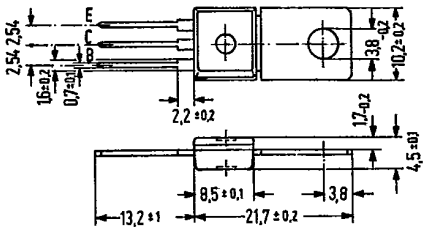
PNP Silicon Darlington Transistors

BD 862
BD 864
BD 866

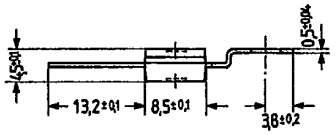
Epibase power darlington transistors (15 W)

BD 862, BD 864, and BD 866 are monolithic silicon PNP epibase power darlington transistors with diode and resistors in a plastic package similar to TO 202. The collectors of the two transistors are electrically connected to the metallic mounting area. These darlington transistors for AF applications are outstanding for a particularly high current gain. Together with BD 861, BD 863, and BD 865, they are especially useful as complementary AF push-pull output stages for color TV correction stages.

Type	Ordering code
BD 862	Q62702-D957
BD 864	Q62702-D959
BD 866	Q62702-D961



Approx. weight 15 g. Dimensions in mm



Available upon request also with bent fixing plate.

Maximum ratings		BD 862	BD 864	BD 866	
Collector-emitter voltage	$-V_{CEO}$	45	60	80	V
Collector-base voltage	$-V_{CBO}$	45	60	80	V
Base-emitter voltage	$-V_{EBO}$	5	5	5	V
Collector current	$-I_C$	4	4	4	A
Collector peak current ($t \leq 1$ ms)	$-I_{CM}$	7	7	7	A
Base current	$-I_B$	0.1	0.1	0.1	A
Storage temperature range	T_{stg}		−55 to +150		°C
Junction temperature	T_j	150	150	150	°C
Total power dissipation ($T_{case} \leq 25$ °C)	P_{tot}	15	15	15	W
Thermal resistance					
Junction to ambient air	R_{thJA}	62.5	62.5	62.5	K/W
Junction to case	R_{thJC}	8.3	8.3	8.3	K/W

Static characteristics (T_{amb} = 25 °C)		BD 862	BD 864	BD 866	
Collector cutoff current					
($V_{CB} = V_{CBmax}$)	$-I_{CBO}$	<0.2	<0.2	<0.2	mA
($V_{BC} = V_{CBmax}$, T_{amb} = 100 °C)	$-I_{CBO}$	<2	<2	<2	mA
Collector cutoff current					
($-V_{CE}$ = 0.5 V_{CEmax})	$-I_{CEO}$	<0.5	<0.5	<0.5	mA
Emitter cutoff current					
($-V_{EBO}$ = 5 V)	$-I_{EBO}$	<5	<5	<5	mA
Collector-emitter breakdown					
voltage ($-I_C$ = 100 mA)	$-V_{(BR)CEO}$	>45	>60	>80	V
Collector-base breakdown					
voltage ($-I_C$ = 1 mA)	$-V_{(BR)CBO}$	>45	>60	>80	V
Emitter-base breakdown					
voltage (I_E = 5 mA)	$-V_{(BR)EBO}$	>5	>5	>5	V
DC current gain					
($-I_C$ = 50 mA; $-V_{CE}$ = 3 V)	h_{FE}	750	750	750	–
($-I_C$ = 1.5 A; $-V_{CE}$ = 3 V)	h_{FE}	>750	>750 (3000)	>750 (3000)	–
($-I_C$ = 4 A; $-V_{CE}$ = 3 V)	h_{FE}	1000	1000	1000	–
Base-emitter forward voltage					
($-I_C$ = 1.5 A; $-V_{CE}$ = 3 V)	$-V_{BE}$	<2.5	<2.5	<2.5	V
Collector-emitter saturation voltage					
($-I_C$ = 1.5 A; $-I_B$ = 30 mA)	$-V_{CEsat}$	<2.5	<2.5	<2.5	V
Forward voltage of the protective					
diode at I_F = 3 A	V_F	1.8	1.8	1.8	V

