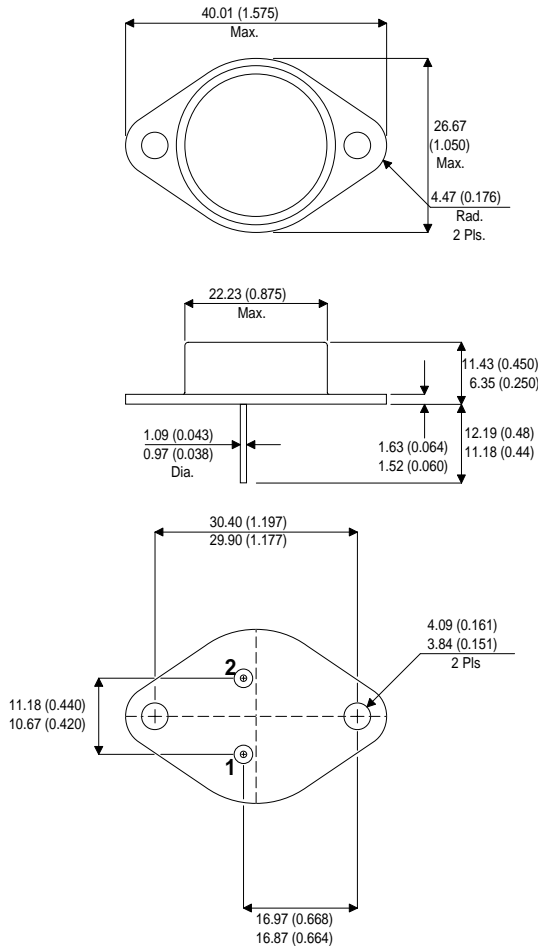


MECHANICAL DATA

Dimensions in mm



TO3

Pin 1 – Base Pin 2 – Emitter Case is Collector

**ADVANCED
DISTRIBUTED BASE DESIGN
HIGH VOLTAGE
HIGH SPEED NPN
SILICON POWER TRANSISTOR**

- SEMEFAB DESIGNED AND DIFFUSED DIE
- HIGH VOLTAGE
- FAST SWITCHING
- HIGH ENERGY RATING
- EFFICIENT POWER SWITCHING
- MILITARY AND HI-REL OPTIONS
- EXCEPTIONAL HIGH TEMPERATURE PERFORMANCE

FEATURES

- Multi-base for efficient energy distribution across the chip resulting in significantly improved switching and energy ratings across full temperature range.
- Ion implant and high accuracy masking for tight control of characteristics from batch to batch.
- Triple Guard Rings for improved control of high voltages.

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

V_{CBO}	Collector – Base Voltage	600V
V_{CEO}	Collector – Emitter Voltage ($I_B = 0$)	300V
V_{EBO}	Emitter – Base Voltage ($I_C = 0$)	10V
I_C	Continuous Collector Current	25A
$I_{C(PK)}$	Peak Collector Current	40A
P_{tot}	Total Dissipation at $T_{case} = 25^{\circ}C$	200W
T_{stg}	Operating and Storage Temperature Range	-65 to 175°C
R_{th}	Thermal Resistance (junction-case)	Max. 0.7°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
ELECTRICAL CHARACTERISTICS							
$V_{\text{CEO(sus)}}$	Collector – Emitter Sustaining Voltage	$I_{\text{C}} = 10\text{mA}$	300		V		
$V_{(\text{BR})\text{CBO}}$	Collector – Base Breakdown Voltage	$I_{\text{C}} = 1\text{mA}$	600				
$V_{(\text{BR})\text{EBO}}$	Emitter – Base Breakdown Voltage	$I_{\text{E}} = 1\text{mA}$	10				
I_{CBO}	Collector – Base Cut-Off Current	$V_{\text{CB}} = 600\text{V}$		10	μA		
			$T_{\text{C}} = 125^{\circ}\text{C}$			100	
I_{CEO}	Collector – Emitter Cut-Off Current	$I_{\text{B}} = 0$	$V_{\text{CE}} = 300\text{V}$		100	μA	
I_{EBO}	Emitter Cut-Off Current	$V_{\text{EB}} = 5\text{V}$	$I_{\text{C}} = 0$		10	μA	
				$T_{\text{C}} = 125^{\circ}\text{C}$			100
h_{FE}^*	DC Current Gain	$I_{\text{C}} = 2\text{A}$	$V_{\text{CE}} = 4\text{V}$	30	55	—	
		$I_{\text{C}} = 10\text{A}$	$V_{\text{CE}} = 4\text{V}$	20	28		
		$I_{\text{C}} = 15\text{A}$	$V_{\text{CE}} = 4\text{V}$	15	20		
$V_{\text{CE(sat)}}^*$	Collector – Emitter Saturation Voltage	$I_{\text{C}} = 2\text{A}$	$I_{\text{B}} = 0.2\text{A}$		0.07	0.2	V
		$I_{\text{C}} = 10\text{A}$	$I_{\text{B}} = 1\text{A}$		0.4	0.7	
		$I_{\text{C}} = 15\text{A}$	$I_{\text{B}} = 1.5\text{A}$		1.2	1.5	
$V_{\text{BE(sat)}}^*$	Base – Emitter Saturation Voltage	$I_{\text{C}} = 10\text{A}$	$I_{\text{B}} = 1\text{A}$		1.1	1.3	V
		$I_{\text{C}} = 15\text{A}$	$I_{\text{B}} = 1.5\text{A}$		1.4	2	
DYNAMIC CHARACTERISTICS							
f_{t}	Transition Frequency	$I_{\text{C}} = 100$ 10MHz	$V_{\text{CE}} = 4\text{V}$ $f =$		20	MHz	
C_{ob}	Output Capacitance	$V_{\text{CB}} = 20\text{V}$	$f = 10\text{MHz}$		260	pF	

* Pulse test $t_{\text{p}} = 300\mu\text{s}$, $\delta < 2\%$



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