

Silicon NPN Power Transistors

BD645/647/649/651

DESCRIPTION

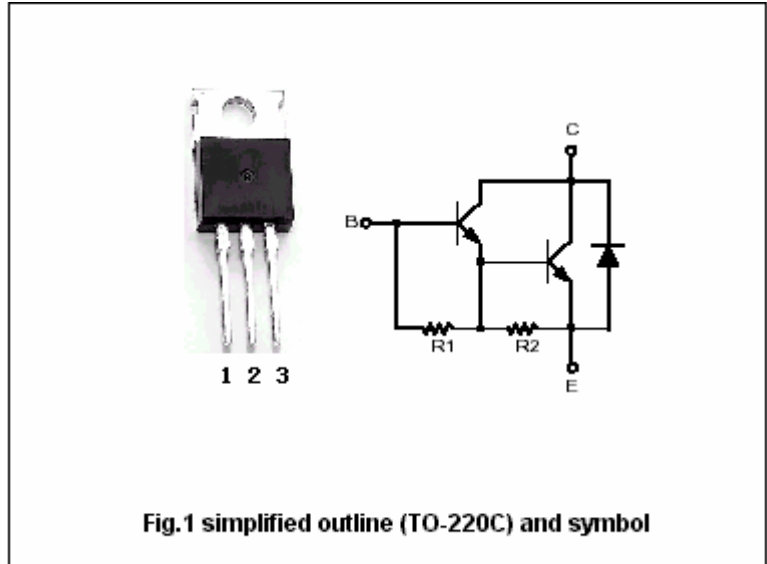
- With TO-220C package
- Complement to type BD646/648/650/652
- DARLINGTON

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

Absolute maximum ratings($T_a=25^\circ$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BD645	80	V
		BD647	100	
		BD649	120	
		BD651	140	
V_{CEO}	Collector-emitter voltage	BD645	60	V
		BD647	80	
		BD649	100	
		BD651	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		0.3	mA
P_C	Collector power dissipation	$T_C=25^\circ$	62.5	W
T_j	Junction temperature		150	$^\circ$
T_{stg}	Storage temperature		-65~150	$^\circ$

Silicon NPN Power Transistors

BD645/647/649/651

CHARACTERISTICS

T_j=25 °C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	BD645	I _C =30mA, I _B =0	60			V
		BD647		80			
		BD649		100			
		BD651		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	BD645	V _{CB} =60V, I _E =0 V _{CB} =40V, I _E =0; T _C =150 °C			0.2 2.0	mA
		BD647	V _{CB} =80V, I _E =0 V _{CB} =50V, I _E =0; T _C =150 °C			0.2 2.0	
		BD649	V _{CB} =100V, I _E =0 V _{CB} =60V, I _E =0; T _C =150 °C			0.2 2.0	
		BD651	V _{CB} =120V, I _E =0 V _{CB} =70V, I _E =0; T _C =150 °C			0.2 2.0	
I _{CEO}	Collector cut-off current	BD645	V _{CE} =30V, I _B =0			0.5	mA
		BD647	V _{CE} =40V, I _B =0				
		BD649	V _{CE} =50V, I _B =0				
		BD651	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

