

NPN Silicon Planar Darlington Transistors

BD 875

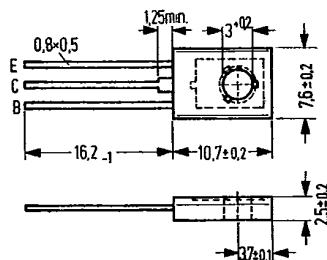
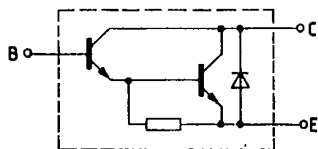
BD 877

BD 879

SIEMENS AKTIENGESELLSCHAFT 21 D

BD 875, BD 877, and BD 879 are epitaxial NPN silicon planar darlington transistors in TO 126 plastic package (12 A 3 DIN 41869, sheet 4). These darlington transistors are designed for relay drivers as well as for general AF applications. BD 876, BD 878, and BD 880 are provided as complementary transistors.

Type	Ordering code
BD 875	Q62702-D902
BD 877	Q62702-D903
BD 879	Q62702-D904
Spring washer	
A 3 DIN 137	Q62902-B63
Mica washer	Q62902-B62



Approx. weight 0.5 g Dimensions in mm

Transistor fixing with M 3 screw; starting torque max. 0.8 Nm; washer or spring washer should be used.

Maximum ratings ($T_{amb} = 25^\circ\text{C}$)

Collector-emitter voltage
Collector-base voltage
Emitter-base voltage
Collector current
Collector peak current
Base current
Junction temperature
Storage temperature range
Total power dissipation
($T_{amb} \leq 25^\circ\text{C}$)
($T_{case} \leq 60^\circ\text{C}$)

	BD 875	BD 877	BD 879	
V_{CEO}	45	60	80	V
V_{CBO}	60	80	100	V
V_{EBO}	5	5	5	V
I_C	1	1	1	A
I_{CM}	2	2	2	A
I_B	0.1	0.1	0.1	A
T_j	150	150	150	$^\circ\text{C}$
T_{stg}	-65 to +150			$^\circ\text{C}$
P_{tot}	1.25	1.25	1.25	W
P_{tot}	9	9	9	W

Thermal resistance

Junction to ambient air
Junction to case

R_{thJA}	<100	<100	<100	K/W
R_{thJC}	<10	<10	<10	K/W

SIEMENS AKTIENGESELLSCHAFT

Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)		BD 875	BD 877	BD 879	
Collector cutoff current ($V_{CB} = V_{CBmax}$)	I_{CBO}	<100	<100	<100	nA
Collector cutoff current ($V_{CE} = 0.5 V_{CEmax}$)	I_{CEO}	<500	<500	<500	nA
Emitter cutoff current ($V_{EB} = 4 \text{ V}$)	I_{EBO}	<100	<100	<100	nA
Collector-emitter breakdown voltage ($I_C = 50 \text{ mA}$)	$V_{(BR)CEO}$	>45	>60	>80	V
Collector-base breakdown voltage ($I_C = 100 \mu\text{A}$)	$V_{(BR)CBO}$	>60	>80	>100	V
Emitter-base breakdown voltage ($I_E = 100 \mu\text{A}$)	$V_{(BR)EBO}$	>5	>5	>5	V
DC current gain ($I_C = 150 \text{ mA}$; $V_{CE} = 10 \text{ V}$)	h_{FE}	>1000	>1000	>1000	-
($I_C = 0.5 \text{ A}$; $V_{CE} = 10 \text{ V}$)	h_{FE}	>2000	>2000	>2000	-
Collector-emitter saturation voltage ($I_C = 0.5 \text{ A}$; $I_B = 0.5 \text{ mA}$)	V_{CEsat}	<1.3	<1.3	<1.3	V
($I_C = 1 \text{ A}$; $I_B = 1 \text{ mA}$)	V_{CEsat}	<1.8	<1.8	<1.8	V
Base-emitter saturation voltage ($I_C = 1 \text{ A}$; $I_B = 1 \text{ mA}$)	V_{BEsat}	<2.2	<2.2	<2.2	V

