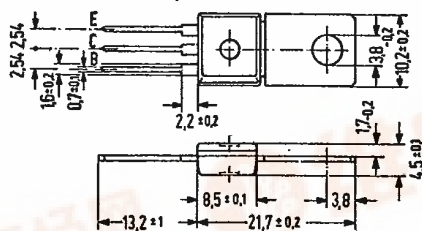


PNP Silicon Epibase Transistors

T-33-17 BD 612
BD 614
BD 616
BD 618
BD 620

Type	Ordering code
BD 612/BD 611 pair.	Q62702-D1103
BD 614/BD 613 pair.	Q62702-D1104
BD 616/BD 615 pair.	Q62702-D1105
BD 618/BD 617 pair.	Q62702-D1106
BD 620/BD 619 pair.	Q62702-D1107



Approx. weight 15 g

Dimensions in mm

Maximum ratings		BD 612	BD 614	BD 616	BD 618	BD 620	
Collector-emitter voltage	$-V_{CEO}$	22	32	45	60	80	V
Collector-emitter voltage	$-V_{CES}$	22	32	45	60	80	V
Collector-base voltage	$-V_{CBO}$	22	32	45	60	80	V
Emitter-base voltage	$-V_{EBO}$	5	5	5	5	5	V
Collector current	$-I_C$	4	4	4	4	4	A
Collector peak current ($t < 11$ ms)	$-I_{CM}$	7	7	7	7	7	A
Emitter peak current ($t \leq 10$ ms)	$-I_{EM}$	7	7	7	7	7	A
Base current	$-I_B$	1	1	1	1	1	A
Junction temperature	T_j	150	150	150	150	150	°C
Storage temperature range	T_{stg}	-55 to +150					°C
Total power dissipation ($T_{case} \leq 25$ °C; $V_{CE} \leq 12$ V)	P_{tot}	15	15	15	15	15	W

Junction to ambient air	R_{thJA}	≤ 62,5	≤ 62,5	≤ 62,5	≤ 62,5	≤ 62,5	K/W
Junction to mounting area	R_{thJC}	≤ 8,3	≤ 8,3	≤ 8,3	≤ 8,3	≤ 8,3	K/W

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

	BD 612	BD 614	BD 616	BD 618	BD 620	
Collector-emitter breakdown voltage ($-I_C = 100 \text{ mA}$)	$-V_{(\text{BR})\text{CEO}} > 22$	> 32	> 45	> 60	> 80	V
Collector-emitter breakdown voltage ($-I_C = 100 \mu\text{A}$)	$-V_{(\text{BR})\text{CES}} > 22$	> 32	> 45	> 60	> 80	V
Collector-base breakdown voltage ($-I_C = 100 \mu\text{A}$)	$-V_{(\text{BR})\text{CBC}} > 22$	> 32	> 45	> 60	> 80	V
Emitter-base breakdown voltage ($I_E = 1 \text{ mA}$)	$-V_{(\text{BR})\text{EBO}} > 5$	> 5	> 5	> 5	> 5	V
Collector cutoff current ($-V_{\text{CB}} = 22 \text{ V}$)	$-I_{\text{CBO}} < 100$	—	—	—	—	μA
Collector cutoff current ($-V_{\text{CB}} = 32 \text{ V}$)	$-I_{\text{CBO}}$	< 100	—	—	—	μA
Collector cutoff current ($-V_{\text{CB}} = 45 \text{ V}$)	$-I_{\text{CBO}}$	—	< 100	—	—	μA
Collector cutoff current ($-V_{\text{CB}} = 60 \text{ V}$)	$-I_{\text{CBO}}$	—	—	< 100	—	μA
Collector cutoff current ($-V_{\text{CB}} = 80 \text{ V}$)	$-I_{\text{CBO}}$	—	—	—	< 100	μA
Collector cutoff current ($-V_{\text{CB}} = 10 \text{ V}; T_{\text{amb}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}} < 1$	< 1	< 1	< 1	< 1	mA
Collector cutoff current ($-V_{\text{CB}} = V_{\text{CBmax}}; T_{\text{amb}} = 150^{\circ}\text{C}$)	$-I_{\text{CBO}} < 3$	< 3	< 3	< 3	< 3	mA
Base-emitter forward voltage ($-I_C = 2 \text{ A}; -V_{\text{CE}} = 1 \text{ V}$)	$-V_{\text{BE}} < 1.1$	< 1.1	< 1.2	< 1.5	< 1.5	V
Base-emitter forward voltage ($-I_C = 3 \text{ A}; -V_{\text{CE}} = 1 \text{ V}$)	$-V_{\text{BE}}$	—	< 1.3	< 1.6	< 1.6	V
Collector-emitter saturation voltage ($-I_C = 2 \text{ A}$) ¹⁾	$-V_{\text{CEsat}} < 0.8$	< 0.8	—	—	—	V
Collector-emitter saturation voltage ($-I_C = 2 \text{ A}; -I_B = 0.2 \text{ A}$)	$-V_{\text{CEsat}} < 0.5$	< 0.5	< 0.6	< 0.8	< 0.8	V
Collector-emitter saturation voltage ($-I_C = 3 \text{ A}; -I_B = 0.3 \text{ A}$)	$-V_{\text{CEsat}}$	—	< 0.7	< 0.9	< 0.9	V
DC current gain ($-I_C = 10 \text{ mA}; -V_{\text{CE}} = 5 \text{ V}$)	$h_{\text{FE}} > 40$	> 40	> 30	> 20	> 15	—
($-I_C = 500 \text{ mA}; -V_{\text{CE}} = 1 \text{ V}$) ²⁾	$h_{\text{FE}} > 85$	> 85	> 85	> 40	> 40	—
($-I_C = 2 \text{ A}; -V_{\text{CE}} = 1 \text{ V}$)	$h_{\text{FE}} > 50$	> 50	> 40	> 25	> 15	—

1) For the characteristic which passes through the point $I_C = 2.2 \text{ A}$ and $V_{\text{CE}} = 1 \text{ V}$ at constant base current.2) Available as matching pairs with BD 611, BD 613, BD 615, BD 617, and BD 619. Condition for matching pairs $h_{\text{FE1}}/h_{\text{FE2}} \leq 1.41$.

25C D ■ 8235605 0004385 3 ■ SIEG T-33-17
25C 04385 D

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BD 612
BD 614
BD 616
BD 618
BD 620

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

	BD 612	BD 614	BD 616	BD 618	BD 620	
Transition frequency ($-I_C = 0.25\text{ A}$; $-V_{CE} = 1\text{ V}$; $f = 1\text{ MHz}$)						
f_T	>3	>3	>3	>3	>3	MHz
Cutoff frequency in common emitter configuration ($-I_C = 0.25\text{ A}$; $-V_{CE} = 1\text{ V}$)						
f_{hfe}	>20	>20	>20	>20	>20	kHz

BD 612
BD 614
BD 616
BD 618
BD 620

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