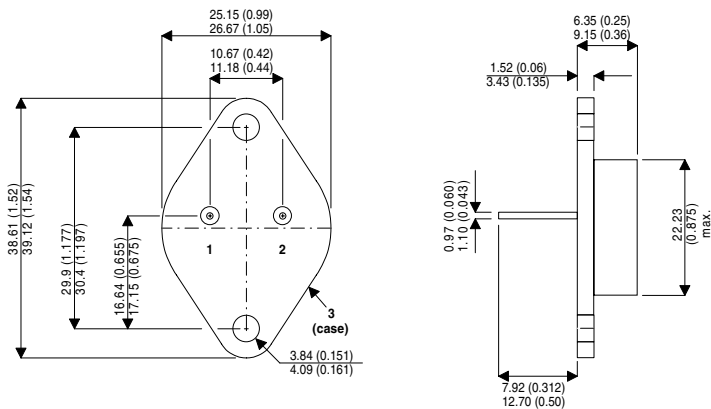


MECHANICAL DATA

Dimensions in mm(inches)

**NPN MULTI - EPITAXIAL
POWER TRANSISTOR**



TO-3(TO204AA)

PIN 1 — Base PIN 2 — Emitter Case is Collector

FEATURES

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

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

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	400V
V_{CEX}	Collector – Emitter Voltage	400V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	325V
V_{CER}	Collector – Emitter Voltage	390V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	7V
I_C	Collector Current	30A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	40A
I_B	Base Current	6A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	350W
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	$I_C = 0.2mA$	325			V
V_{EBO} Emitter – Base Voltage	$I_E = 50mA$ $I_C = 0$	7			V
I_{CEO} Collector Cut-off Current	$V_{CE} = 260V$ $I_B = 0$			3	mA
I_{CEX} Collector Cut-off Current	$V_{CE} = 400V$ $V_{BE} = -1.5V$			3	mA
	$V_{CE} = 400V$ $V_{BE} = -1.5V$ $T_C = 125^{\circ}C$			12	
I_{EBO} Emitter Cut-off Current	$I_C = 0$ $V_{EB} = 5V$			1.0	mA
$V_{CE(sat)^*}$ Collector – Emitter Saturation Voltage	$I_C = 8A$ $I_B = 1.6A$		0.2	0.8	V
	$I_C = 16A$ $I_B = 3.2A$		0.35	1.0	
$V_{BE(sat)^*}$ Base – Emitter Saturation Voltage	$I_C = 16A$ $I_B = 3.2A$		1.15	1.5	V
h_{FE}^* DC Current Gain	$I_C = 8A$ $V_{CE} = 4V$	15		60	—
	$I_C = 16A$ $V_{CE} = 4V$	8			
$I_{S/b}$ Second Breakdown Collector Current	$V_{CE} = 140V$ $t = 1s$	0.15			A
	$V_{CE} = 16V$ $t = 1s$	22			
f_T Transition Frequency	$I_C = 2A$ $V_{CE} = 15V$ $f = 10MHz$	8			MHz
t_{on} Turn-On Time	$I_C = 16A$ $I_{B1} = 3.2A$		0.55	1.3	μs
t_s Storage Time	$I_C = 16A$ $I_{B1} = 3.2A$		1.7	2.5	
t_f Fall Time	$I_{B2} = -3.2A$		0.26	1.2	

THERMAL CHARACTERISTICS

$R_{\theta JC}$	Thermal Resistance Junction to Case		0.5		$^{\circ}C/W$
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* Pulse test $t_p = 300\mu s$, $\delta = 1.5\%$