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

Transition frequency ($I_C = 0.5 \text{ A}$; $V_{CE} = 5 \text{ V}$; $f = 35 \text{ MHz}$) f_T	200	200	200	MHz
---	-----	-----	-----	-----

PNP Silicon Planar Darlington Transistors

BD 876

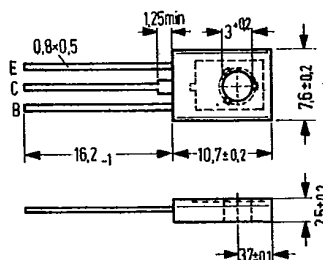
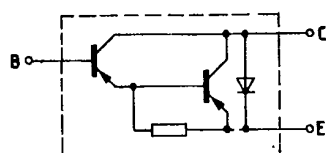
BD 878

BD 880

SIEMENS AKTIENGESELLSCHAFT 23 D

BD 876, BD 878, and BD 880 are epitaxial PNP silicon planar darlington transistors in TO 126 plastic package (12 A 3 DIN 41 869, sheet 4). These darlington transistors are designed for relay drivers as well as for general AF applications. BD 875, BD 877, and BD 879 are provided as complementary transistors.

Type	Ordering code
BD 876	Q62702-D908
BD 878	Q62702-D907
BD 880	Q62702-D906
Spring washer	
A 3 DIN 137	Q62902-B63
Mica washer	Q62902-B62



Approx. weight 0.5 g. Dimensions in mm
Transistor fixing with M 3 screw; starting torque max. 0.8 Nm; washer or spring washer should be used.

Maximum ratings ($T_{amb} = 25^\circ\text{C}$)

Collector-emitter voltage
Collector-base voltage
Emitter-base voltage
Collector current
Collector peak current
Base current
Junction temperature
Storage temperature range
Total power dissipation
($T_{amb} \leq 25^\circ\text{C}$)
($T_{case} \leq 60^\circ\text{C}$)

	BD 876	BD 878	BD 880	
$-V_{CEO}$	45	60	80	V
$-V_{CBO}$	60	80	100	V
$-V_{EBO}$	5	5	5	V
$-I_C$	1	1	1	A
$-I_{CM}$	2	2	2	A
$-I_B$	0.1	0.1	0.1	A
T_j	150	150	150	$^\circ\text{C}$
T_{stg}	-65 to +150			$^\circ\text{C}$
P_{tot}	1.25	1.25	1.25	W
P_{tot}	9	9	9	W

Thermal resistance

Junction to ambient air
Junction to case

R_{thJA}	<100	<100	<100	K/W
R_{thJC}	<10	<10	<10	K/W

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

		BD 876	BD 878	BD 880	
Collector cutoff current ($V_{CB} = V_{CBmax}$)	$-I_{CBO}$	<100	<100	<100	nA
Collector cutoff current ($V_{CE} = 0.5 V_{CEmax}$)	$-I_{CEO}$	<500	<500	<500	nA
Emitter cutoff current ($-V_{EB} = 4 \text{ V}$)	$-I_{EBO}$	<100	<100	<100	nA
Collector-emitter breakdown voltage ($-I_C = 50 \text{ mA}$)	$-V_{(BR)CEO}$	>45	>60	>80	V
Collector-base breakdown voltage ($-I_C = 100 \mu\text{A}$)	$-V_{(BR)CBO}$	>60	>80	>100	V
Emitter-base breakdown voltage ($I_E = 100 \mu\text{A}$)	$-V_{(BR)EBO}$	>5	>5	>5	V
DC current gain ($-I_C = 150 \text{ mA}$; $-V_{CE} = 10 \text{ V}$)	h_{FE}	>1000	>1000	>1000	—
($-I_C = 0.5 \text{ A}$; $-V_{CE} = 10 \text{ V}$)	h_{FE}	>2000	>2000	>2000	—
Collector-emitter saturation voltage ($-I_C = 0.5 \text{ A}$; $-I_B = 0.5 \text{ mA}$)	$-V_{CEsat}$	<1.3	<1.3	<1.3	V
($-I_C = 1 \text{ A}$; $-I_B = 1 \text{ mA}$)	$-V_{CEsat}$	<1.8	<1.8	<1.8	V
Base-emitter saturation voltage ($-I_C = 1 \text{ A}$; $-I_B = 1 \text{ mA}$)	$-V_{BEsat}$	<2.2	<2.2	<2.2	V

