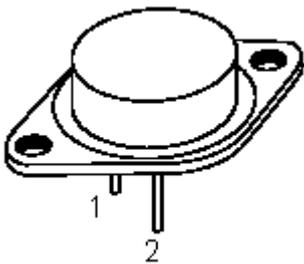




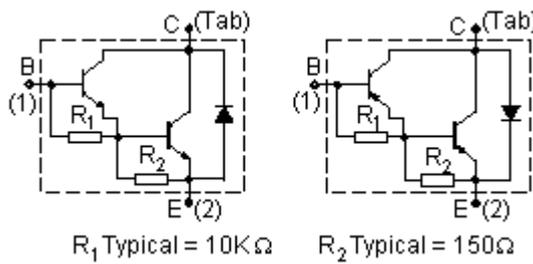
### Description:

The MJ3001 is a silicon epitaxial-base NPN power transistors in monolithic darlington configuration and are mounted in JEDEC TO-3 metal case. They are intended for use in power linear and switching applications.

TO-3



Internal Schematic Diagram



### Absolute Maximum Ratings

Parameter	Symbol	Value		Unit
		NPN	MJ3001	
Collector-Base Voltage ( $I_E = 0$ )	$V_{CBO}$	80		V
Collector-Emitter Voltage ( $I_B = 0$ )	$V_{CEO}$			
Emitter-Base Voltage ( $I_C = 0$ )	$V_{EBO}$	5		
Collector Current	$I_C$	10		A
Base Current	$I_B$	0.2		
Total Dissipation at $T_c \leq 25^\circ\text{C}$	$P_{tot}$	150		W
Storage Temperature	$T_{stg}$	-65 to 200		
Maximum Operating Junction Temperature	$T_j$	200		$^\circ\text{C}$

### Thermal Characteristics

Maximum Thermal Resistance Junction-case	$R_{thj-case}$	1.17	$^\circ\text{C}/\text{W}$
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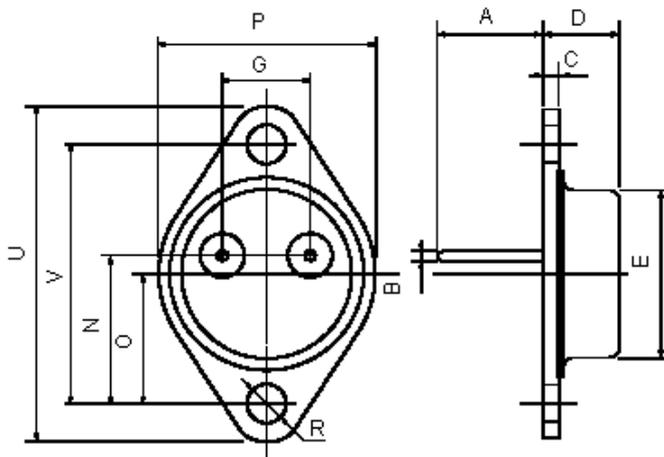
### Electrical Characteristics ( $T_{case} = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Test Conditions	Symbol	Minimum	Maximum	Unit
Collector Cut-off Current ( $R_{BE} = 1\text{K}\Omega$ )	$V_{CE} = 80\text{V}$ $T_{case} = 150^\circ\text{C}$ $V_{CE} = 80\text{V}$	$I_{CER}$	-	1 5	$\mu\text{A}$
Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 30\text{V}$ $V_{CE} = 40\text{V}$	$I_{CEO}$	-	1 1	

## Electrical Characteristics ( $T_{case} = 25^{\circ}C$ unless otherwise specified)

Parameter	Test Conditions	Symbol	Minimum	Maximum	Unit
Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5V$	$I_{EBO}$	-	2	
Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 100mA$	$V_{CEO(sus)^*}$	80	-	V
Collector-Emitter Saturation Voltage	$I_C = 5A$ $I_B = 20mA$	$V_{CE(sat)^*}$	-	2	
	$I_C = 10A$ $I_B = 50mA$		-	4	
Base-Emitter Voltage	$I_C = 5A$ $V_{CE} = 3V$	$V_{BE}^*$	-	3	
DC Current Gain	$I_C = 5A$ $V_{CE} = 3V$	$h_{FE}^*$	1000	-	-

\*Pulsed: Pulse Duration = 300 $\mu$ s, Duty Cycle 1.5%.



## TO-3 Mechanical Data

Dimensions	Minimum	Maximum
A	11.00 (0.433)	13.10 (0.516)
B	0.97 (0.038)	1.15 (0.045)
C	1.50 (0.59)	1.65 (0.065)
D	8.32 (0.327)	8.92 (0.351)
E	19.00 (0.748)	20.00 (0.787)
G	10.70 (0.421)	11.10 (0.437)
N	16.50 (0.649)	17.20 (0.677)
P	25.00 (0.984)	26.00 (1.023)
R	4.00 (0.157)	4.09 (0.161)
U	38.50 (1.515)	39.30 (1.547)
V	30.00 (1.187)	30.30 (1.193)

Dimensions : Inches (Millimetres)

## Part Number Table

Description	Part Number
Darlington Transistor, TO-3	MJ3001

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