

/ Descriptions

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

/ Features

High power gain, wide ASO.

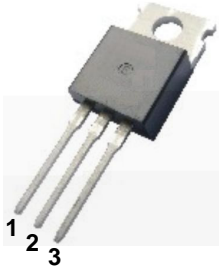
/ Applications

Transceiver final amplifier application, HF transceiver application.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

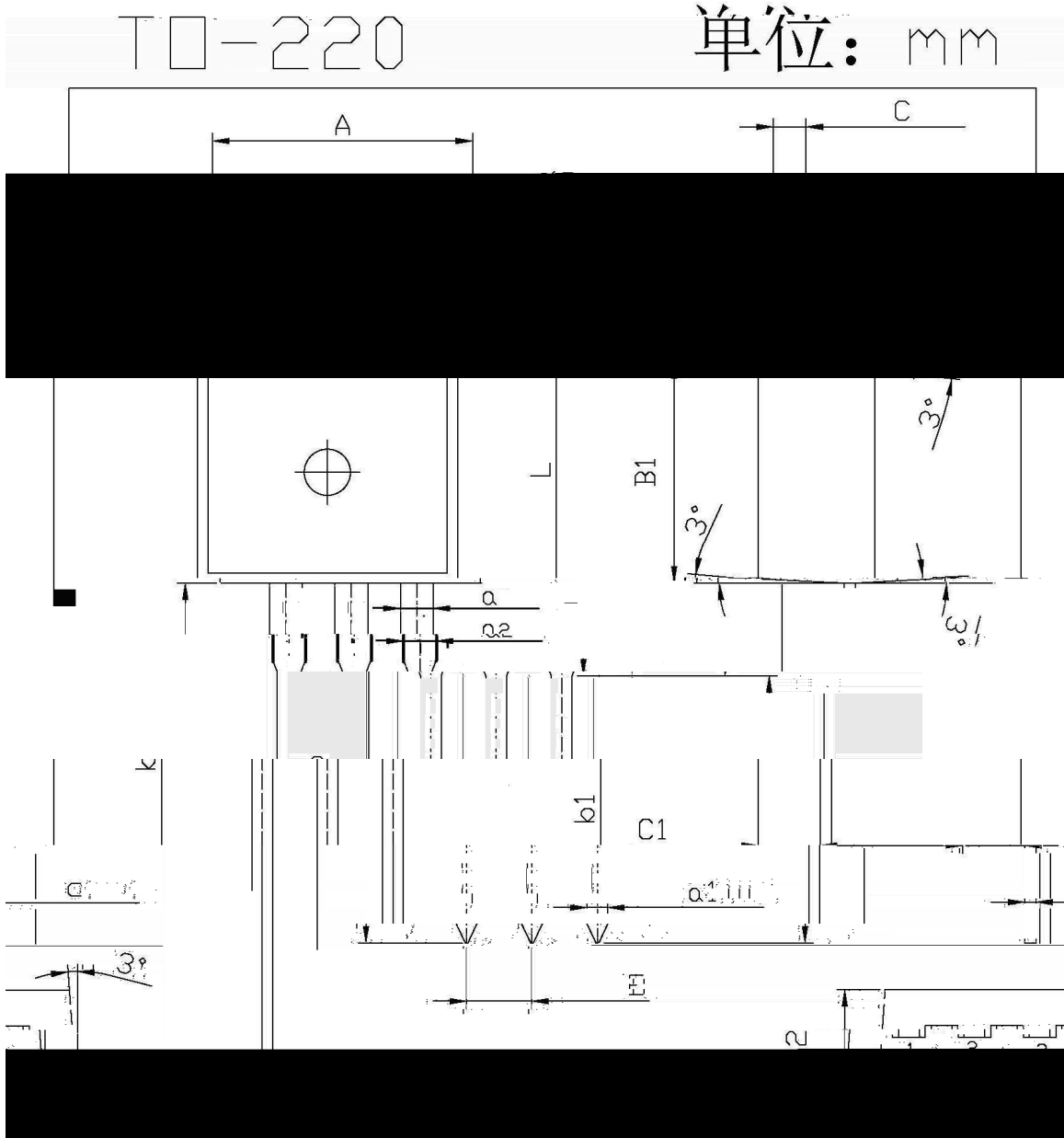
See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	80	V
Collector to Emitter Voltage	$V_{CER(RBE=50)}$	80	V
Emitter to Base Voltage	V_{EBO}	4.0	V
Collector Current - Continuous	I_C	4.0	A
Emitter Current - Continuous	I_E	-4.0	A
Collector Power Dissipation	$P_C(T_C=25^\circ C)$	10	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$

