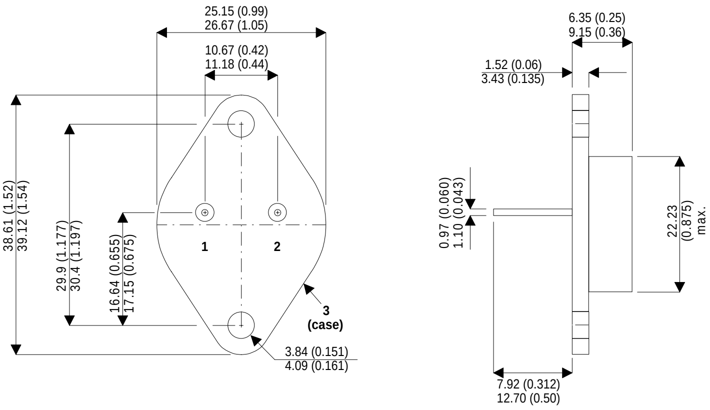
BUL47A

MECHANICAL DATA

Dimensions in mm



TO3 (TO-204AA)

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°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	40A
P_{tot}	Total Dissipation at T_{case} = 25°C	200W
T_{stg}	Operating and Storage Temperature Range	–65 to 175°C
R_{th}	Thermal Resistance (junction-case)	0.75°CW

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	ELECTRICAL CHARACTERISTICS						
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage	I_C = 100mA	I_B = 0	300			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage	I_C = 1mA	I_E = 0	600			
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage	I_E = 1mA	I_C = 0	10			
I_{CBO}	Collector – Base Cut–Off Current	V_{CB} = 600V	I_E = 0			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	I_C = 0			10	µA
			T_C = 125°C			100	
h_{FE*}	DC Current Gain	I_C = 1A	V_{CE} = 4V	15			—
		I_C = 10A	V_{CE} = 4V	20			
		I_C = 25A	V_{CE} = 4V	25			
$V_{CE(sat)*}$	Collector – Emitter Saturation Voltage	I_C = 30A	I_B = 6A			0.7	V
$V_{BE(sat)*}$	Base – Emitter Saturation Voltage	I_C = 10A	I_B = 1A			1.1	
	DYNAMIC CHARACTERISTICS						
f_t	Transition Frequency	I_C = 100 f = 10MHz	V_{CE} = 4V		20		MHz
C_{ob}	Output Capacitance	V_{CB} = 20V	f = 10MHz		260		pF

* Pulse test t_p = 300µs , δ < 2%