

/ Descriptions

TO-220

NPN

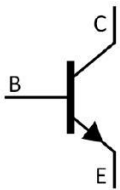
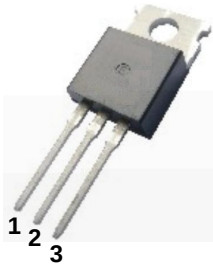
Silicon NPN transistor in a TO-220 Plastic Package.

/ Features

- MJE15031

High DC current gain, High V_{CEO} , High f_T , Complementary pair with MJE15031.**/ Applications**

Designed for us as high-frequency drivers in audio amplifiers.

/ Equivalent Circuit**/ Pinning**

PIN1 Base

PIN 2 Collector

PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

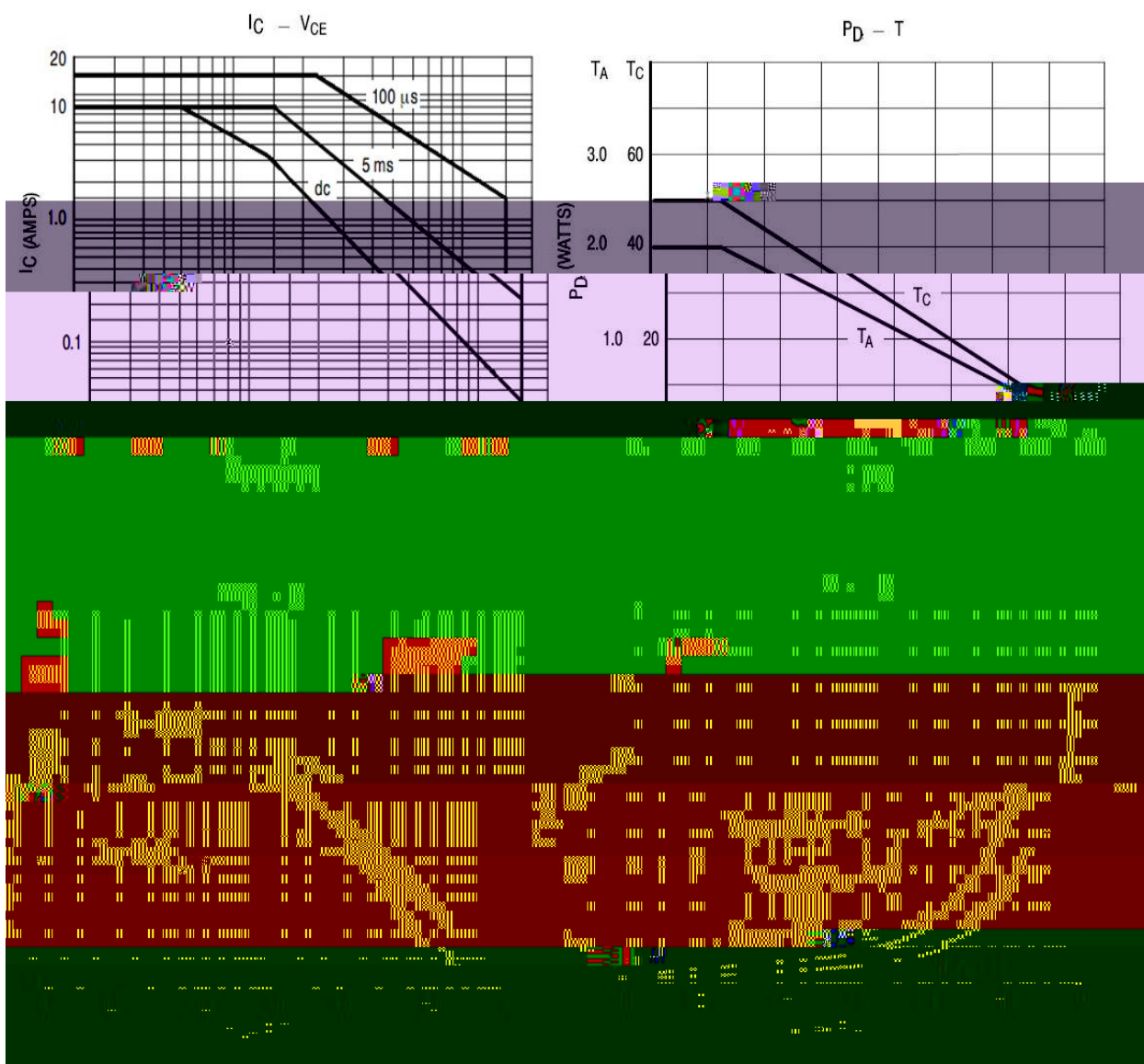
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	150	V
Collector to Emitter Voltage	V_{CEO}	150	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	8.0	A
Base Current- Continuous	I_B	2.0	A
Total Power Dissipation	P_D	2.0	W
	$P_D(T_c=25)$	50	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-65 150	
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	2.5	/W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	62.5	/W

