

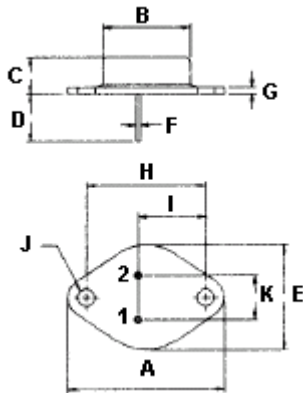
# MJ2501 & MJ3001

10A, 150W, 80V



## Features:

- Medium-power complementary Silicon Transistors for use as output devices in complementary general purpose amplifier applications.
- High DC Current Gain  
 $h_{FE} = 1000$  (Typical) at  $I_C = 5.0A$ .
- Monolithic construction with built Base-Emitter Shunt Resistors.



Pin 1. Base  
2. Emitter  
Collector(Case)

Dimensions	Minimum	Maximum
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.57	11.16

Dimensions : Millimetres

PNP	NPN
MJ2501	MJ3001
10 Ampere Darlington Power Transistors Complementary Silicon 80 Volts 150 Watts	



TO-3

## Maximum Ratings

Characteristic	Symbol	MJ2501/MJ3001	Unit
Collector-Emitter Voltage	$V_{CEO}$	80	V
Collector-Emitter Voltage	$V_{CEX}$		
Emitter-Base Voltage	$V_{EBO}$		
Collector Current-Continuous -Peak	$I_C$	10 12	A
Base Current	$I_B$	0.2	
Total Power Dissipation at $T_C = 25^\circ C$ Derate above $25^\circ C$	$P_D$	150 0.857	W W/ $^\circ C$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	-55 to +200	$^\circ C$



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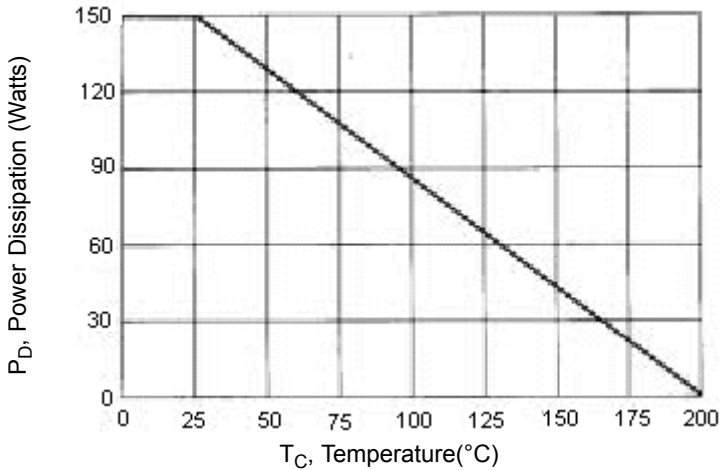
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## Thermal Characteristics

Characteristic	Symbol	Maximum	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	1.17	$^{\circ}\text{C}/\text{W}$

Figure - 1 Power Derating



## Electrical Characteristics ( $T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Minimum	Maximum	Unit
<b>OFF Characteristics</b>				
Collector-Emitter Sustaining Voltage (1) ( $I_C = 200\text{mA}$ , $I_B = 0$ ) MJ2501, MJ3001	$V_{CE(sus)}$	80	-	V
Collector Cut off Current ( $V_{CE} = 80\text{V}$ , $R_{BE} = 1.0\text{k}\Omega$ ) ( $V_{CE} = 80\text{V}$ , $R_{BE} = 1.0\text{k}\Omega$ , $T_C = 150^{\circ}\text{C}$ ) MJ2501, MJ3001	$I_{CER}$	-	1.0 5.0	mA
Emitter Cut off Current ( $V_{EB} = 5.0\text{V}$ , $I_C = 0$ )	$I_{EBO}$	-	2.0	
Collector Cut off Current ( $V_{CE} = 40\text{V}$ , $I_B = 0$ ) MJ2501, MJ3001	$I_{CER}$	-	1.0	
<b>ON Characteristics</b>				
DC Current Gain ( $I_C = 5.0\text{A}$ , $V_{CE} = 3.0\text{V}$ )	$h_{FE}$	1000	-	-
Collector-Emitter Saturation Voltage ( $I_C = 5.0\text{A}$ , $I_B = 20\text{mA}$ ) ( $I_C = 10\text{A}$ , $I_B = 50\text{mA}$ )	$V_{CE(sat)}$	-	2.0 4.0	V
Base - Emitter On Voltage ( $I_C = 5.0\text{A}$ , $V_{CE} = 3.0\text{V}$ )	$V_{BE(sat)}$	-	3.0	

(1) Pulse Test: Pulse Width =  $300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$



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## Specifications

$I_{C(av)}$ maximum (A)	$V_{CEO}$ maximum (V)	$h_{FE}$ minimum	$I_C$ (A)	$P_{tot}$ at 25°C (W)	Package	Type	Part Number
10	80	1000	5	150	TO-3	PNP	MJ2501
						NPN	MJ3001

Order Multiple = 1