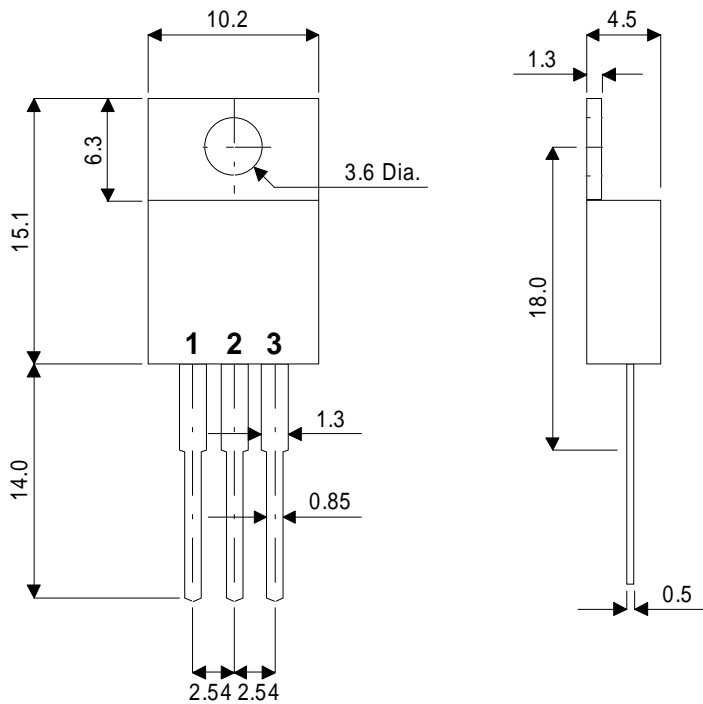


MECHANICAL DATA

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_{CEO}^*	Collector - Emitter Voltage $I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 0$	200			V
V_{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_{CER}	Collector Cut-off Current $V_{\text{CE}} = 400\text{V}$ $R_{\text{BE}} = 50\Omega$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.3	mA
				3.0	
I_{CEX}	Collector Cut-off Current $V_{\text{CE}} = 400\text{V}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			0.3	
				3.0	
I_{EBO}	Emitter Cut-off Current $I_{\text{C}} = 0$ $V_{\text{EB}} = 5\text{V}$			1.0	
t_{on}	Turn-On Time $V_{\text{CC}} = 150\text{V}$ $I_{\text{C}} = 6\text{A}$			1.0	μs
t_{s}	Storage Time $V_{\text{BE}} = -6\text{V}$ $I_{\text{B1}} = 0.6\text{A}$			1.5	
t_{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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