

Silicon PNP Power Transistors

BD646/648/650/652

DESCRIPTION

- With TO-220C package
- Complement to type BD645/647/649/651
- DARLINGTON

APPLICATIONS

- For use in output stages in audio equipment ,general amplifier,and analogue switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

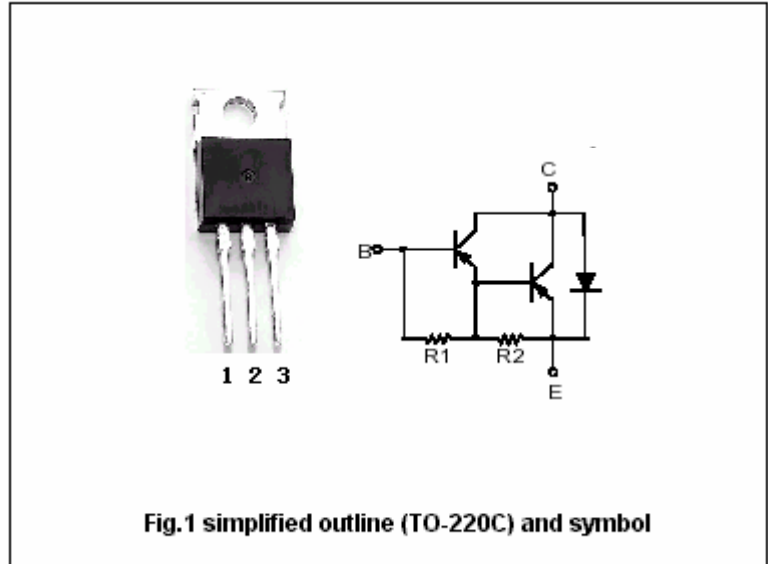


Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BD646	-80	V
		BD648	-100	
		BD650	-120	
		BD652	-140	
V_{CEO}	Collector-emitter voltage	BD646	-60	V
		BD648	-80	
		BD650	-100	
		BD652	-120	
V_{EBO}	Emitter-base voltage	Open collector	-5	V
I_C	Collector current-DC		-8	A
I_{CM}	Collector current-Pulse		-12	A
I_B	Base current		-150	mA
P_C	Collector power dissipation	$T_C=25^\circ\text{C}$	62.5	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-65~150	$^\circ\text{C}$

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CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	BD646	I _C =-30mA, I _B =0	-60			V
		BD648		-80			
		BD650		-100			
		BD652		-120			
V _{CEsat-1}	Collector-emitter saturation voltage		I _C =-3A, I _B =-12mA			-2.0	V
V _{CEsat-2}	Collector-emitter saturation voltage		I _C =-5A, I _B =-50mA			-2.5	V
V _{BEsat}	Base-emitter saturation voltage		I _C =-5A, I _B =-50mA			-3.0	V
V _{BE}	Base-emitter on voltage		I _C =-3A; V _{CE} =-3V			-2.5	V
I _{CBO}	Collector cut-off current	BD646	V _{CB} =-60V, I _E =0 V _{CB} =-40V, I _E =0; T _C =150 °C	-0.2		-2.0	mA
		BD648		-0.2	-2.0		
		BD650		-0.2	-2.0		
		BD652		-0.2	-2.0		
I _{CEO}	Collector cut-off current	BD646	V _{CE} =-30V, I _B =0			-0.5	mA
		BD648		V _{CE} =-40V, I _B =0			
		BD650		V _{CE} =-50V, I _B =0			
		BD652		V _{CE} =-60V, I _B =0			
I _{EBO}	Emitter cut-off current		V _{EB} =-5V; I _C =0			-5	mA
h _{FE}	DC current gain		I _C =-3A; V _{CE} =-3V	750			

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to case	2.0	°C/W

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PACKAGE OUTLINE

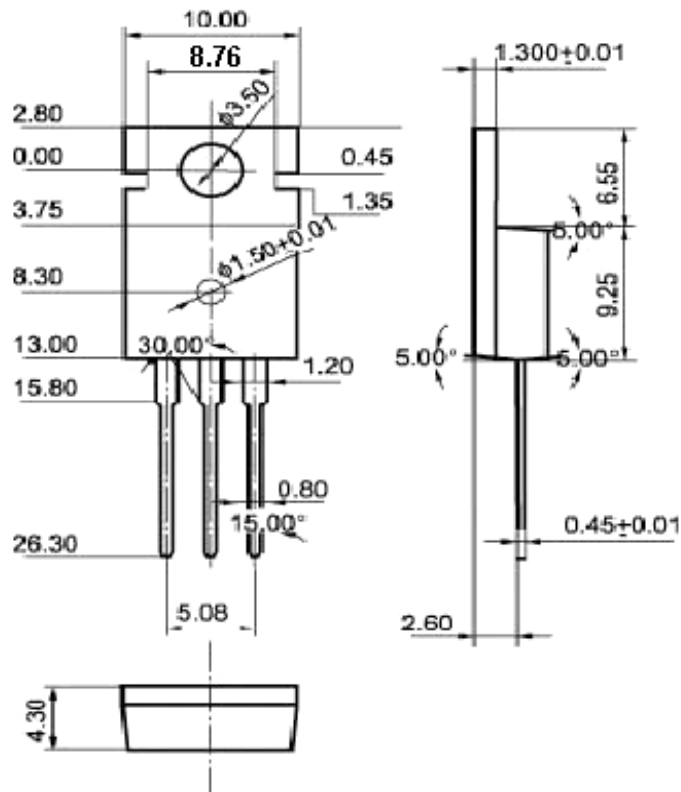


Fig.2 Outline dimensions