

BUP50A

MECHANICAL DATA

Dimensions in mm

NPN MULTI-EPITAXIAL
VERY FAST SWITCHING
HIGH POWER TRANSISTOR

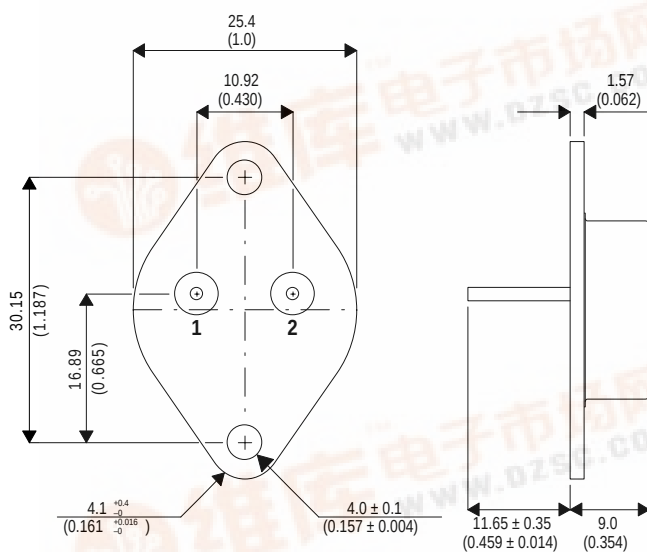
FEATURES

- 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 transistor using wafer diffused by Semefab. It is particularly suited to applications requiring robust, fast switching devices.



Tolerance ± 0.127 (0.005) unless otherwise stated

TO3B

Pin 1 – Base

Pin 2 – Emitter

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ 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 $T_{case} = 25^{\circ}C$	300W
T_{stg}	Storage Temperature	-55 to 175°C
	Maximum Operating Junction Temperature	200°C
	Thermal Resistance (junction-case)	0.58°C/W

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
I _{CEX}	Collector Cut–Off Current	V _{BE} = -1.5V V _{CEX} = 154 T _C = 150°C				0.1 5	mA
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 I _{B1} = -I _{B2} = 8A		0.4	0.8	μS	
t _s	Storage Time			0.3	0.5		
t _f	Fall Time			0.1	0.2		

* Pulse test $t_{\text{p}} = 300\mu\text{S}$ $\delta \leq 2\%$