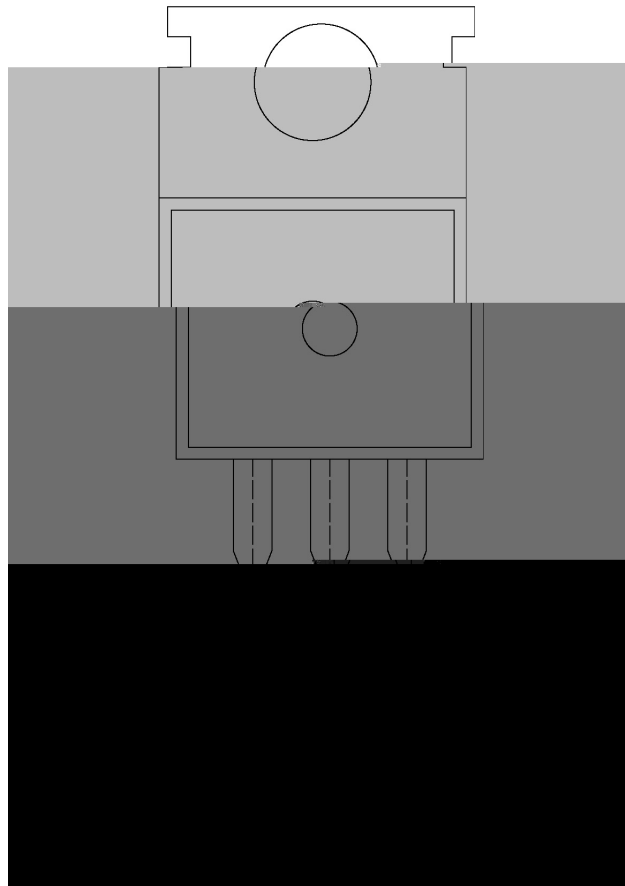
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



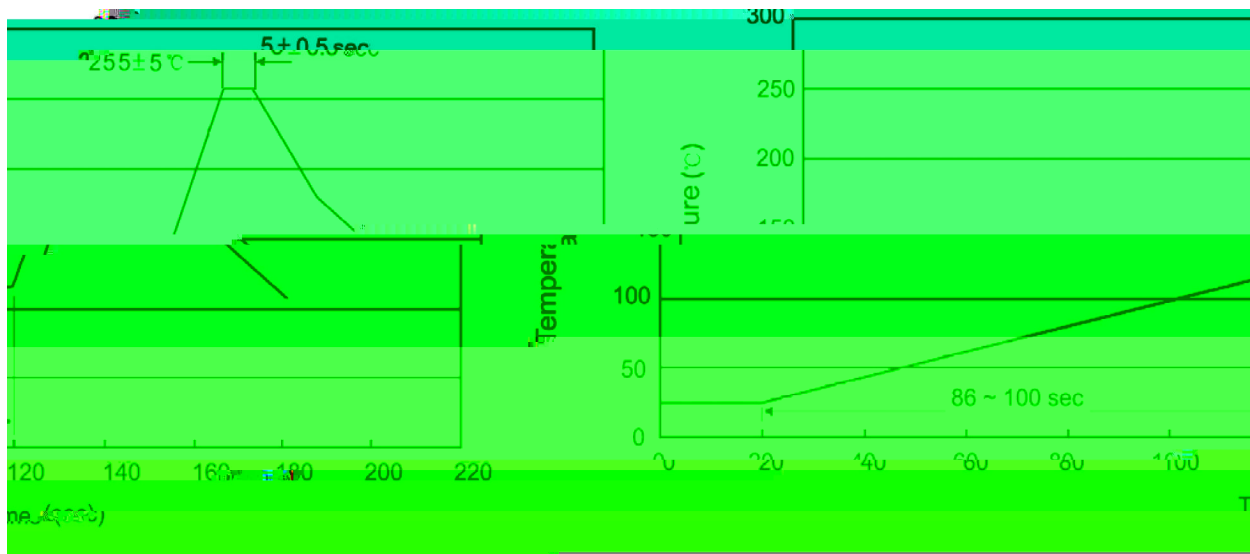
BR

BU406S

Note:

BR: Company Code

() / 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

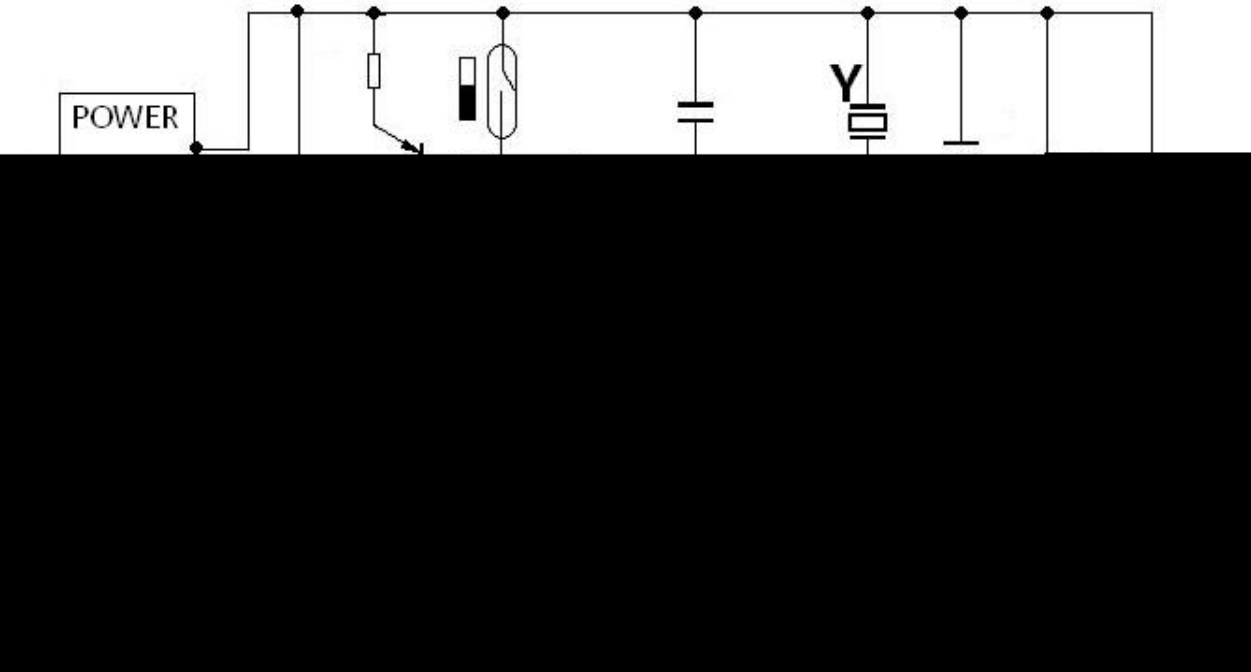
Package Type	Units					Dimension (unit mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ Notices

3MHZ



- 1 ≤3.0MHZ
- 2 ≤40V
- 3 ≤45W
- 4 HFE 60-70,70-80,80-90

- | | | | | | |
|---|-----|-----|-------|-------|-------|
| 1 | HFE | HFE | 60-70 | 70-80 | 80-90 |
| 2 | HFE | | | | |

- 1 Y
- 2

- 3
- 3.1
- 3.2 ≤5kgf.cm
- 3.3 PCB
- 3.4
- 3.5