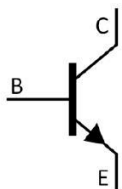


TO-220 NPN Silicon NPN transistor in a TO-220 Plastic Package.

- MJE15031
High DC current gain, High V_{CEO} , 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($T_a=25^\circ\text{C}$)

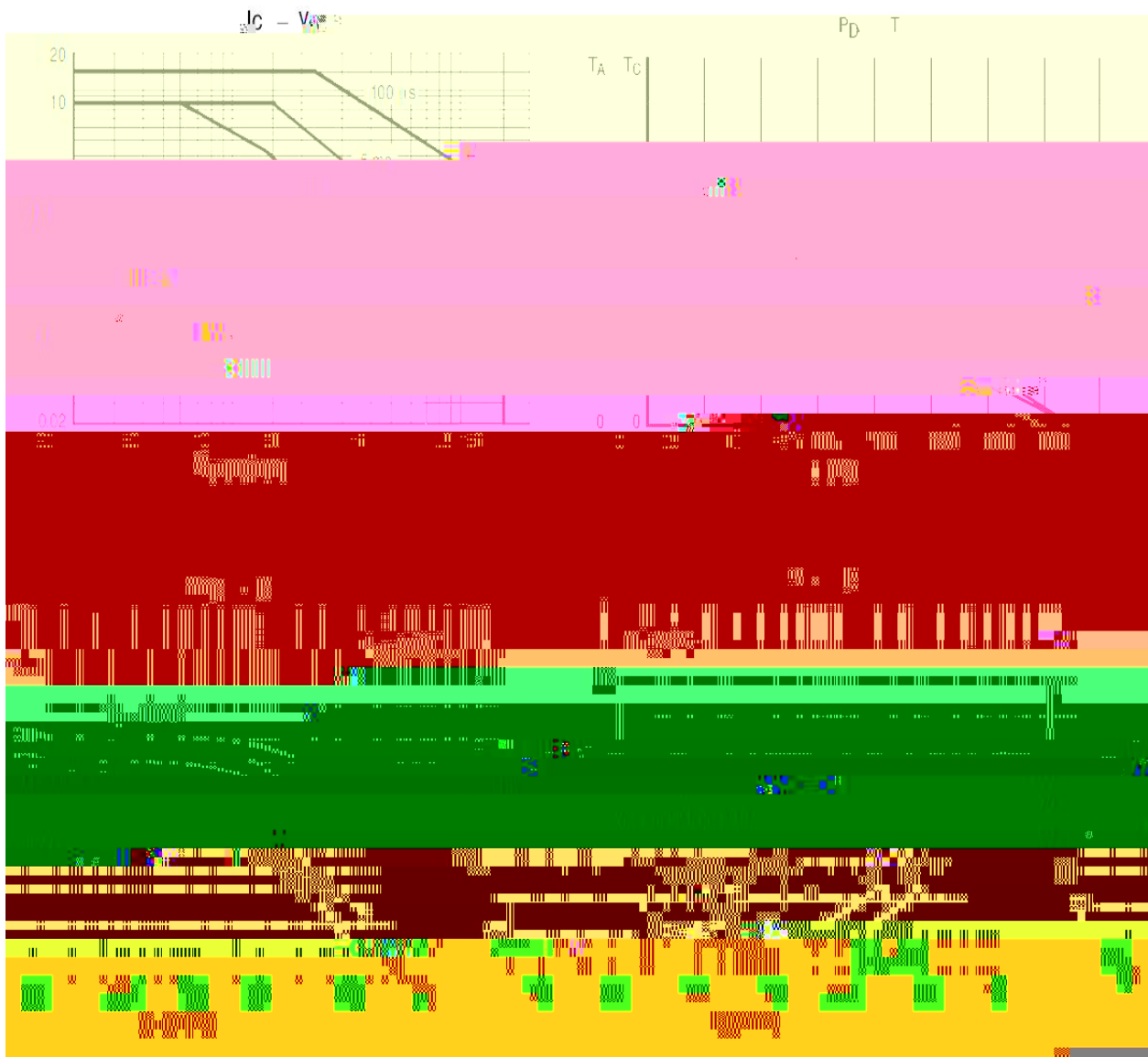
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	150	V
Collector to Emitter Voltage	V_{CEO}	150	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	8.0	A
Base Current- Continuous	I_B	2.0	A
Total Power Dissipation	P_D	2.0	W
	$P_D(T_c=25^\circ\text{C})$	50	W
Junction 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($T_a=25^\circ\text{C}$)