Dynamic characteristics (T_{amb} = 25 °C)					
Transition frequency					
($-I_C$ = 1.5 A; $-V_{CE}$ = 3 V; f = 1 MHz)	f_T	7 (>1)	7 (>1)	7 (>1)	MHz
Cutoff frequency in common					
emitter configuration					
($-I_C$ = 1.5 A; $-V_{CE}$ = 3 V)	f_{hfe}	60	60	60	kHz

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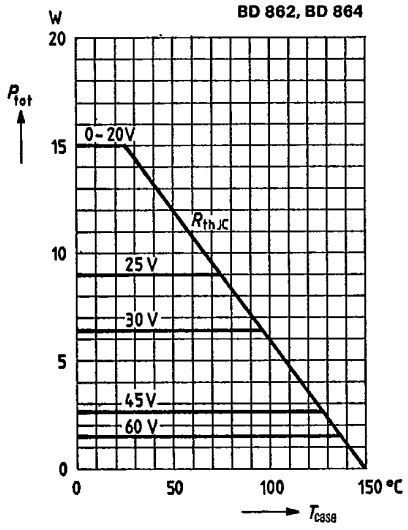
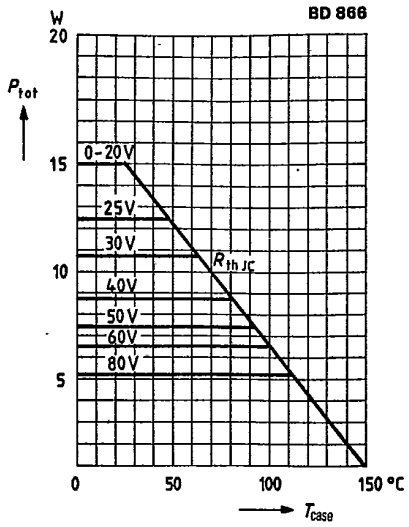
Total perm. power dissipation versus temperature
$P_{tot} = f(T_{case})$; V_{CE} = parameter

BD 862, BD 864



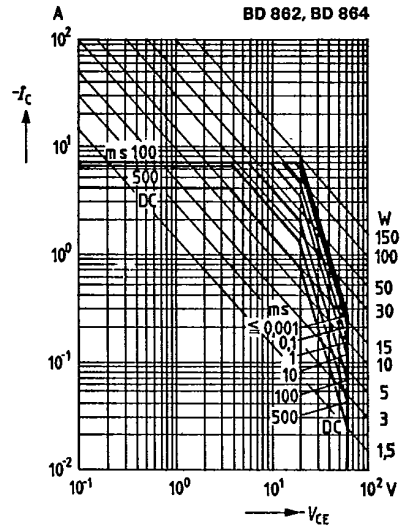
Total perm. power dissipation versus temperature
$P_{tot} = f(T_{case})$; V_{CE} = parameter

BD 866



Permissible operating range
$I_C = f(V_{CE})$; $T_{case} \leq 25$ °C; D = 0.01

BD 862, BD 864



Permissible operating range
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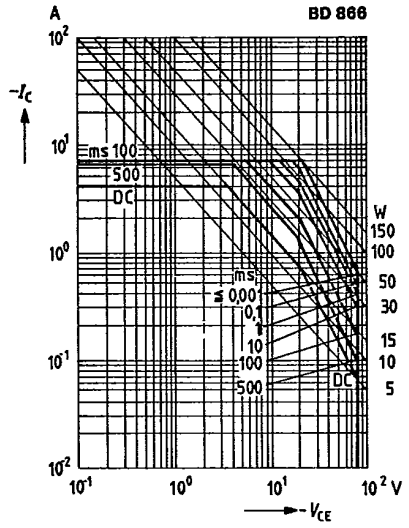
BD 866



Permissible pulse load

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