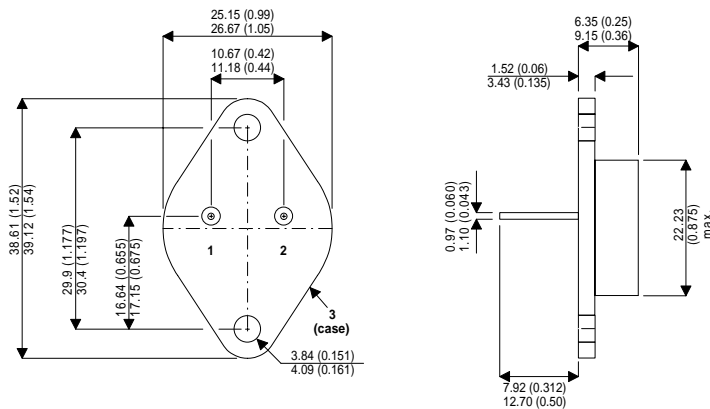


**MECHANICAL DATA**

Dimensions in mm(inches)

**NPN MULTI - EPITAXIAL  
POWER TRANSISTOR**



**FEATURES**

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

**APPLICATIONS**

- Industrial Equipment

**TO-3**

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

**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°C
$T_j$	Junction Temperature	200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)^*}$ Collector - Emitter Sustaining Voltage	$I_C = 250mA$ $L = 25mH$ $I_B = 0$	125			V
$V_{(BR)EBO}$ Emitter – Base Voltage	$I_E = 50mA$	7			
$V_{CE(sat)^*}$ Collector Emitter Saturation Voltage	$I_C = 25A$ $I_C = 50A$ $V_{CE} = 2.5A$ $I_B = 5A$		0.3 0.7	0.6 1.2	
$V_{BE(sat)^*}$ Base Emitter Saturation Voltage	$I_C = 50A$ $I_B = 5A$		1.4	2	
$I_{CEO}$ Collector Cut-off Current	$V_{CE} = 100V$ $I_B = 0$			3	mA
$I_{CEX}$ Collector Cut-off Current	$V_{CE} = V_{CEX}$ $V_{BE} = -1.5V$ $T_C = 125^{\circ}C$			3 12	
$I_{EBO}$ Emitter Cut-off Current	$I_C = 0$ $V_{EB} = 5V$			1	
$h_{FE}^*$ DC Current Gain	$V_{CE} = 2V$ $V_{CE} = 4V$ $I_C = 25A$ $I_C = 50A$	20 10		60	—
$f_T$ Transition Frequency	$I_C = 2A$ $V_{CE} = 15V$ $f = 100MHz$	8			MHz
$t_{on}$ Turn-On Time	$I_C = 50A$ $I_B = 5A$			1.5	$\mu s$
$t_s$ Storage Time	$I_C = 50A$ $I_{B1} = -I_{B2} = 5A$			1.2	
$t_f$ Fall Time	$I_C = 50A$ $I_{B1} = -I_{B2} = 5A$			0.3	

**NOTES**

\* Pulse Test:  $t_p = 300\mu s$ ,  $\delta \leq 2\%$

**THERMAL CHARACTERISTICS**

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