Silicon NPN Power Transistors

BD645/647/649/651

PACKAGE OUTLINE

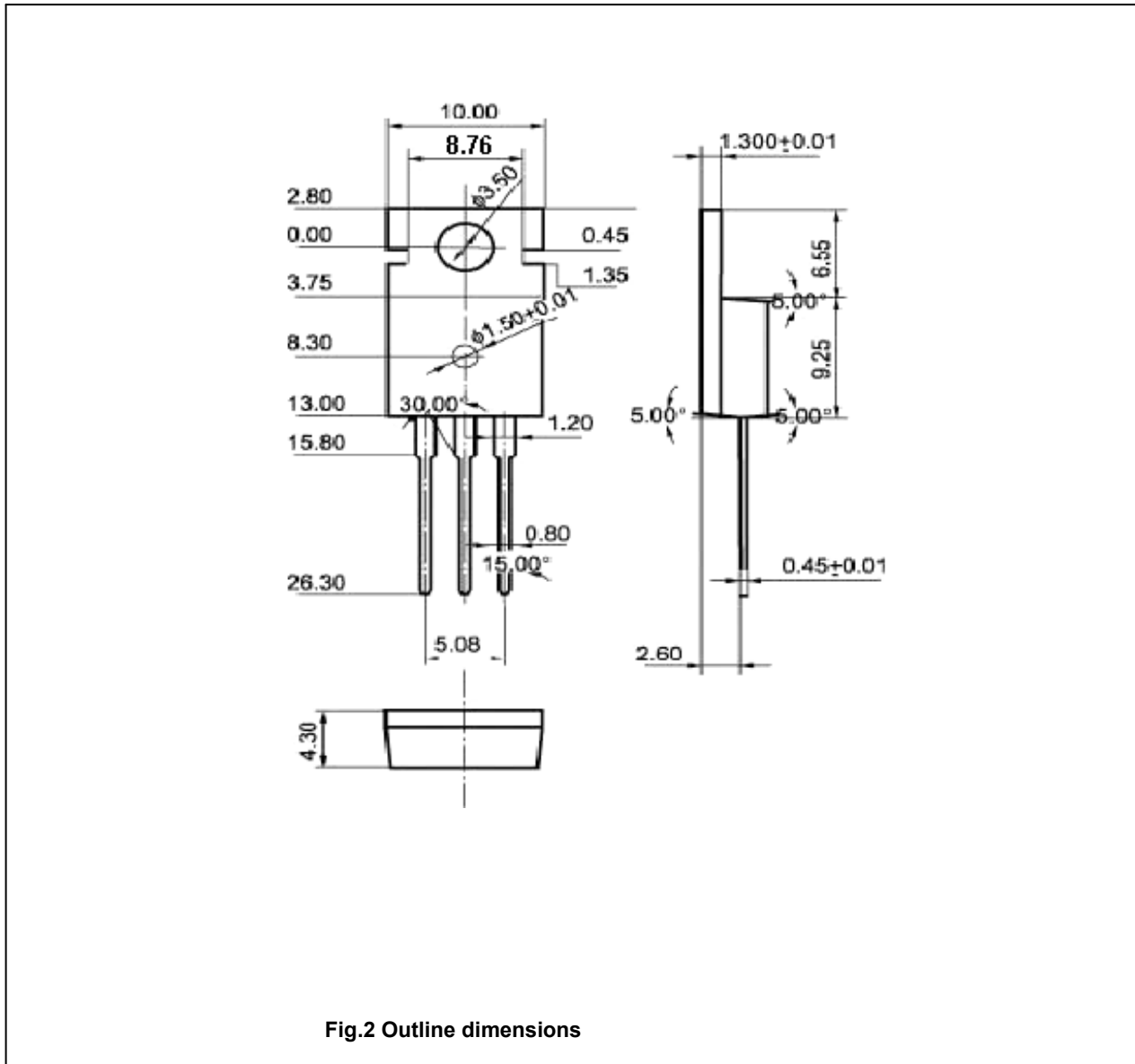


Fig.2 Outline dimensions

Silicon NPN Power Transistors

BD645/647/649/651

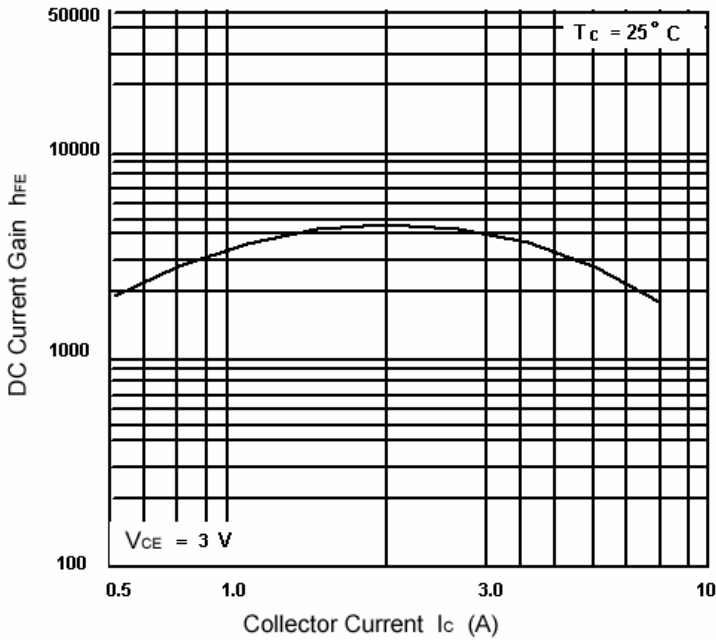


Fig.3 DC current Gain