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

Transition frequency ($-I_C = 0.5 \text{ A}$; $-V_{CE} = 5 \text{ V}$; $f = 35 \text{ MHz}$)	f_T	200	200	200	MHz
---	-------	-----	-----	-----	-----

NPN Silicon Darlington Transistors

BD 975

BD 977

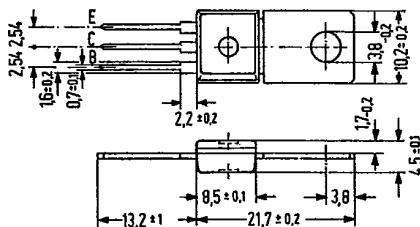
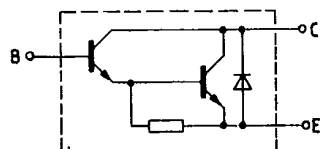
BD 979

SIEMENS AKTIENGESELLSCHAFT 425 D

BD 975, BD 977, and BD 979 are epitaxial NPN silicon planar darlington transistors in plastic package similar to TO 202. These darlington transistors are designed for relay drivers as well as for general AF applications.

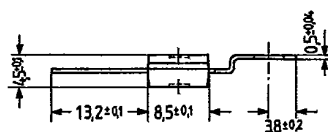
BD 976, BD 978, and BD 980 are provided as complementary transistors.

Type	Ordering code
BD 975	Q62702-D962
BD 977	Q62702-D964
BD 979	Q62702-D966



Approx. weight 16 g.

Dimensions in mm



Available upon request also with bent fixing plate.

Maximum ratings

Collector-emitter voltage
Collector-base voltage
Emitter-base voltage
Collector current
Collector peak current
Base current
Storage temperature range
Junction temperature
Total power dissipation
($T_{amb} = 25^\circ\text{C}$)
($T_{case} = 60^\circ\text{C}$)

	BD 975	BD 977	BD 979	
V_{CEO}	45	60	80	V
V_{CBO}	60	80	100	V
V_{EBO}	5	5	5	V
I_C	1	1	1	A
I_{CM}	2	2	2	A
I_B	0.1	0.1	0.1	A
T_{stg}	-65 to +150			$^\circ\text{C}$
T_j	150	150	150	$^\circ\text{C}$
P_{tot}	1.6	1.6	1.6	W
P_{tot}	3.6	3.6	3.6	W

Thermal resistance

Junction to ambient air
Junction to case

R_{thJA}	78	78	78	K/W
R_{thJC}	25	25	25	K/W

SIEMENS AKTIENGESELLSCHAFT

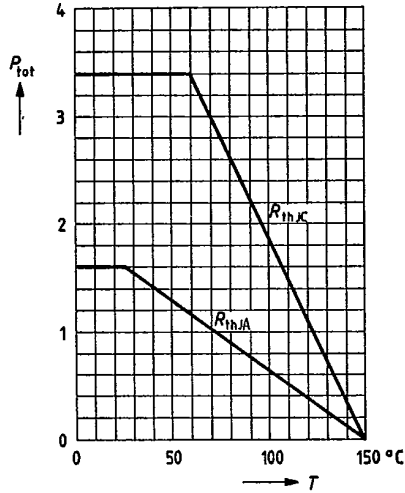
Static characteristics ($T_{amb} = 25^{\circ}\text{C}$)

