

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

-          MJE15031  
High DC current gain, High  $V_{CE0}$ , High  $f_T$ , Complementary pair with MJE15031.

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



PIN1   Base          PIN 2   Collector          PIN 3   Emitter

**/ Absolute Maximum Ratings(Ta=25 )**

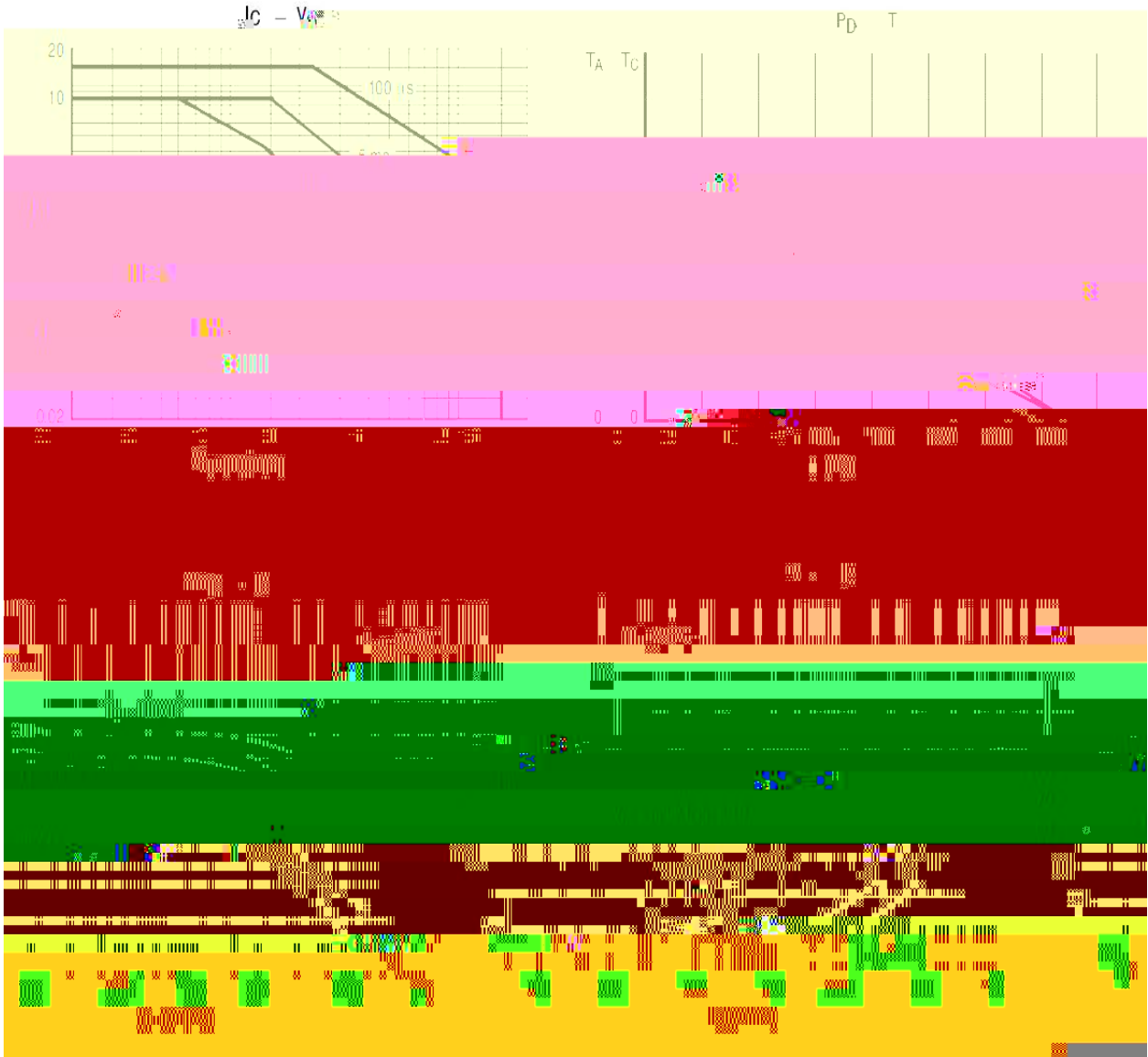
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	150	V
Collector to Emitter Voltage	$V_{CEO}$	150	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current - Continuous	$I_C$	8.0	A
Base Current- Continuous	$I_B$	2.0	A
Total Power Dissipation	$P_D$	2.0	W
	$P_D(T_c=25 )$	50	W
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-65 150	
Thermal Resistance Junction-to-Case	$R_{JC}$	2.5	/W
Thermal Resistance Junction-to-Ambient	$R_{JA}$	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	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{BE}=5V$ $I_C=0$			10	$\mu A$
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

