

NPN Silicon Power Transistors

SIEMENS AKTIENGESELLSCHAFT D T-33-13

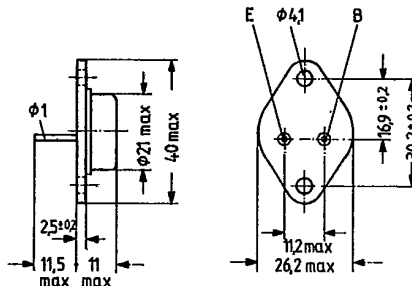
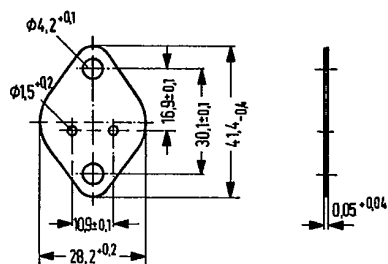
BUW 70

BUW 71

BUW 72

BUW 71, BUW 72, and BUW 73 are triple diffused silicon NPN power switching transistors in TO 3 case (3 A 2 DIN 41872). They are outstanding for short switching times and high dielectric strength and are particularly suitable for use in clocked voltage converters. The collector is electrically connected to the case.

Type	Ordering code
BUW 70	Q62702-U295
BUW 71	Q62702-U296
BUW 72	Q62702-U297
Mica washer	Q62901-B11-A
Insulating nipple	Q62901-B50



Approx. weight 18 g
Mica washer

Additional thermal resistance
dry: $R_{th} = 1.25 \text{ K/W}$
greased: $R_{th} = 0.35 \text{ K/W}$

Dimensions in mm

Maximum ratings

	BUW 70	BUW 71	BUW 72	
Collector-base voltage	150	450	450	V
Collector-emitter voltage	100	400	400	V
Emitter base voltage	7	7	7	V
Collector current	10	5	10	A
Base current	3	1.5	3	A
Junction temperature	150	150	150	°C
Storage temperature range		-65 to +150		°C
Total power dissipation ($T_{case} \leq 25^\circ\text{C}$)	P_{tot} 80	100	100	W

Thermal resistance

Junction to case	R_{thJC}	≤ 1.5	≤ 1.25	≤ 1.25	K/W
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Static characteristics ($T_{\text{case}} = 25^\circ\text{C}$)

		BUW 70	BUW 71	BUW 72	
Collector-emitter breakdown voltage ($I_{\text{CEO}} = 10 \text{ mA}$)	$V_{(\text{BR})\text{CEO}}$	100	400	400	V
Collector cutoff current ($V_{\text{CBO}} = 450 \text{ V}$)	I_{CBO}	—	0.1	0.1	mA
($V_{\text{CBO}} = 150 \text{ V}$)	I_{CBO}	0.1	—	—	mA
Emitter cutoff current ($V_{\text{BE0}} = 7 \text{ V}$)	I_{EBO}	0.1	0.1	0.1	mA
Collector-emitter saturation voltage ($I_{\text{C}} = 4 \text{ A}$, $I_{\text{B}} = 0.8 \text{ A}$)	V_{CEsat}	0.8	—	0.8	V
($I_{\text{C}} = 2 \text{ A}$, $I_{\text{B}} = 0.4 \text{ A}$)	V_{CEsat}	—	0.8	—	V
Base-emitter saturation voltage ($I_{\text{C}} = 4 \text{ A}$, $I_{\text{B}} = 0.8 \text{ A}$)	V_{BEsat}	1.5	—	1.5	V
($I_{\text{C}} = 2 \text{ A}$, $I_{\text{B}} = 0.4 \text{ A}$)	V_{BEsat}	—	1.5	—	V
DC current gain ($I_{\text{C}} = 4 \text{ A}$; $V_{\text{CE}} = 5 \text{ V}$)	h_{FE}	> 40	—	> 15	—
($I_{\text{C}} = 2 \text{ A}$, $V_{\text{CE}} = 5 \text{ V}$)	h_{FE}	—	> 15	—	—

Dynamic characteristics ($T_{\text{case}} = 25^\circ\text{C}$)

Switching times:

($I_{\text{C}} = 5 \text{ A}$, $I_{\text{B1}} = -I_{\text{B2}} = 0.5 \text{ A}$, $R_{\text{L}} = 10 \Omega$)	t_{f}	1	—	1.2	μs
	t_{on}	1	—	2	μs
	t_{s}	3	—	4	μs
($I_{\text{C}} = 3 \text{ A}$, $I_{\text{B1}} = -I_{\text{B2}} = 0.3 \text{ A}$, $R_{\text{L}} = 20 \Omega$)	t_{f}	—	1.3	—	μs
	t_{on}	—	1.5	—	μs
	t_{s}	—	4	—	μs