SILICON NPN POWER SWITCHING TRANSISTOR

TT electronics
Semelab Limited

BUX45X

- High Voltage, High Power, Fast Switching.
- Hermetic Metal TO3 Package.
- Ideally suited for Motor Control and Power Switching Circuits
- Screening Options Available

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage		500V
V_{CEX}	Collector – Emitter Voltage	V_{BE} = -1.5V	500V
V_{CEO}	Collector – Emitter Voltage		500V
V_{EBO}	Emitter – Base Voltage		7V
I_C	Continuous Collector Current		5A
I_{CM}	Peak Collector Current		7A
I_B	Base Current		1.0A
P_D	Total Power Dissipation at	T_C = 25°C	120W
		Derate Above 25°C	0.959W/°C
T_J	Junction Temperature Range		-65 to +150°C
T_{stg}	Storage Temperature Range		-65 to +150°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	1.04	°C/W

SEMELAB
A subsidiary of TT electronics plc.

Semelab Limited Coventry Road, Lutterworth, Leicestershire, LE17 4JB
Telephone +44 (0) 1455 556565 Fax +44 (0) 1455 552612 Email: sales@semelab-tt.com Website: http://www.semelab-tt.com

SILICON NPN POWER SWITCHING TRANSISTOR BUX45X

TT electronics
Semelab Limited

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ.	Max.	Units
$V_{(BR)CEO}$[1]	Collector-Emitter Breakdown Voltage	I_C = 20mA	I_B = 0	500			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 50mA	I_C = 0	7.0			
I_{CEO}	Collector Cut-Off Current	V_{CE} = 400V	I_B = 0			1.0	mA
I_{CEX}	Collector Cut-Off Current	V_{CE} = 500V	V_{BE} = -1.5V			1.0	
			T_C = 125°C			5.0	
I_{EBO}	Emitter Cut-Off Current	V_{EB} = -5V	I_C = 0			1.0	
$V_{CE(sat)}$[1]	Collector-Emitter Saturation Voltage	I_C = 1.0A	I_B = 0.125A			1.0	V
		I_C = 2.0A	I_B = 0.4A			2.0	
$V_{BE(sat)}$[1]	Base-Emitter Saturation Voltage	I_C = 2.0A	I_B = 0.4A			2.0	
$I_{S/b}$[2]	Secondary Breakdown t = 1s, non-repetitive	V_{CE} = 135V		0.15			A
		V_{CE} = 30V		4			
h_{FE}[1]	Forward-current transfer ratio	I_C = 1.0A	V_{CE} = 4V	15		45	
		I_C = 2.0A	V_{CE} = 4V	8			

DYNAMIC CHARACTERISTICS

f_T	Transition Frequency	I_C = 1.0A	V_{CE} = 15V	8			MHz
t_{on}	Turn-On Time	I_C = 2.0A I_{B1} = 0.4A	V_{CC} = 100V			1.0	µs
t_s	Storage Time	I_C = 2.0A	V_{CC} = 100V			5.0	
t_f	Fall Time	I_{B1} = -I_{B2} = 0.4A				1.2	

Notes

(1) Pulse Width ≤ 380us, δ ≤ 2%

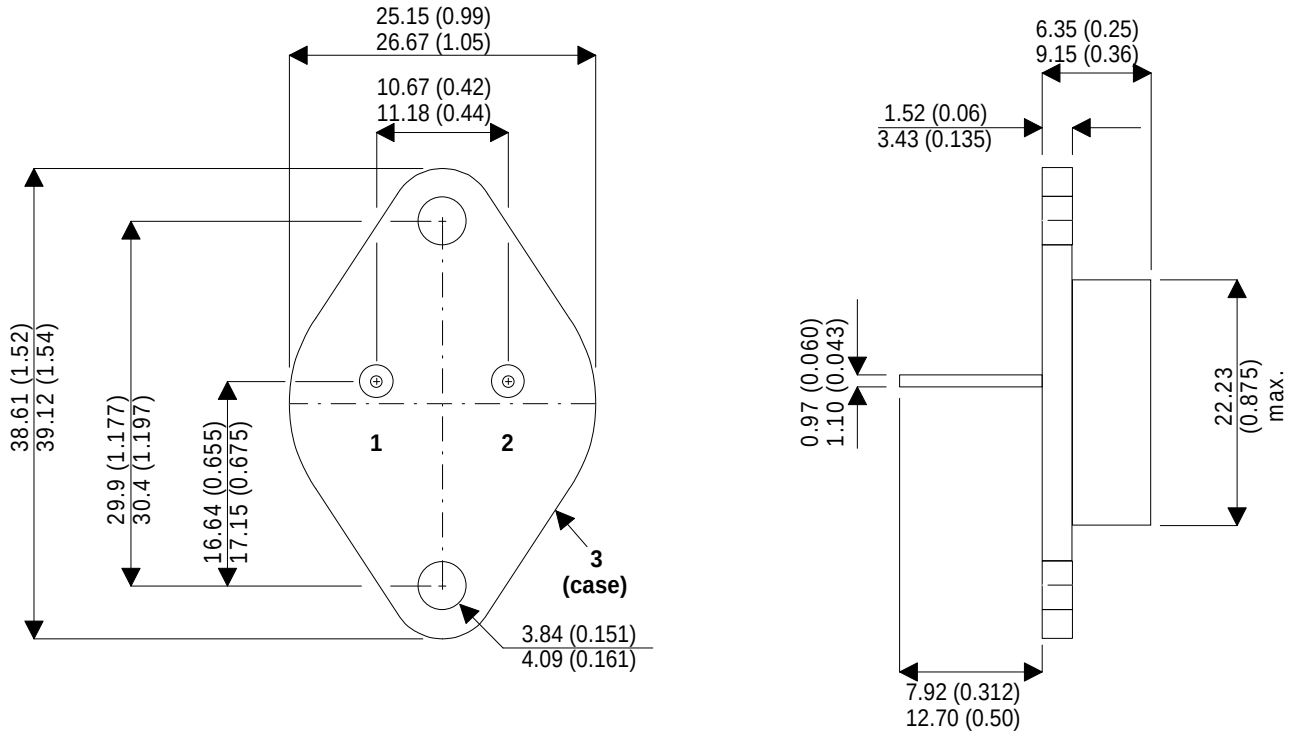
(2) Not a production test. Design only.

SILICON NPN POWER SWITCHING TRANSISTOR BUX45X

Semelab Limited

MECHANICAL DATA

Dimensions in mm (inches)



TO3 (TO-204AA)

Pin 1 - Base Pin 2 - Emitter Case - Collector