

**/ Descriptions**

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

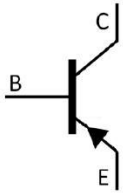
**/ Features**

-          MJE15038  
High DC current gain, High  $V_{CEO}$ , High  $f_T$ , Complementary pair with MJE15036.

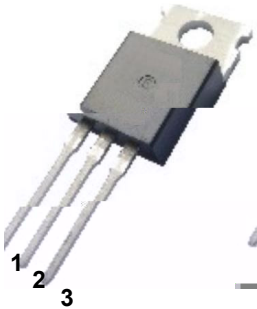
**/ Applications**

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 )

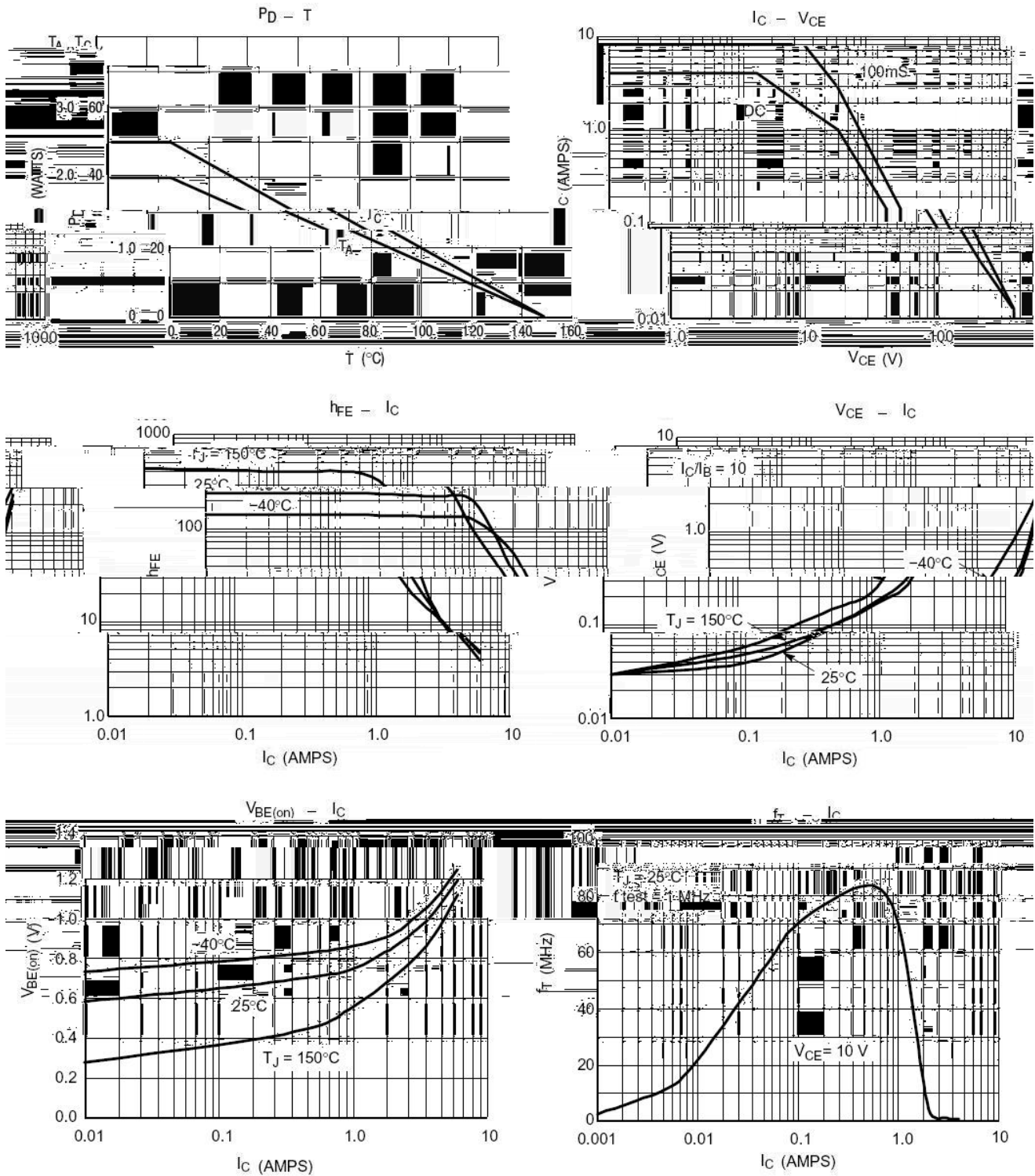
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-350	V
Collector to Emitter Voltage	$V_{CEO}$	-350	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current - Continuous	$I_C$	-8	A
Base Current - Continuous	$I_B$	-2	A
Collector Power Dissipation	$P_D$	2	W
	$P_D(T_C=25)$	80	W
Junction 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 )

