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

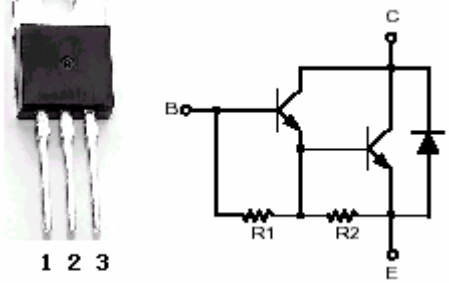

Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BD645	Open emitter	80	V
		BD647		100	
		BD649		120	
		BD651		140	
V_{CEO}	Collector-emitter voltage	BD645	Open base	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□	62.5	W
T_j	Junction temperature			150	□
T_{stg}	Storage temperature			-65~150	□

CHARACTERISTICS

Tj=25□ 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□			0.2 2.0	mA
		BD647	V_{CB}=80V, I_E=0 V_{CB}=50V, I_E=0 ;T_C=150□			0.2 2.0	
		BD649	V_{CB}=100V, I_E=0 V_{CB}=60V, I_E=0 ;T_C=150□			0.2 2.0	
		BD651	V_{CB}=120V, I_E=0 V_{CB}=70V, I_E=0 ;T_C=150□			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
$R_{th\ j\text{-}c}$	Thermal resistance junction to case	2.0	□/W

PACKAGE OUTLINE

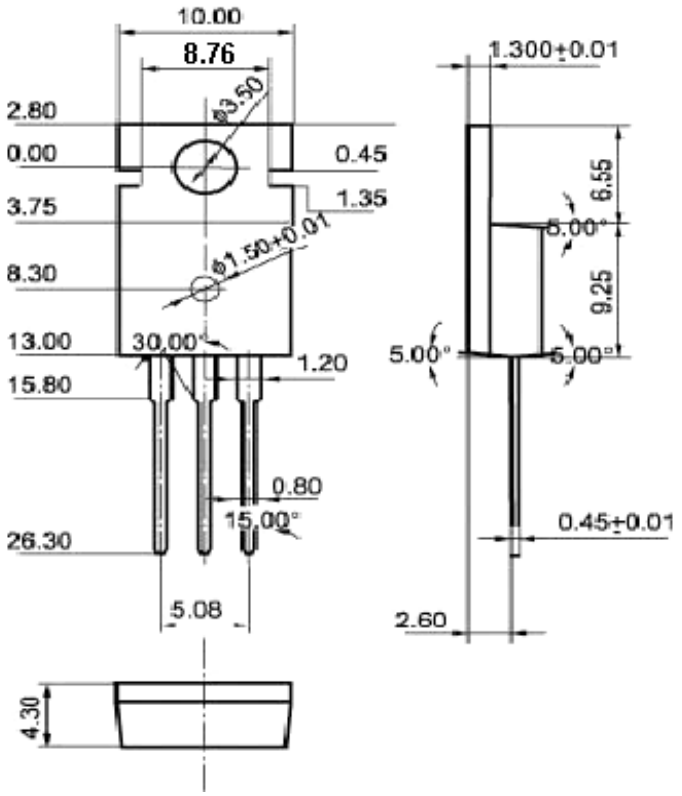

Fig.2 Outline dimensions

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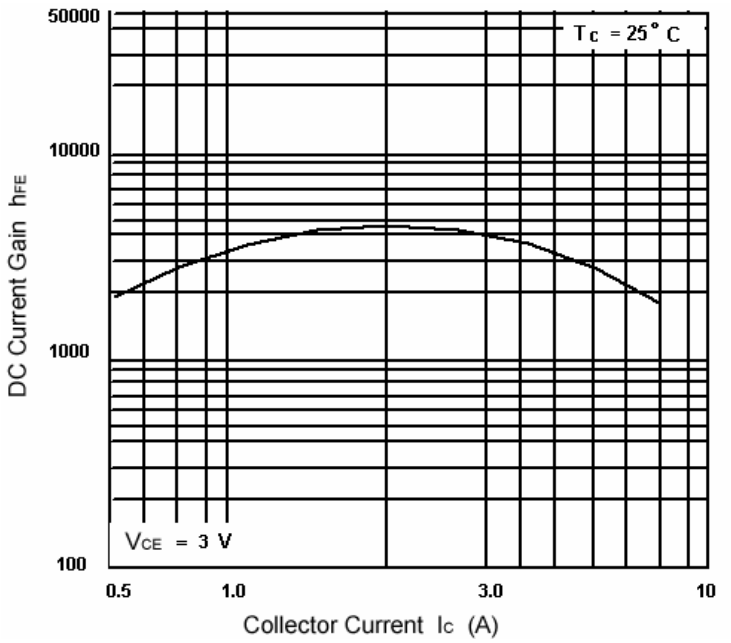