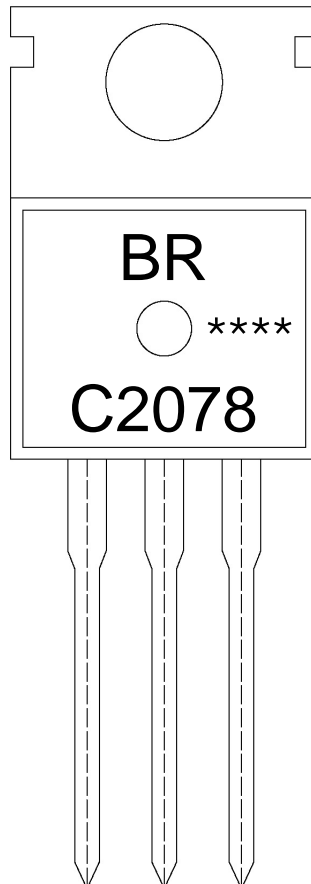
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C=10mA$ $R_{BE}=50$	80			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1.0mA$ $I_C=0$	4.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30V$ $I_E=0$			10	A
DC Current Gain	h_{FE}	$V_{CE}=5.0V$ $I_C=500mA$	100		200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3.0A$ $I_B=300mA$			1.5	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=500mA$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		40		pF
Output Power	P_O	$V_{CC}=12V$ $P_i=300mW$ $f=27MHz$	4.0			W

/ Package Dimensions



Symbol	Dimensions in Millimeters		Symbol	Dimensions in Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
B	3.56	3.64	B1	9.0	9.4
R	15.7	16.1	C1	3.6	3.8
a	1.22	1.32	b1	0.4	0.5
a1	0.2	0.25	EH	1.45	1.55

/ Marking Instructions



BR

C2078

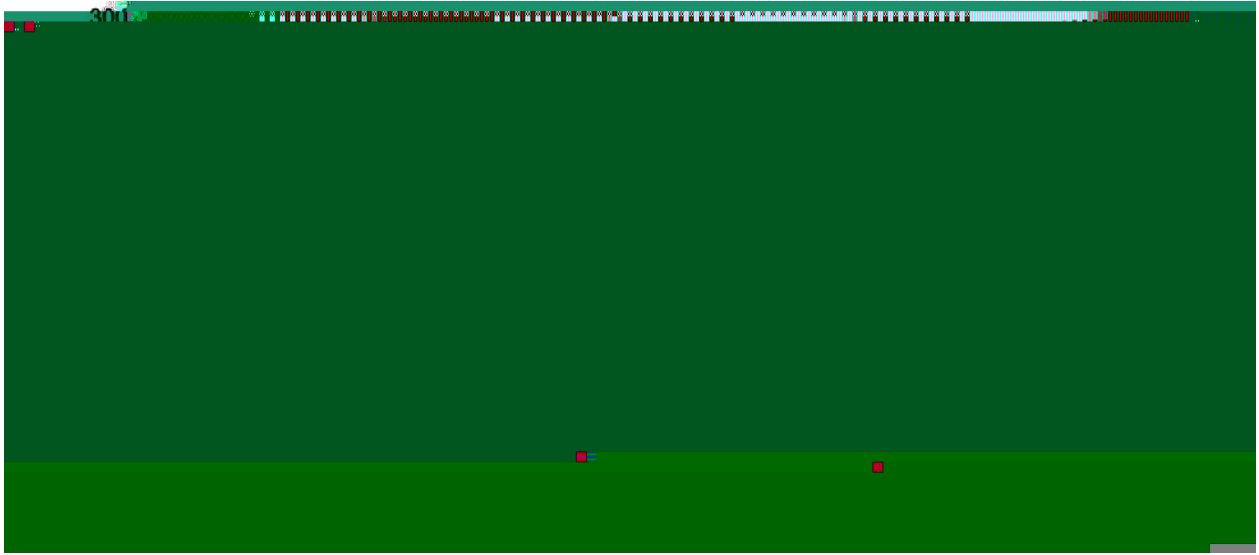
Note:

BR: Company Code

C2078: Product Type.

****: 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