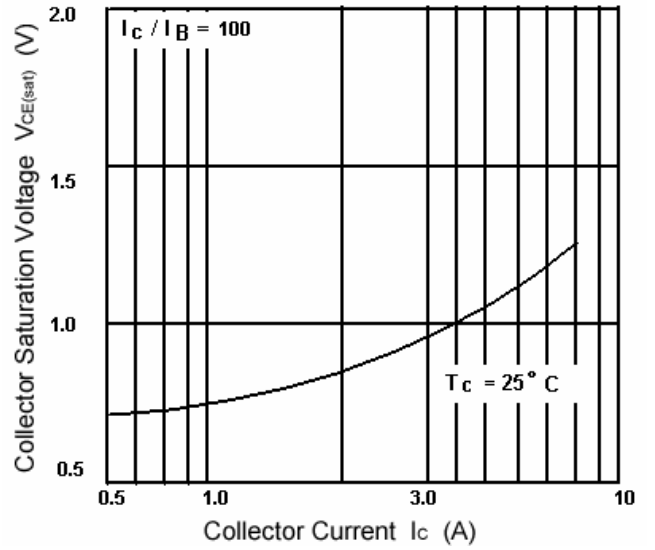


Fig.4 Collector-Emitter Saturation Voltage

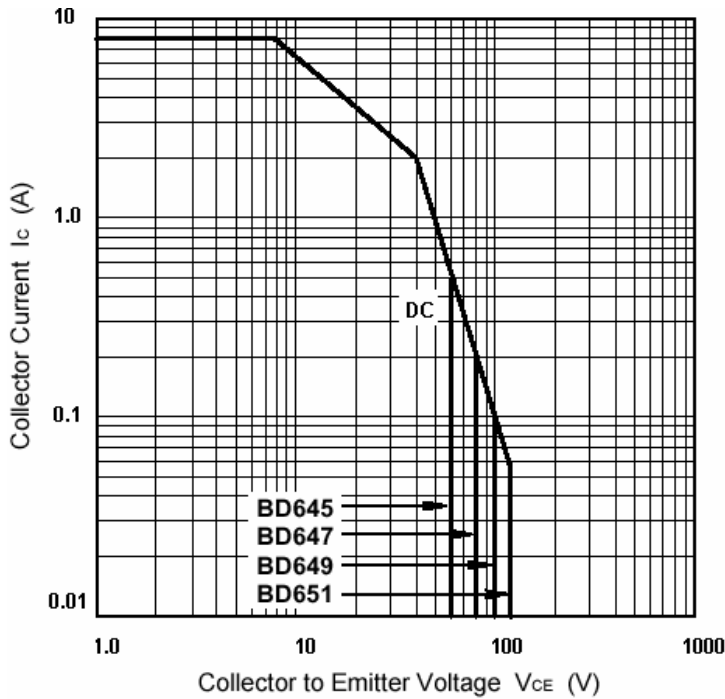


Fig.5 Safe Operating Area

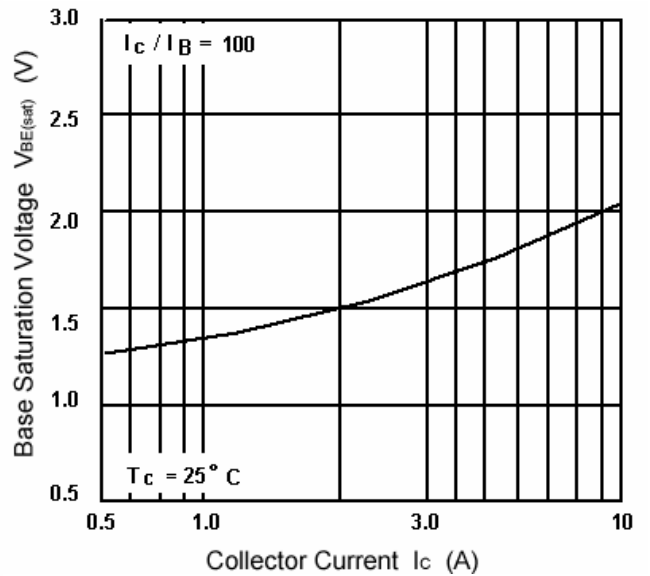


Fig.6 Base-Emitter Saturation Voltage