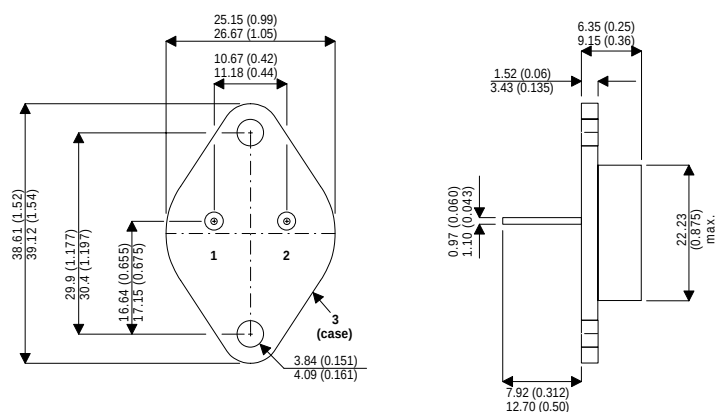


MECHANICAL DATA

Dimensions in mm(inches)



TO-3

PIN 1 — Base
PIN 2 — Emitter
Case is Collector.

NPN MULTI - EPITAXIAL POWER TRANSISTOR

FEATURES

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

APPLICATIONS

- Industrial Equipment

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

V_{CBO}	Collector – Base Voltage ($I_E = 0$)	160V
V_{CER}	Collector – Emitter Voltage ($R_{BE} = 100\Omega$)	150V
V_{CEX}	Collector – Emitter Voltage ($V_{BE} = -1.5V$)	160V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	125V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	7V
I_C	Collector Current	50A
I_{CM}	Peak Collector Current ($t_p = 10$ ms)	60A
I_B	Base Current	10A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	250W
T_{stg}	Storage Temperature	-65 to $200^{\circ}C$
T_j	Junction Temperature	$200^{\circ}C$

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	$I_{\text{C}} = 250\text{mA}$ $I_{\text{B}} = 0$ $L = 25\text{mH}$	125			V
$V_{(\text{BR})\text{EBO}}$ Emitter – Base Voltage	$I_{\text{E}} = 50\text{mA}$	7			
$V_{\text{CE(sat)}}^*$ Collector Emitter Saturation Voltage	$I_{\text{C}} = 25\text{A}$ $V_{\text{CE}} = 2.5\text{A}$		0.3	0.6	
	$I_{\text{C}} = 50\text{A}$ $I_{\text{B}} = 5\text{A}$		0.7	1.2	
$V_{\text{BE(sat)}}^*$ Base Emitter Saturation Voltage	$I_{\text{C}} = 50\text{A}$ $I_{\text{B}} = 5\text{A}$		1.4	2	
I_{CEO} Collector Cut-off Current	$V_{\text{CE}} = 100\text{V}$ $I_{\text{B}} = 0$			3	mA
I_{CEX} Collector Cut-off Current	$V_{\text{CE}} = V_{\text{CEX}}$ $V_{\text{BE}} = -1.5\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$			3	
				12	
I_{EBO} Emitter Cut-off Current	$I_{\text{C}} = 0$ $V_{\text{EB}} = 5\text{V}$			1	
h_{FE}^* DC Current Gain	$V_{\text{CE}} = 2\text{V}$ $I_{\text{C}} = 25\text{A}$	20		60	—
	$V_{\text{CE}} = 4\text{V}$ $I_{\text{C}} = 50\text{A}$	10			
f_{T} Transition Frequency	$I_{\text{C}} = 2\text{A}$ $V_{\text{CE}} = 15\text{V}$ $f = 100\text{MHz}$	8			MHz
t_{on} Turn-On Time	$I_{\text{C}} = 50\text{A}$ $I_{\text{B}} = 5\text{A}$			1.5	μs
t_{s} Storage Time	$I_{\text{C}} = 50\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 5\text{A}$			1.2	
t_{f} Fall Time	$I_{\text{C}} = 50\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 5\text{A}$			0.3	

NOTES

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

THERMAL CHARACTERISTICS

$R_{\theta\text{JC}}$ Thermal Resistance Junction to Case			0.7	$^{\circ}\text{C/W}$
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