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

/ Electrical Characteristic Curve

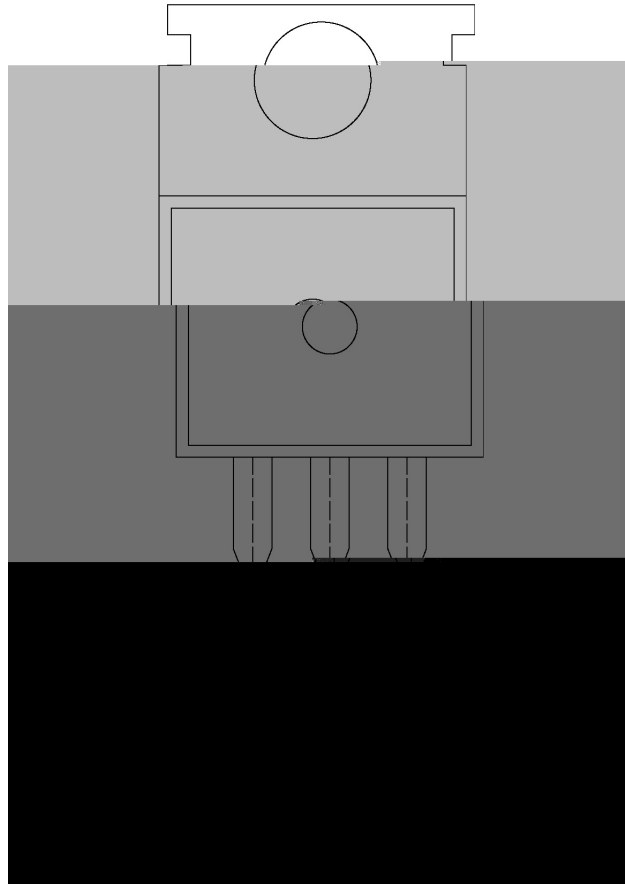


/ Package Dimensions



Symbol	Dimensions in Millimeter (mm)	Dimensions in Millimeter (mm)
A	10.0	10.0
B	10.0	10.0
C	10.0	10.0
a	10.0	10.0
b1	10.0	10.0
C1	10.0	10.0
k	10.0	10.0

**/ Marking Instructions**

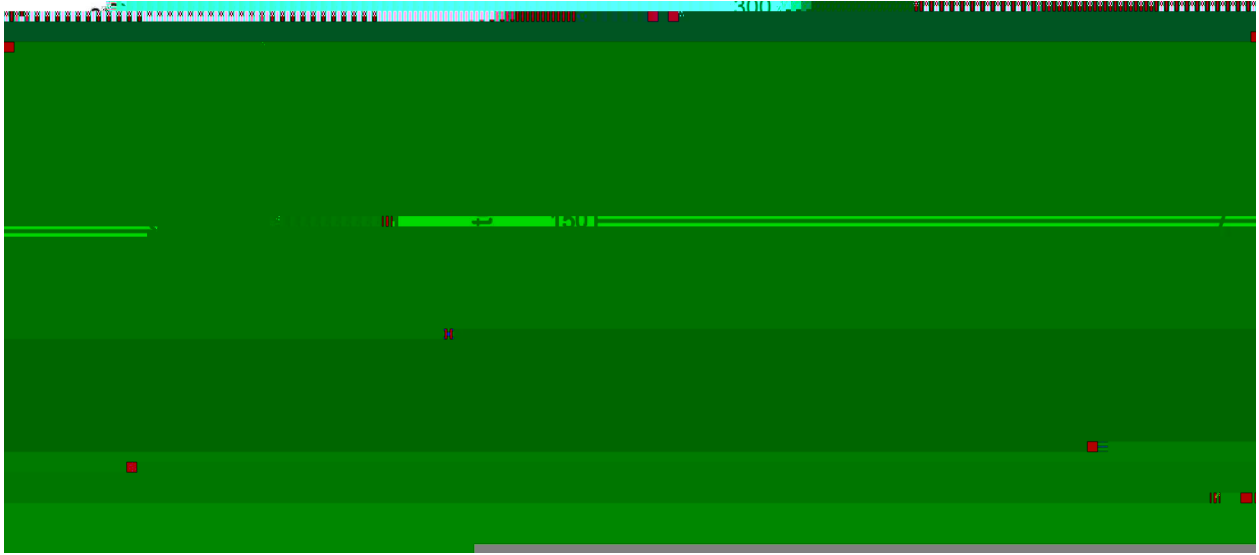


BR  
15030  
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Note:

BR:

( ) / 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