

Silicon diffused power transistors

BUX86P; BUX87P

GENERAL DESCRIPTION

High voltage, high speed glass passivated npn power transistors in a SOT82 envelope intended for use in converters, inverters, switching regulators, motor control systems and switching applications.

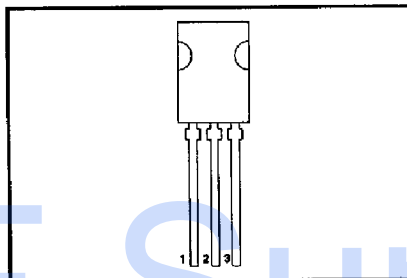
QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.		UNIT
			BUX	86P	87P	
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0 \text{ V}$	-	800	1000	V
V_{CEO}	Collector-emitter voltage (open base)		-	400	450	V
V_{CESAT}	Collector-emitter saturation voltage	$I_C = 0.2 \text{ A}; I_B = 20 \text{ mA}$	-	1		V
I_C	Collector current (DC)		-	0.5		A
I_{CM}	Collector current peak value		-	1		A
P_{tot}	Total power dissipation	$T_{mb} \leq 25 \text{ }^\circ\text{C}$	-	42		W
t_f	Fall time	$I_C = 0.2 \text{ A}; I_{B(on)} = 20 \text{ mA}$	0.4	-		μs

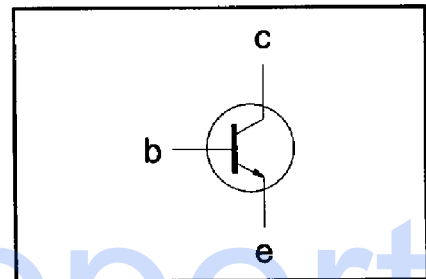
PINNING - SOT82

PIN	DESCRIPTION
1	base
2	collector
3	emitter

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum Rating System (IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
			BUX	86P	87P	
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0 \text{ V}$	-	800	1000	V
V_{CEO}	Collector-emitter voltage (open base)		-	400	450	V
V_{EBO}	Emitter-base voltage (open collector)	$T_{mb} \leq 25 \text{ }^\circ\text{C}$	-	5		V
I_C	Collector current (DC)		-	0.5		A
I_{CM}	Collector current (peak value) $t_p = 2 \text{ ms}$		-	1		A
I_B	Base current (DC)		-	0.2		A
I_{BM}	Base current (peak value)		-	0.3		A
$-I_{BM}$	Reverse base current (peak value) ¹		-	0.3		A
P_{tot}	Total power dissipation		-	42		W
T_{stg}	Storage temperature	-	-65	150		$^\circ\text{C}$
T_j	Junction temperature	-	-	150		$^\circ\text{C}$

¹ Turn-off current.

7110826 0077840 491

July 1994

435

Rev 1.000

Silicon diffused power transistors

BUX86P; BUX87P

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Junction to mounting base		-	3	K/W
$R_{th\ j-a}$	Junction to ambient	in free air	100	-	K/W

STATIC CHARACTERISTICS

 $T_{mb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CES}		$V_{BE} = 0\text{ V}; V_{CE} = V_{CESMmax}$	-	-	100	μA
I_{CES}		$V_{BE} = 0\text{ V}; V_{CE} = V_{CESMmax}$ $T_j = 125\text{ }^{\circ}\text{C}$	-	-	1.0	mA
I_{EBO}	Emitter cut-off current	$V_{EB} = 5\text{ V}; I_C = 0\text{ A}$	-	-	1	mA
V_{CEsat}	Collector-emitter saturation voltages	$I_C = 0.1\text{ A}; I_B = 10\text{ mA}$	-	-	0.8	V
V_{CEsat}		$I_C = 0.2\text{ A}; I_B = 20\text{ mA}$	-	-	1	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 0.2\text{ A}; I_B = 20\text{ mA}$	-	-	1	V
h_{FE}	DC current gain	$I_C = 50\text{ mA}; V_{CE} = 5\text{ V}$	26	50	125	
$V_{CEOsust}$	Collector-emitter sustaining voltage	$I_C = 100\text{ mA}; I_{Boff} = 0; L = 25\text{ mH}$	400	-	-	V
		BUX86P	450	-	-	V
		BUX87P				

