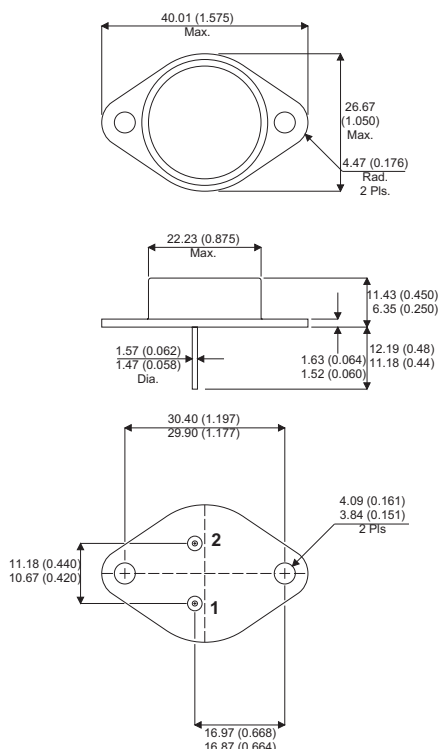


## MECHANICAL DATA

Dimensions in mm (inches)



### TO-3 (TO-204AA)

Pin 1 – Base

Pin 2 – Emitter

Case – Collector

## COMPLEMENTARY DARLINGTON POWER TRANSISTOR

### APPLICATIONS

The MJ2501 is a silicon power transistor in a monolithic Darlington configuration mounted in a traditional TO-3 metal case.

The complementary NPN type is the MJ3001

They are intended for use in power linear and switching applications.

## ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

$V_{CEO}$	Collector – Emitter Voltage	80V
$V_{CBO}$	Collector – Base Voltage	80V
$V_{EBO}$	Emitter – Base Voltage	5V
$I_C$	Continuous Collector Current	10A
$I_B$	Base Current	0.2A
$P_{tot}$	Total Dissipation at $T_{case} = 25^{\circ}C$	150W
	Derate above $25^{\circ}C$	1.17 $^{\circ}C/W$
$T_{STG} , T_J$	Operating and Storage Junction Temperature Range	-65 to +200 $^{\circ}C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>OFF CHARACTERISTICS</b>					
$V_{CEO(sus)}^*$	Collector – Emitter Breakdown Voltage $I_C = 100mA$ $I_B = 0$	80			V
$I_{CER}$	Collector – Emitter Cut-Off Current ( $R_{BE} = 1K\Omega$ )	$V_{CE} = 80V$		1	mA
		$T_C = 150^\circ C$		5	
$I_{CEO}$	Collector – Emitter Cut-Off Current ( $I_B = 0$ )	$V_{CE} = 30V$		1	
		$V_{CE} = 40V$		1	
$I_{EBO}$	Emitter – Base Cut-Off Current	$V_{EB} = 5V$ $I_C = 0$		2	mA
$h_{FE}^*$	DC Current Gain	$V_{CE} = 3V$ $I_C = 5A$	1000		—
$V_{CE(sat)}^*$	Collector – Emitter Saturation Voltage	$I_C = 5A$ $I_B = 20mA$		2	V
		$I_C = 10A$ $I_B = 50mA$		4	
$V_{BE(on)}^*$	Base – Emitter On Voltage	$I_C = 5A$ $V_{CE} = 3V$		3	

\* Pulse Test:  $t_p \leq 300\mu s$ ,  $\delta \leq 2\%$ .