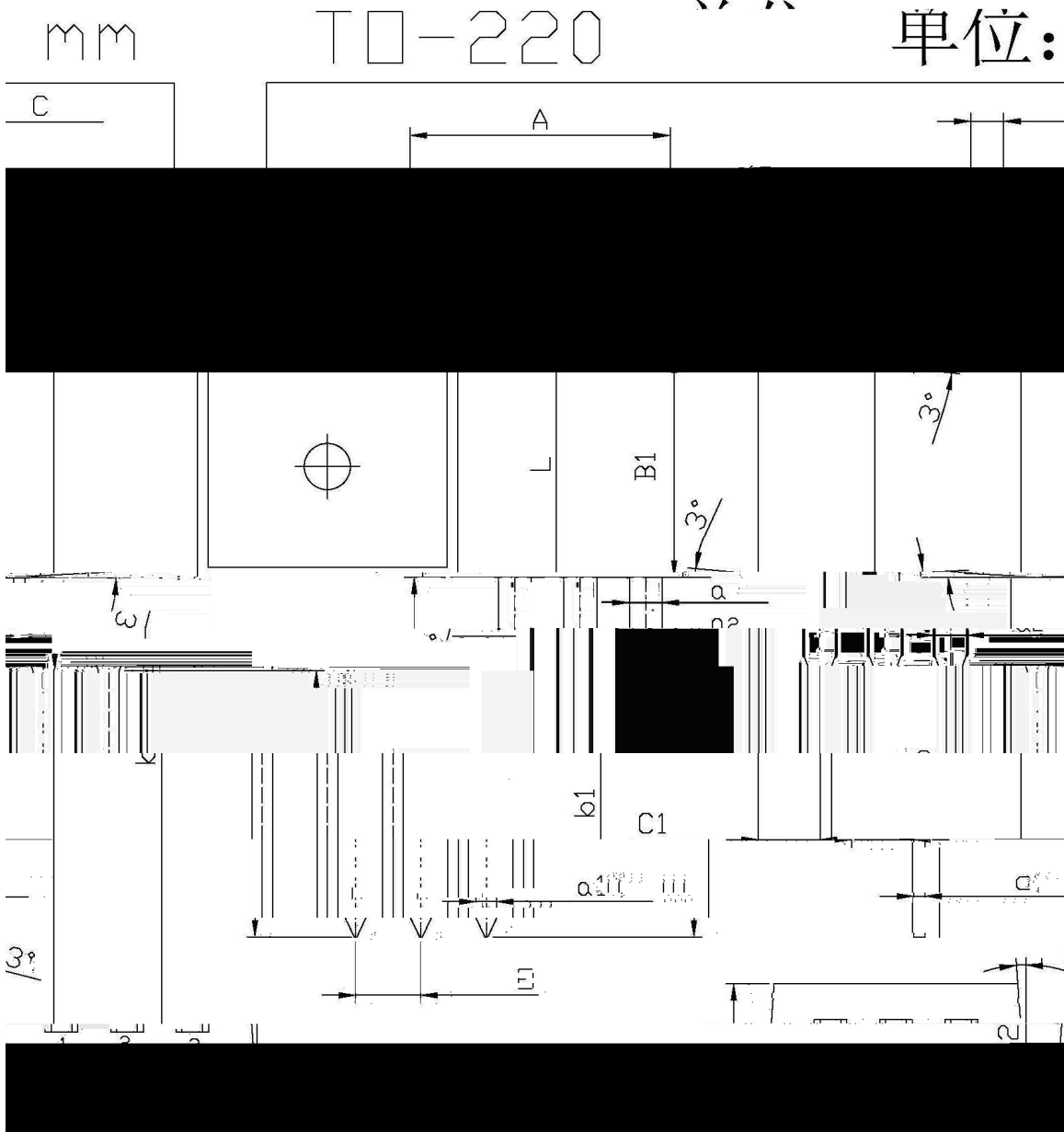
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	* $V_{CEO}$	$I_C=-10mA$ $I_B=0$	-350			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-350V$ $I_E=0$			-30	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{BE}=-5V$ $I_C=0$			-30	$\mu A$
DC Current Gain	* $h_{FE(1)}$	$V_{CE}=-5V$ $I_C=-0.5A$	100		500	
	* $h_{FE(2)}$	$V_{CE}=-5V$ $I_C=-0.1A$	100			
	* $h_{FE(3)}$	$V_{CE}=-5V$ $I_C=-1A$	5			
	$h_{FE(4)}$	$V_{CE}=-5V$ $I_C=-2A$	10			
Collector to Emitter Saturation Voltage	* $V_{CE(sat)}$	$I_C=-1A$ $I_B=0.1A$			-0.5	V
Base to Emitter On Voltage	* $V_{BE(on)}$	$V_{CE}=5V$ $I_C=-1A$			-1	V
Transition Frequency	$f_T$	$V_{CE}=-10V$ $I_C=-500mA$ $f=1MHz$	30			MHz