/ Electrical Characteristics(Ta=25)

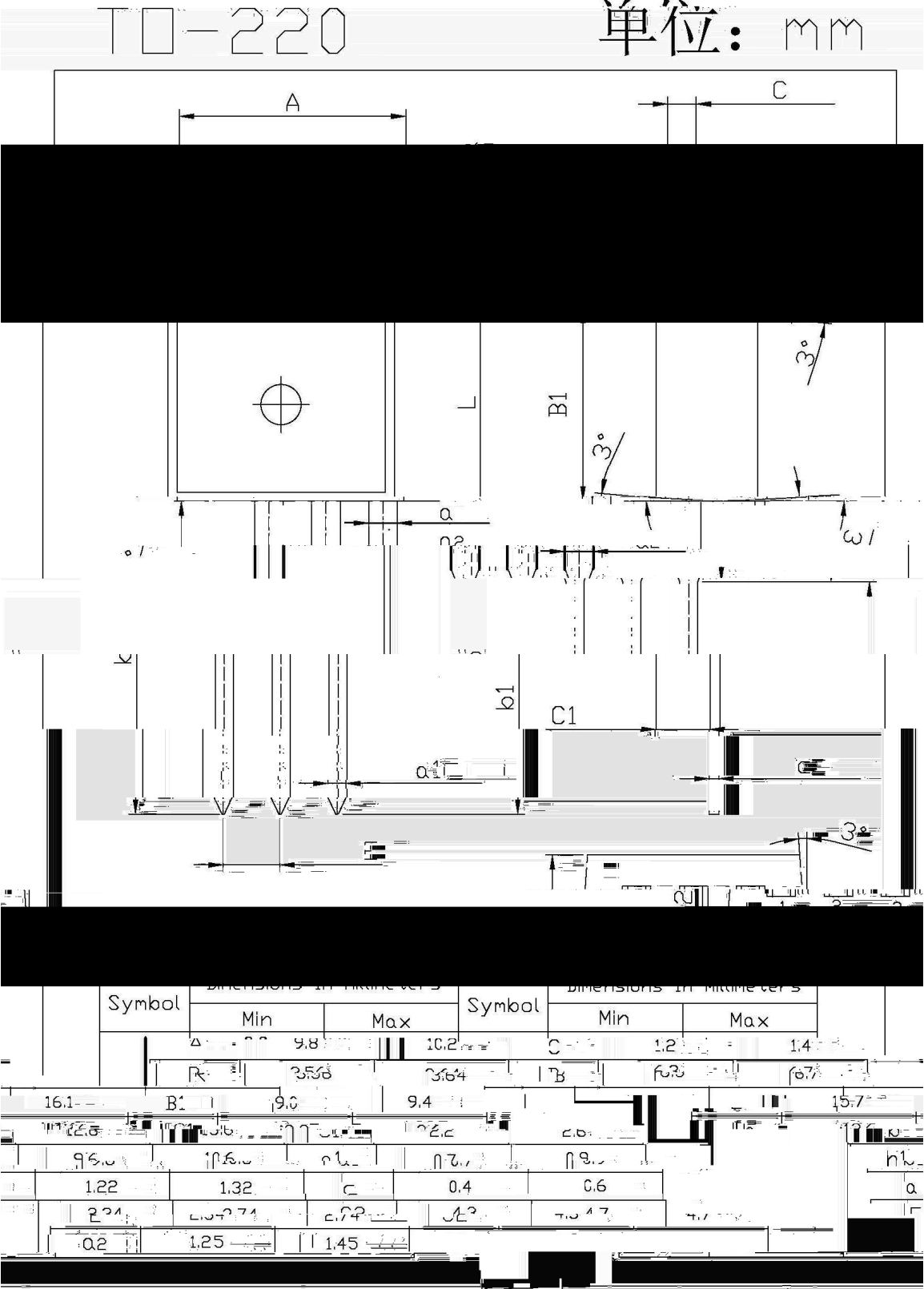
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage*	$*V_{CEO}$	$I_C=10mA$ $I_B=0$	150			V
Collector Cut-Off Current	I_{CEO}	$V_{CE}=150V$ $I_B=0$			0.1	mA
Collector Cut-Off Current	I_{CBO}	$V_{CB}=150V$ $I_E=0$			10	μA
Emitter Cut-Off Current	I_{EBO}	$V_{BE}=5V$ $I_C=0$			10	μA
DC Current Gain	$*h_{FE(1)}$	$V_{CE}=2V$ $I_C=2A$	40		160	
	$*h_{FE(2)}$	$V_{CE}=2V$ $I_C=0.1A$	40			
	$*h_{FE(3)}$	$V_{CE}=2V$ $I_C=3A$	40			
	$*h_{FE(4)}$	$V_{CE}=2V$ $I_C=4A$	20			
Collector to Emitter Saturation Voltage*	$*V_{CE(sat)}$	$I_C=1A$ $I_B=0.1A$			0.5	V
Base to Emitter On Voltage*	$*V_{BE(on)}$	$V_{CE}=2V$ $I_C=1A$			1.0	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=500mA$ $f=1MHz$	30			MHz

