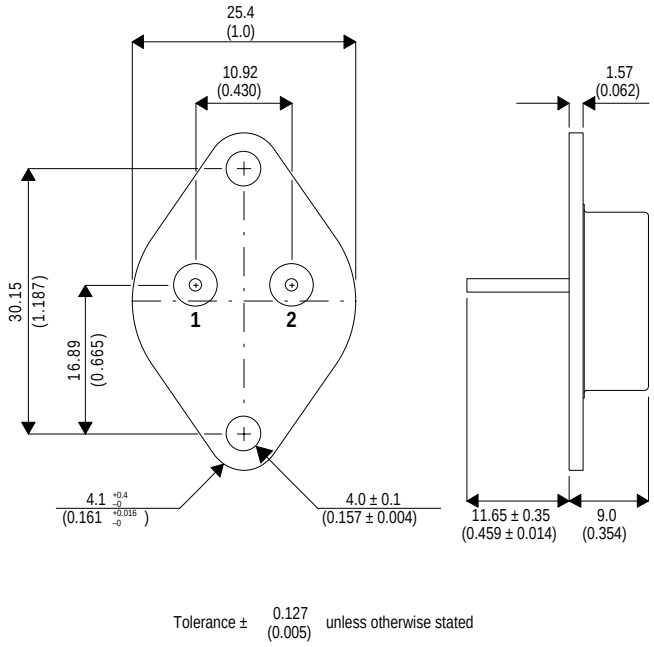
BUP50A

MECHANICAL DATA
Dimensions in mm



TO3B

Pin 1 – Base Pin 2 – Emitter

NPN MULTI-EPITAXIAL VERY FAST SWITCHING HIGH POWER TRANSISTOR

FEATURES

- DIFFUSED BY SEMEFAB
- VERY LOW $V_{CE(sat)}$
- VERY FAST SWITCHING
- HIGH SWITCHING CURRENTS
- HIGH RELIABILITY
- MILITARY OPTIONS AVAILABLE

APPLICATIONS

- SWITCHING REGULATORS
- MOTOR CONTROLS
- HIGH POWER CONVERTORS

The BUP50A is a very fast switching, very low saturation, high power tranistor using wafer diffused by Semefab. It is particularly suited to applications requiring robust, fast switching devices.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CEX}	Collector – Emitter Voltage (V_{BE} = –1.5V)	200V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	120V
V_{EBO}	Emitter – Base Voltage	10V
I_C	Collector Current	100A
$I_{C(PK)}$	Peak Collector Current	150A
P_{tot}	Total Dissipation at T_{case} = 25°C	300W
T_{stg}	Storage Temperature	–55 to 175°C
T_J	Maximum Operating Junction Temperature	200°C
R_{th}	Thermal Resistance (junction-case)	0.58°C/W

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

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut–Off Current	V_{BE} = -1.5V V_{CEX} = 154			0.1	mA
		T_C = 150°C			5	
I_{EBO}	Emitter Cut–Off Current	V_{EB} = 8V			0.1	mA
$V_{CE(sat)}$*	Collector – Emitter Saturation Voltage	I_C = 25A I_B = 2A		0.4	0.35	V
		I_C = 40A I_B = 3A		0.5	0.5	
		I_C = 100A I_B = 10A		0.7	1	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	I_C = 25A I_B = 2A		0.9	1	V
		I_C = 40A I_B = 3A		1.0	1.2	
		I_C = 100A I_B = 10A		1.3	1.5	
h_{FE}	DC Current Gain	I_C = 25A V_{CE} = 4V	25	55		—
		I_C = 40A V_{CE} = 4V	20	30		
		I_C = 100A V_{CE} = 4V	10	157		
SWITCHING CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)						
t_{on}	On Time	I_C = 80A V_{CC} = 80V		0.4	0.8	µS
t_s	Storage Time	I_{B1} = -I_{B2} = 8A		0.3	0.5	
t_f	Fall Time			0.1	0.2	

* Pulse test t_p = 300µS $\delta \leq$ 2%