		BD 975	BD 977	BD 979	
Collector cutoff current ($V_{CBO} = V_{CBmax}$)	I_{CBO}	<100	<100	<100	nA
Collector cutoff current ($V_{CEO} = 0.5 V_{CEmax}$)	I_{CEO}	<500	<500	<500	nA
Emitter cutoff current ($V_{EBO} = 4 \text{ V}$)	I_{EBO}	<100	<100	<100	nA
Collector-emitter breakdown voltage ($I_C = 50 \text{ mA}$)	$V_{(BR)CEO}$	>45	>60	>80	V
Collector-base breakdown voltage ($I_C = 100 \mu\text{A}$)	$V_{(BR)CBO}$	>60	>80	>100	V
Emitter-base breakdown voltage ($I_E = 100 \mu\text{A}$)	$V_{(BR)EBO}$	>5	>5	>5	V
DC current gain ($I_C = 150 \text{ mA}$; $V_{CE} = 10 \text{ V}$)	h_{FE}	>1000	>1000	>1000	—
($I_C = 0.5 \text{ A}$; $V_{CE} = 10 \text{ V}$)	h_{FE}	>2000	>2000	>2000	—
Collector-emitter saturation voltage ($I_C = 0.5 \text{ A}$; $I_B = 0.5 \text{ mA}$)	V_{CEsat}	<1.3	<1.3	<1.3	V
($I_C = 1 \text{ A}$; $I_B = 1 \text{ mA}$)	V_{CEsat}	<1.8	<1.8	<1.8	V
Base-emitter saturation voltage ($I_C = 1 \text{ A}$; $I_B = 1 \text{ mA}$)	V_{BEsat}	<2.2	<2.2	<2.2	V

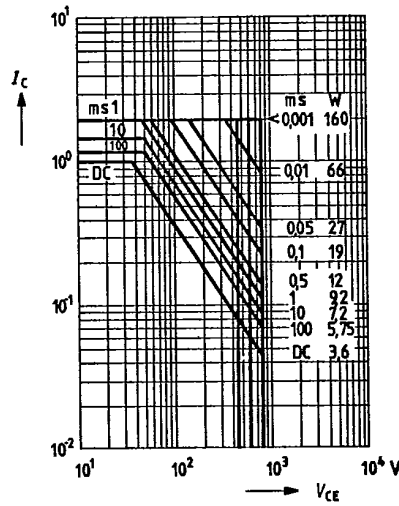
Dynamic characteristics ($T_{amb} = 25^{\circ}\text{C}$)

Transition frequency ($I_C = 0.5 \text{ A}$; $V_{CE} = 5 \text{ V}$; $f = 35 \text{ MHz}$) f_T	200	200	200	MHz
---	-----	-----	-----	-----

Total perm. power dissipation
versus temperature
 $P_{\text{tot}} = f(T)$

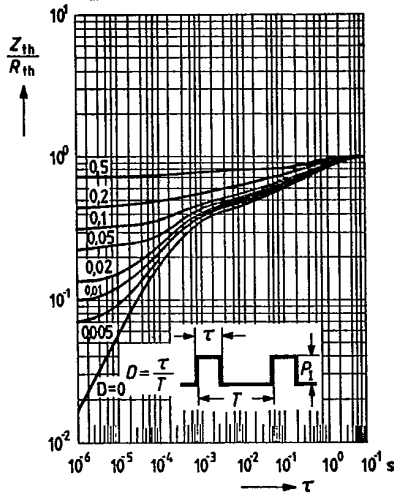


Permissible operating range
 $I_C = f(V_{CE}); T_{\text{case}} \leq 100^\circ\text{C}; D = 0$



Permissible power dissipation

$$\frac{Z_{th}}{R_{th}} = f(\tau)$$



DC current gain $h_{FE} = f(T_{\text{amb}})$
 $V_{CE} = 10\text{ V}; I_C = \text{parameter}$

