

Silicon NPN Power Transistors

BD743/A/B/C

DESCRIPTION

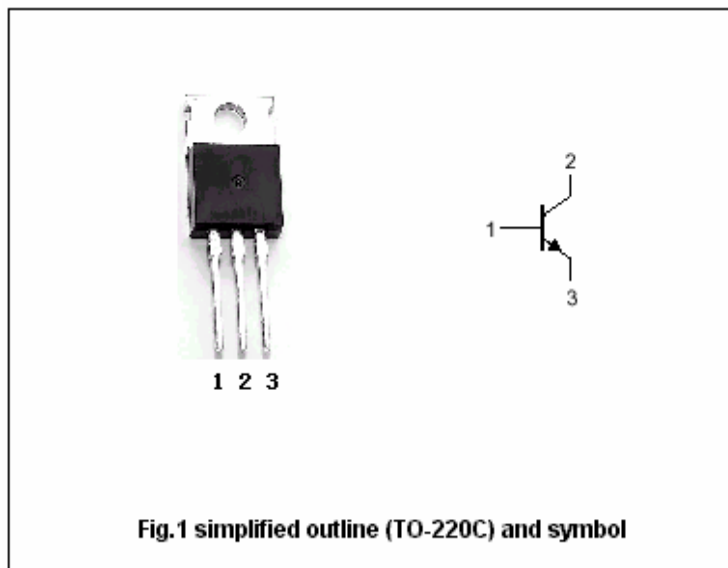
- With TO-220C package
- Complement to type BD744/A/B/C
- High current capability
- High power dissipation

APPLICATIONS

- For use in power linear and switching applications

PINNING

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

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

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BD743	Open emitter	50	V
		BD743A		70	
		BD743B		90	
		BD743C		110	
V_{CEO}	Collector-emitter voltage	BD743	Open base	45	V
		BD743A		60	
		BD743B		80	
		BD743C		100	
V_{EBO}	Emitter-base voltage		Open collector	5	V
I_C	Collector current			15	A
I_{CM}	Collector current-peak			20	A
I_B	Base current			5	A
P_C	Collector power dissipation		$T_C=25^\circ\text{C}$	90	W
			$T_a=25^\circ\text{C}$	2	
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℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	BD743	I _C =30mA; I _B =0	45			V
		BD743A		60			
		BD743B		80			
		BD743C		100			
V _{CEsat-1}	Collector-emitter saturation voltage		I _C =5 A; I _B =0.5 A			1.0	V
V _{CEsat-2}	Collector-emitter saturation voltage		I _C =15 A; I _B =5 A			3.0	V
V _{BE-1}	Base-emitter on voltage		I _C =5A ; V _{CE} =4V			1.0	V
V _{BE-2}	Base-emitter on voltage		I _C =15A ; V _{CE} =4V			3.0	V
I _{CEO}	Collector cut-off current	BD743/A	V _{CE} =30V; I _B =0			0.1	mA
		BD743B/C	V _{CE} =60V; I _B =0				
I _{CBO}	Collector cut-off current	BD743	V _{CE} =50V; V _{BE} =0 T _C =125℃			0.1 5.0	mA
		BD743A	V _{CE} =70V; V _{BE} =0 T _C =125℃			0.1 5.0	
		BD743B	V _{CE} =90V; V _{BE} =0 T _C =125℃			0.1 5.0	
		BD743C	V _{CE} =110V; V _{BE} =0 T _C =125℃			0.1 5.0	
I _{EBO}	Emitter cut-off current		V _{EB} =5V; I _C =0			0.5	mA
h _{FE-1}	DC current gain		I _C =1A ; V _{CE} =4V	40			
h _{FE-2}	DC current gain		I _C =5A ; V _{CE} =4V	20		150	
h _{FE-3}	DC current gain		I _C =15A ; V _{CE} =4V	5			

Switching times resistive load

t _d	Delay time	I _C =5 A; I _{B1} =-I _{B2} =0.5 A V _{BE(off)} =-4.2V; R _L =6Ω t _p =20μs		0.02		μs
t _r	Rise time			0.35		μs
t _s	Storage time			0.5		μs
t _f	Fall time			0.4		μs

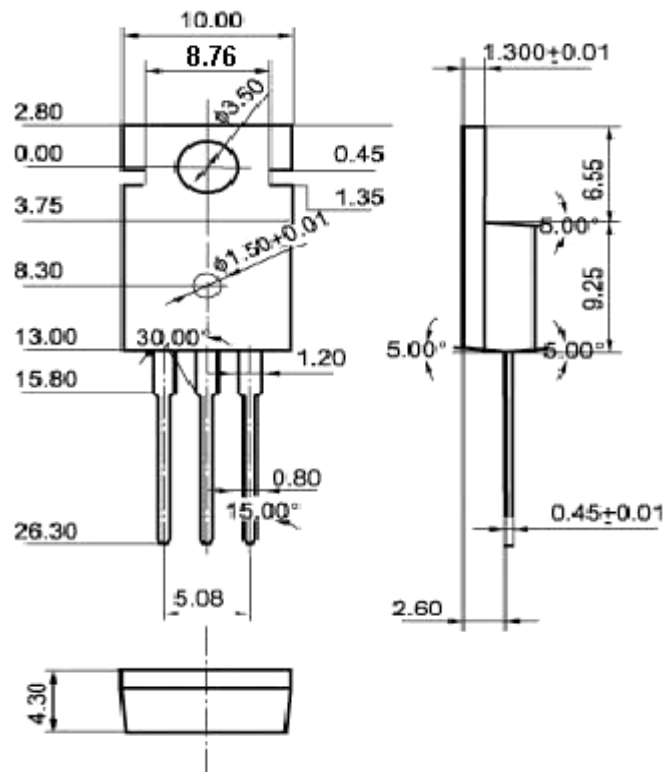
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to case	1.40	℃/W

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PACKAGE OUTLINE

Fig.2 Outline dimensions (unindicated tolerance: ± 0.10 mm)