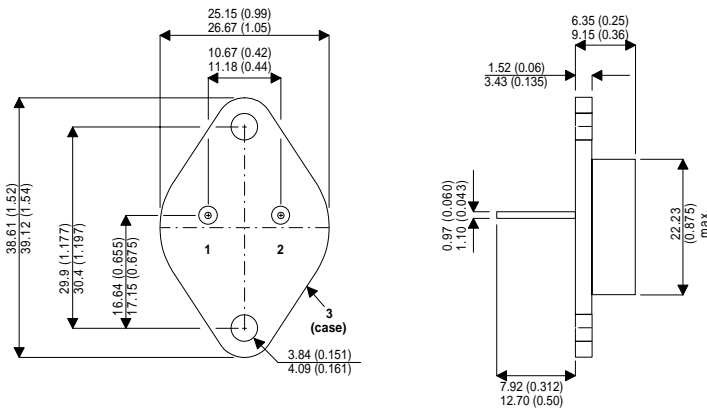


MECHANICAL DATA

Dimensions in mm(inches)

**NPN MULTI - EPITAXIAL
POWER TRANSISTOR**



TO-3

- 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 ($I_E = 0$)	300V
V_{CEX}	Collector – Emitter Voltage ($V_{BE} = -1.5V$)	300V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	250V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	7V
I_C	Collector Current	20A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	25A
I_B	Base Current	4A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	150W
T_{stg}	Storage Temperature	-65 to 200°C
T_j	Junction Temperature	200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)*}}$ Collector - Emitter Sustaining Voltage	$I_{\text{C}} = 0.2\text{mA}$	250			V
V_{EBO} Emitter – Base Voltage	$I_{\text{E}} = 50\text{mA}$	7			V
I_{CEO} Collector Cut-off Current	$V_{\text{CE}} = 200\text{V}$			1.5	mA
I_{CEX} Collector Cut-off Current	$V_{\text{CE}} = 300\text{V}$ $V_{\text{BE}} = -1.5\text{V}$			1.5	mA
	$V_{\text{CE}} = 300\text{V}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			6	
I_{EBO} Emitter Cut-off Current	$I_{\text{C}} = 0$ $V_{\text{EB}} = 5\text{V}$			1	mA
$V_{\text{CE(sat)*}}$ Collector – Emitter Saturation Voltage	$I_{\text{C}} = 5\text{A}$ $I_{\text{B}} = 0.5\text{A}$		0.22	1	V
	$I_{\text{C}} = 10\text{A}$ $I_{\text{B}} = 1.25\text{A}$		0.5	1.5	
$V_{\text{BE(sat)*}}$ Base – Emitter Saturation Voltage	$I_{\text{C}} = 10\text{A}$ $I_{\text{B}} = 1.25\text{A}$		1.23	1.5	V
$h_{\text{FE}*}$ DC Current Gain	$I_{\text{C}} = 5\text{A}$ $V_{\text{CE}} = 4\text{V}$	20		60	—
	$I_{\text{C}} = 10\text{A}$ $V_{\text{CE}} = 4\text{V}$	10			
$I_{\text{S/b}}$ Second Breakdown Collector Current	$V_{\text{CE}} = 30\text{V}$ $t = 1\text{s}$	5			A
	$V_{\text{CE}} = 140\text{V}$ $t = 1\text{s}$	0.15			
f_{T} Transition Frequency	$I_{\text{C}} = 1\text{A}$ $f = 10\text{MHz}$ $V_{\text{CE}} = 15\text{V}$	8			MHz
t_{on} Turn-On Time	$I_{\text{C}} = 10\text{A}$ $V_{\text{CC}} = 150\text{V}$ $I_{\text{B1}} = 1.25\text{A}$		0.28	1	μs
t_{s} Storage Time	$I_{\text{C}} = 10\text{A}$ $I_{\text{B1}} = 1.25\text{A}$		1.45	2	
t_{f} Fall Time	$I_{\text{B2}} = -1.25\text{A}$ $V_{\text{CC}} = 150\text{V}$		0.23	0.5	

THERMAL CHARACTERISTICS

$R_{\theta\text{JC}}$ Thermal Resistance Junction to Case		1.17		$^{\circ}\text{C/W}$
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