DYNAMIC CHARACTERISTICS

 $T_{mb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
	Switching times (resistive load)	$I_C = 0.2\text{ A}; I_{Bon} = 20\text{ mA}; -I_{Boff} = 40\text{ mA}; V_{CC} = 250\text{ V}$			
t_{on}	Turn-on time		25	0.5	μs
t_s	Turn-off storage time		2	3.5	μs
t_f	Turn-off fall time		0.4	-	μs
t_f	Turn-off fall time	$T_{mb} = 95\text{ }^{\circ}\text{C}$	-	1.3	μs

7110826 0077841 328

July 1994

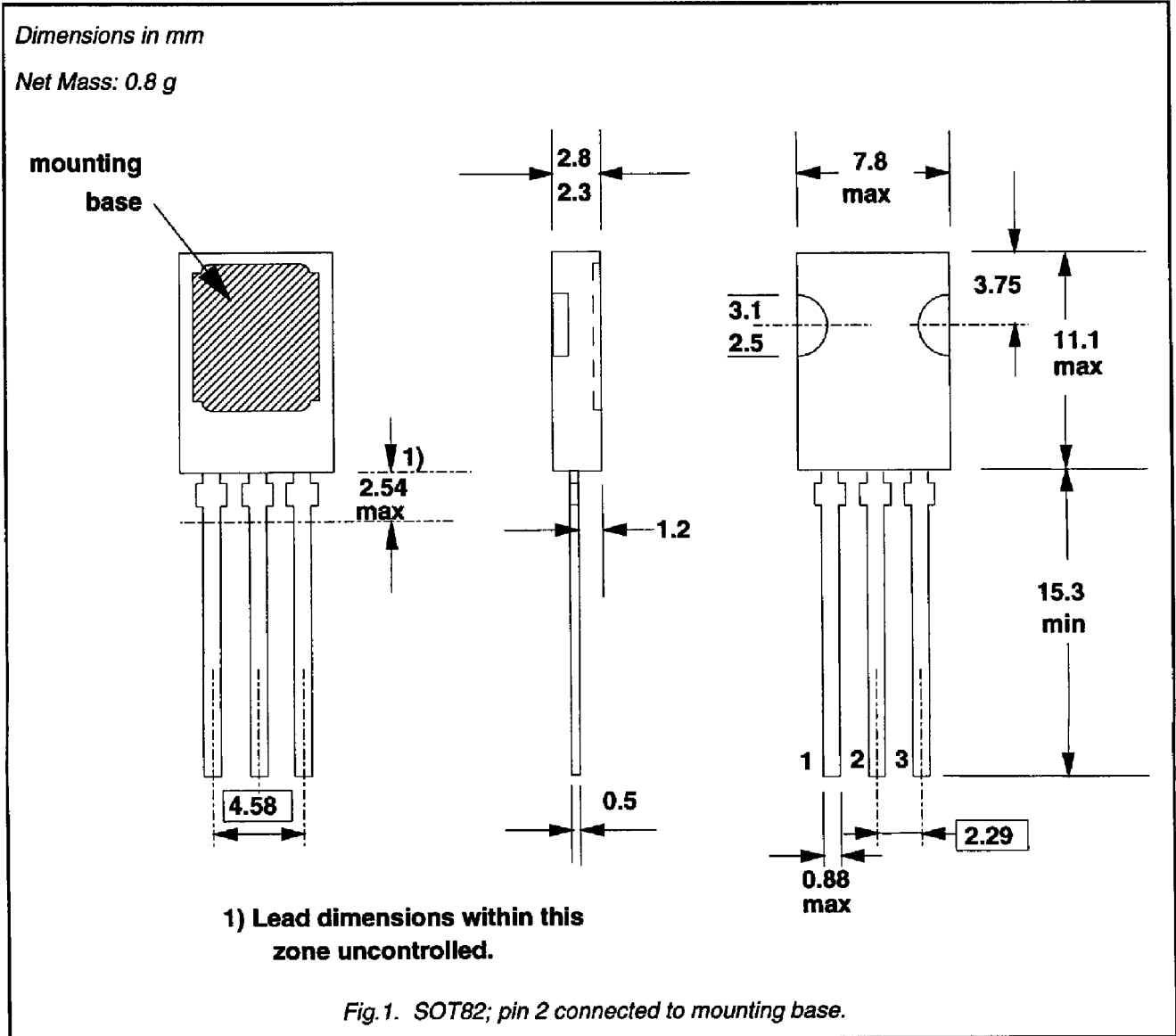
436

Rev 1.000

Silicon diffused power transistors

BUX86P; BUX87P

MECHANICAL DATA



Notes

1. Accessories supplied on request: refer to mounting instructions for SOT82 envelopes.

7110826 0077842 264

July 1994

437

Rev 1.000