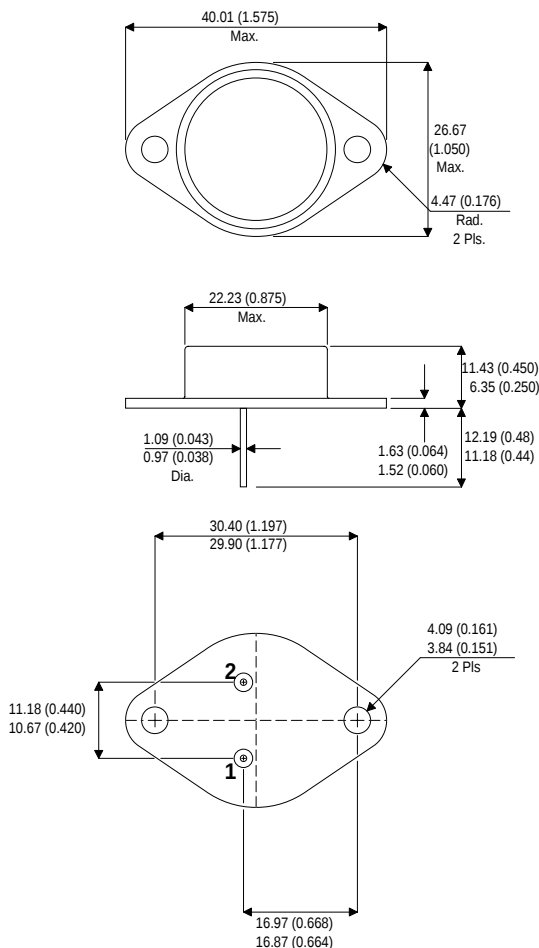


MECHANICAL DATA

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 $175^{\circ}C$
R_{th}	Thermal Resistance (junction-case)	Max. $0.7^{\circ}C/W$

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
ELECTRICAL CHARACTERISTICS							
V _{CEO(sus)}	Collector – Emitter Sustaining Voltage	I _C = 10mA		300			V
V _{(BR)CBO}	Collector – Base Breakdown Voltage	I _C = 1mA		600			
V _{(BR)EBO}	Emitter – Base Breakdown Voltage	I _E = 1mA		10			
I _{CBO}	Collector – Base Cut–Off Current	V _{CB} = 600V				10	μA
		T _C = 125°C				100	
I _{CEO}	Collector – Emitter Cut–Off Current	I _B = 0	V _{CE} = 300V			100	μA
I _{EBO}	Emitter Cut–Off Current	V _{EB} = 5V				10	μA
		I _C = 0		T _C = 125°C			
h _{FE} *	DC Current Gain	I _C = 2A	V _{CE} = 4V	30	55		—
		I _C = 10A	V _{CE} = 4V	20	28		
		I _C = 15A	V _{CE} = 4V	15	20		
		T _C = 125°C					
V _{CE(sat)} *	Collector – Emitter Saturation Voltage	I _C = 2A	I _B = 0.2A		0.07	0.2	V
		I _C = 10A	I _B = 1A		0.4	0.7	
		I _C = 15A	I _B = 1.5A		1.2	1.5	
V _{BE(sat)} *	Base – Emitter Saturation Voltage	I _C = 10A	I _B = 1A		1.1	1.3	V
		I _C = 15A	I _B = 1.5A		1.4	2	
DYNAMIC CHARACTERISTICS							
f _t	Transition Frequency	I _C = 100 10MHz	V _{CE} = 4V f =		20		MHz
C _{ob}	Output Capacitance	V _{CB} = 20V	f = 10MHz		260		pF

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