Fig.3 DC current Gain

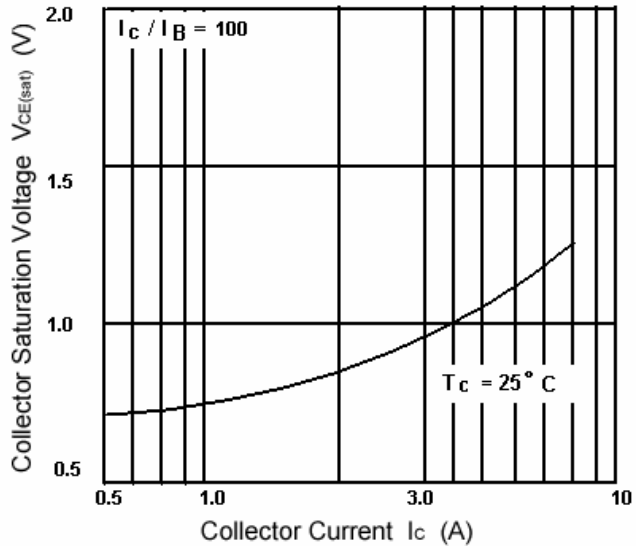

Fig.4 Collector-Emitter Saturation Voltage

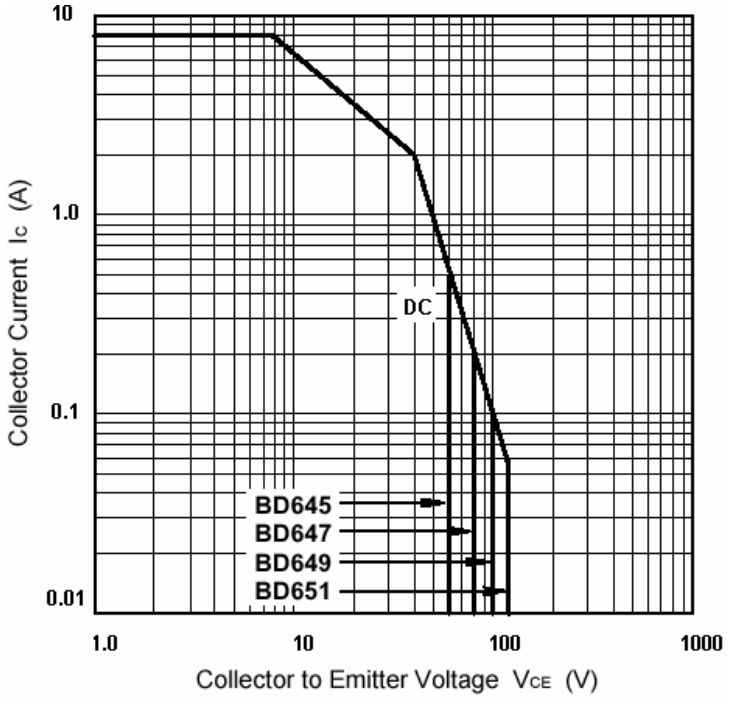

Fig.5 Safe Operating Area

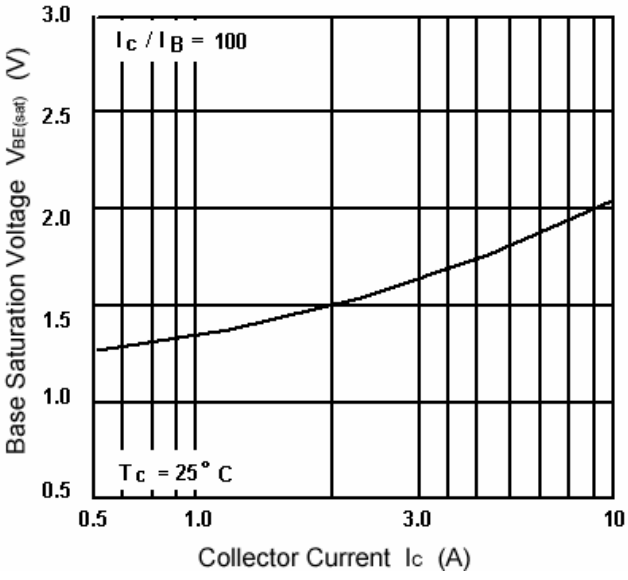

Fig.6 Base-Emitter Saturation Voltage