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

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

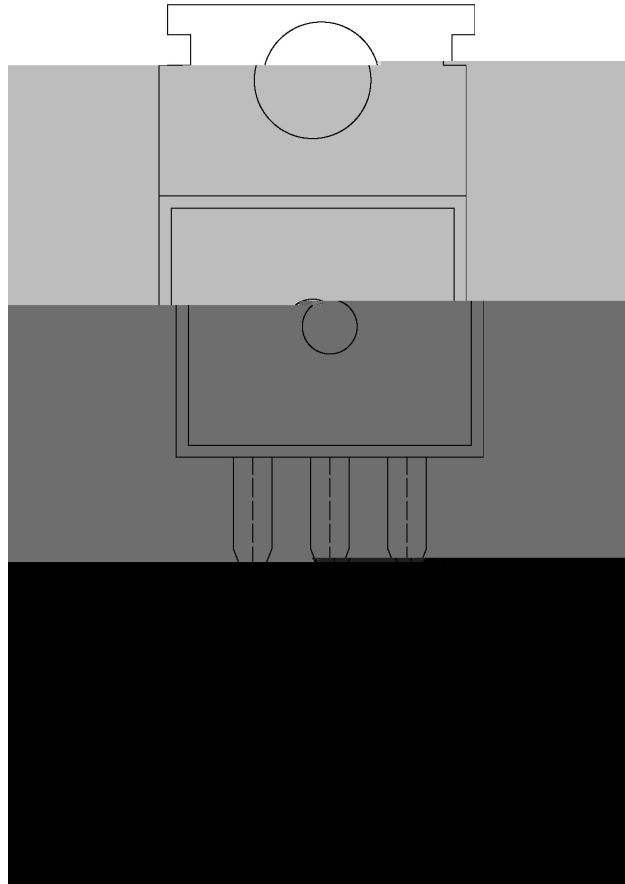
/ Electrical Characteristic Curve



Technical drawing of a mechanical assembly, likely a shaft-hub connection. The drawing shows a cross-section of a shaft with a gear and a pulley. Key dimensions and features include:

- Dimensions:** A, B, C, a, b1, and C1 are labeled with arrows indicating their respective measurements.
- Angles:** A 3° angle is indicated near the gear, and a 30° angle is indicated near the pulley.
- Labels:** The drawing is labeled "图 1" (Figure 1) and "图 2" (Figure 2).
- Geometric Features:** The drawing shows a shaft with a gear and a pulley, with various lines indicating the geometry and assembly details.

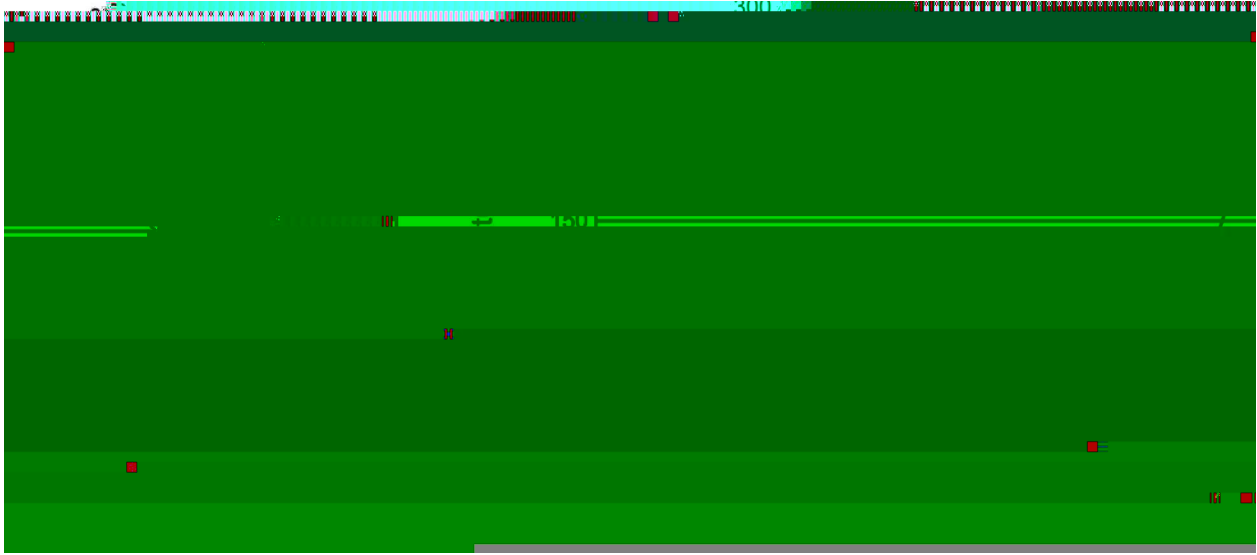
/ Marking Instructions



BR
15030

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 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