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

/ Electrical Characteristic Curve

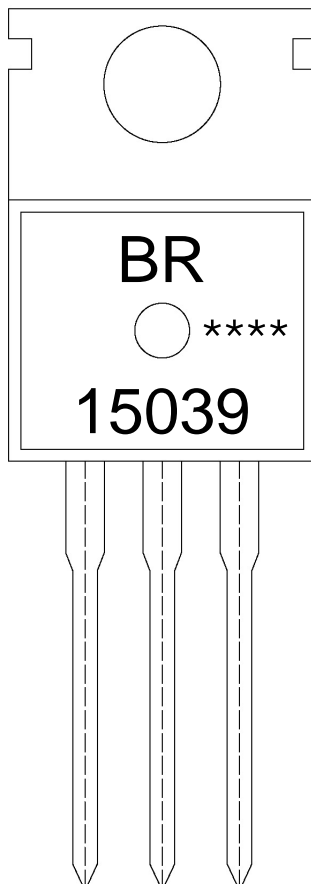


/ Package Dimensions



Symbol	Dimensions in Millimeters		Symbol	Dimensions in Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
B1	9.0	9.4			
	16.1	15.7			
	1.32	1.22			
	1.25	1.45			0.2

/ Marking Instructions



BR

15039

\*\*\*\*

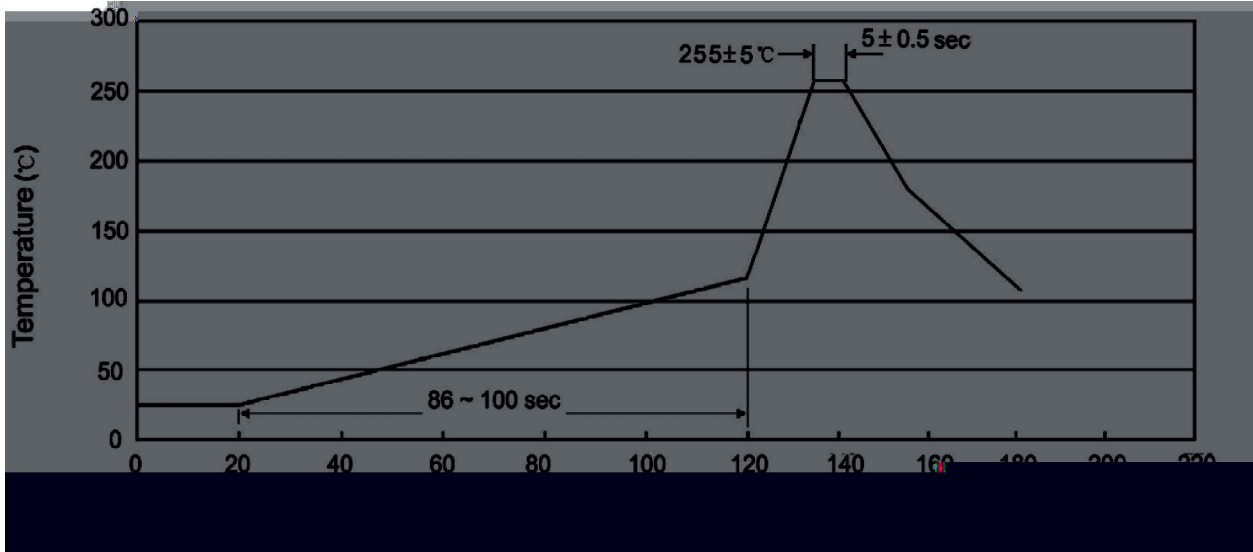
Note:

BR: Company Code

15039: 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 <sup>3</sup> )		
	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 <sup>3</sup> )		
	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