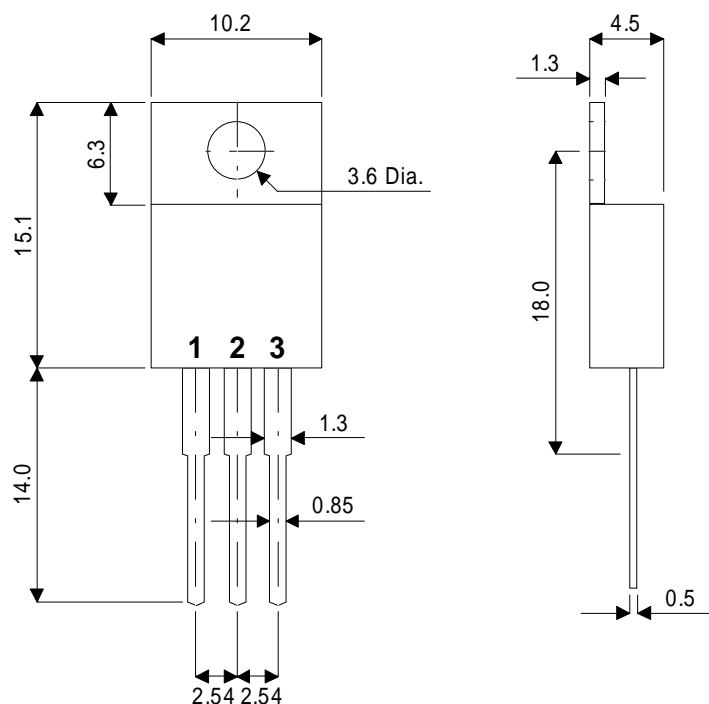


**MECHANICAL DATA**

Dimensions in mm(inches)



**NPN SWITCHING TRANSISTOR**

**FEATURES**

- LOW SATURATION VOLTAGE
- FAST SWITCHING
- HIGH RELIABILITY

**APPLICATIONS**

- Switching Regulators
- Solenoid / Relay Drives

**DESCRIPTION**

High speed transistor suited for low voltage applications.

**TO-220**

PIN 1 — Base PIN 2 — Collector PIN 3 — Emitter

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

$V_{CBO}$	Collector – Base Voltage ( $I_E = 0$ )	400V
$V_{CEO}$	Collector – Emitter Voltage ( $I_B = 0$ )	200V
$V_{EBO}$	Emitter – Base Voltage ( $I_C = 0$ )	7V
$I_C$	Collector Current	10A
$I_{CM}$	Peak Collector Current ( $t_p \leq 5$ ms)	15A
$I_B$	Base Current	2A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	85W
$T_{stg}$	Storage Temperature	-65 to +175°C
$T_j$	Junction Temperature	+175°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.

**ELECTRICAL CHARACTERISTICS** ( $T_{\text{case}} = 25^{\circ}\text{C}$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO}}^*$	Collector - Emitter Voltage $I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 0$	200			V
$V_{\text{EBO}}$	Emitter – Base Voltage $I_{\text{E}} = 50\text{mA}$ $I_{\text{C}} = 0$	7		30	
$V_{\text{CE(sat)}}^*$	Collector Emitter Saturation Voltage $I_{\text{C}} = 3\text{A}$ $I_{\text{B}} = 0.3\text{A}$			0.7	
	$I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 0.6\text{A}$			1.5	
$V_{\text{BE(sat)}}^*$	Base Emitter Saturation Voltage $I_{\text{C}} = 6\text{A}$ $I_{\text{B}} = 0.6\text{A}$			2	
$I_{\text{CER}}$	Collector Cut-off Current $V_{\text{CE}} = 400\text{V}$ $R_{\text{BE}} = 50\Omega$			0.3	mA
		$T_{\text{C}} = 125^{\circ}\text{C}$		3.0	
$I_{\text{CEX}}$	Collector Cut-off Current $V_{\text{CE}} = 400\text{V}$ $V_{\text{BE}} = -1.5\text{V}$			0.3	
		$T_{\text{C}} = 125^{\circ}\text{C}$		3.0	
$I_{\text{EBO}}$	Emitter Cut-off Current $I_{\text{C}} = 0$ $V_{\text{EB}} = 5\text{V}$			1.0	
$t_{\text{on}}$	Turn-On Time $V_{\text{CC}} = 150\text{V}$ $I_{\text{C}} = 6\text{A}$			1.0	$\mu\text{s}$
$t_{\text{s}}$	Storage Time $V_{\text{BE}} = -6\text{V}$ $I_{\text{B1}} = 0.6\text{A}$			1.5	
$t_{\text{r}}$	Fall Time $R_{\text{BB}} = 5\Omega$ $I_{\text{B2}} = -1.2\text{A}$			0.25	

**NOTES**

\* Pulse Test:  $t_{\text{p}} = 300\mu\text{s}$ ,  $\delta \leq 2\%$

**THERMAL CHARACTERISTICS**

$R_{\theta\text{JC}}$ Thermal Resistance Junction to Case			1.76	$^{\circ}\text{C/W}$
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