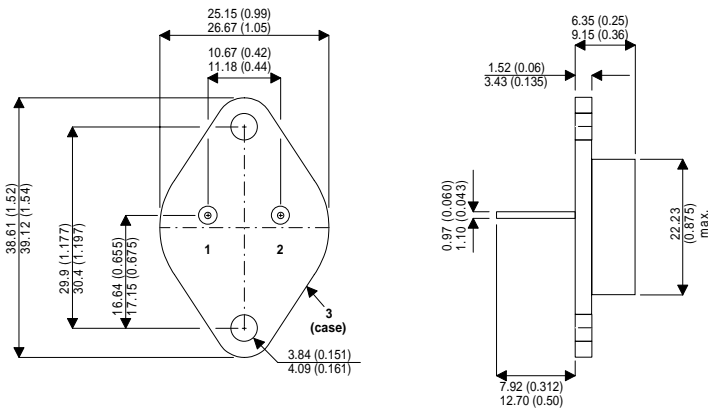


MECHANICAL DATA

Dimensions in mm(inches)

**NPN MULTI - EPITAXIAL
POWER TRANSISTOR**



TO-3(TO204AA)

PIN 1 — Base PIN 2 — Emitter Case is Collector

FEATURES

- HIGH VOLTAGE
- LOW SATURATION VOLTAGES
- HIGH RELIABILITY

APPLICATIONS

- POWER SWITCHING CIRCUITS
- LINEAR APPLICATIONS

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

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	60V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	60V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	5V
I_C	Collector Current	25A
I_{CM}	Peak Collector Current	50A
I_B	Base Current	7.5A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	200W
T_{stg}	Storage Temperature	-65 to 200°C
T_j	Junction Temperature	200°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 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(BR)^*}$ Collector - Emitter Breakdown Voltage	$I_C = 200mA$	60			V
V_{BE}^* Base - Emitter Voltage	$I_C = 10A$ $V_{CE} = 4V$			1.5	V
I_{CEV} Collector Cut-off Current	$V_{CE} = 60V$ $V_{BE} = -1.5V$ $T_{CASE} = 150^{\circ}C$			1.0	mA
				10	
I_{EBO} Emitter Cut-off Current	$V_{EB} = 5V$ $I_C = 0$			1.0	mA
I_{CEO} Collector Cut-off Current	$V_{CE} = 30V$ $I_B = 0$			2	mA
I_{CBO} Collector Cut-off Current	$V_{CE} = 60V$ $I_E = 0$			1.0	mA
$V_{CE(sat)^*}$ Collector - Emitter Saturation Voltage	$I_C = 15A$ $I_B = 1.5A$			1.0	V
	$I_C = 25A$ $I_B = 6.25A$			4	
$V_{BE(sat)^*}$ Base - Emitter Saturation Voltage	$I_C = 25A$ $I_B = 6.25A$			2.5	V
h_{FE}^* DC Current Gain	$I_C = 3A$ $V_{CE} = 4V$	35			—
	$I_C = 10A$ $V_{CE} = 4V$	20		100	
	$I_C = 25A$ $V_{CE} = 4V$	4			
h_{fe} Small Signal Current Gain	$I_C = 3A$ $V_{CE} = 4V$ $f = 1 KHZ$	20			—
C_{cbo} Collector Base Capacitance	$I_E = 0$ $V_{CB} = 10V$ $f = 1 MHz$			500	pF
f_T Transition Frequency	$I_C = 1.0A$ $V_{CB} = 10V$ $f = 1 MHz$	4			MHz
t_r Rise Time	$V_{CC} = 30V$ $I_C = 10A$ $I_{B1} = -I_{B2} = 1.0A$			0.7	μs
t_s Storage Time				1.0	
t_f Fall Time				0.8	

THERMAL CHARACTERISTICS

$R_{\theta JC}$	Thermal Resistance Junction to Case	Max	0.875	$^{\circ}C/W$
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* Pulse test $t_p = 300\mu s$, $\delta = 1.5\%$