* $\leq 300\mu s$ $\leq 2\%$ *Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

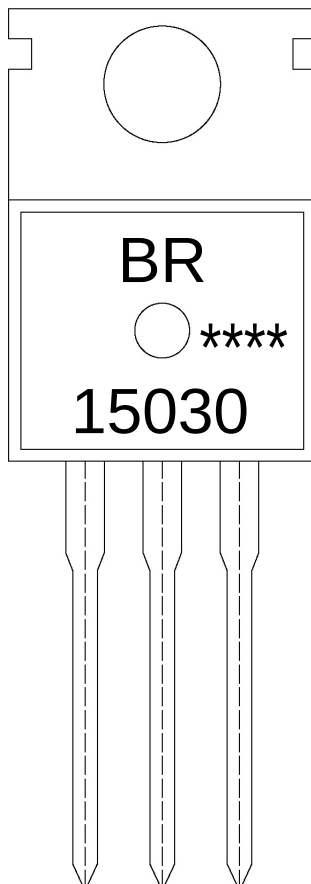
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

15030

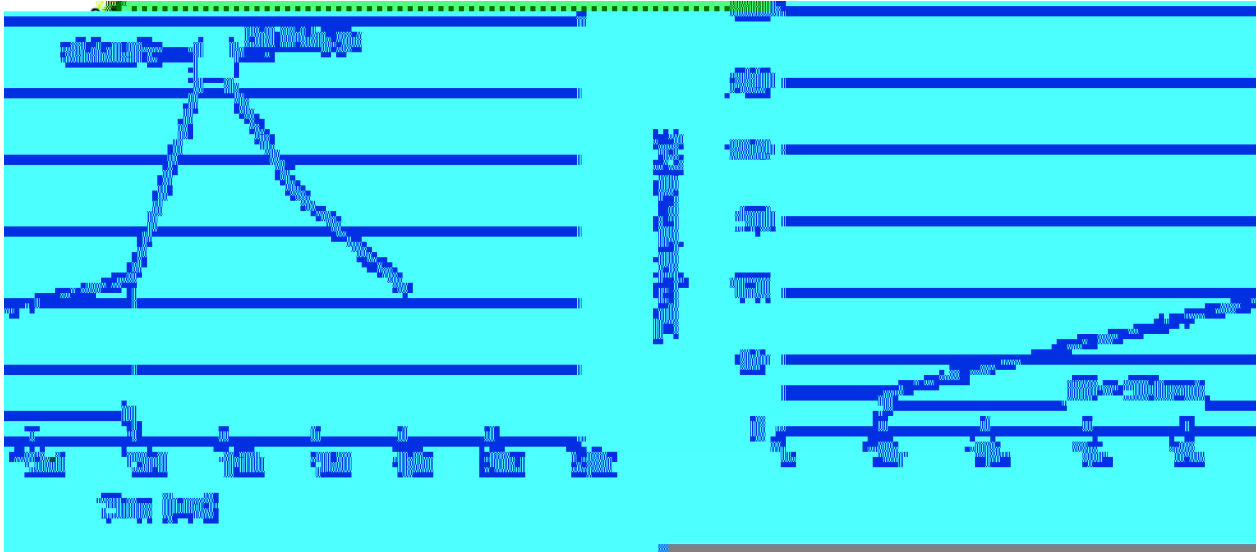
Note:

BR: Company Code

15030: 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	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	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ **Notices**