BD181 – BD182 – BD183

NPN SILICON TRANSISTOR
POWER LINERAR AND SWITCHING APPLICATIONS

BD181, BD182 and BD183 are silicon NPN transistors intended for a wide variety of high power applications. Typical applications include power switching circuits, audio amplifiers, solenoid drivers, and series and shunt regulators.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CBO}	Collector-Base Voltage		**BD181**	55	V
			BD182	70	
			BD183	85	
V_{CEO}	Collector-EmitterVoltage		**BD181**	45	V
			BD182	60	
			BD183	80	
V_{CER}	Collector-EmitterVoltage	R_{BE}=100 Ω	**BD181**	55	V
			BD182	70	
			BD183	85	
V_{CEX}	Collector-EmitterVoltage	V_{BE}=-1.5 V	**BD181**	55	V
			BD182	70	
			BD183	85	
V_{EBO}	Emitter-Base Voltage		**BD181**	7.0	V
			BD182		
			BD183		
I_C	Collector Current		**BD181**	15	A
			BD182		
			BD183		
I_B	Base Current		**BD181**	7.0	A
			BD182		
			BD183		
P_T	Power Dissipation	@ T_C < 25°	**BD181**	150	Watts
			BD182		
			BD183		

BD181 – BD182 – BD183

Symbol	Ratings		Value	Unit
P_{TOT}	Power dissipation	**BD181** **BD182** **BD183**	117	W
T_J T_s	Junction Storage Temperature	**BD181** **BD182** **BD183**	200 -65 to +200	°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance, Junction to Case	1.5	°C/W

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
I_{EBO}	Emitter-Base Cutoff Current	V_{EB}= 7 V, I_C=0	**BD181**	-	-	5.0	A
			BD182	-	-		
			BD183	-	-		
I_{CBO}	Collector-Base Cutoff Current	V_{CB}=45 V t_j=200°C	**BD181**	-	-	2.0	mA
		V_{CB}=60 V t_j=200°C	**BD182**	-	-	5.0	
		V_{CB}=80 V t_j=200°C	**BD183**	-	-	5.0	
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	I_C=200 mA, I_B=0	**BD181**	45	-	-	V
			BD182	60	-	-	
			BD183	80	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C=3 A, I_B=0.3 A	**BD181**	-	-	1.0	V
		I_C=4 A, I_B=0.4 A	**BD182**	-	-	1.0	
		I_C=3 A, I_B=0.3 A	**BD183**	-	-	1.0	
$V_{BR(CER)}$	Collector-Emitter Breakdown Voltage (*)	I_C=200 mA, R_{BE}=100 Ω	**BD181**	55	-	-	V
			BD182	70	-	-	
			BD183	85	-	-	

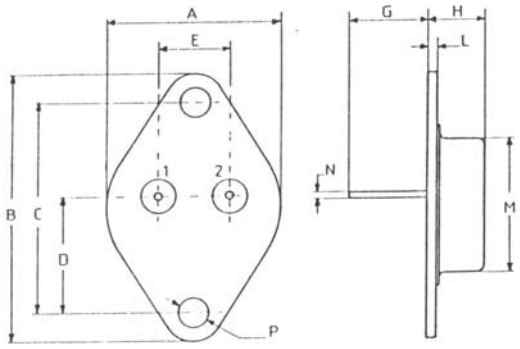
BD181 – BD182 – BD183

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
f_{hfe}	Collector-Emitter Breakdown Voltage (*)	V_{CE}=4.0 V, I_C=3.0 A	**BD181** **BD182** **BD183**	15	-	-	kHz
h_{FE}	Static forward current transfer ratio (*)	V_{CE}=4.0 V, I_C=3.0 A	**BD181**	20	-	70	-
		V_{CE}=4.0 V, I_C=4.0 A	**BD182**	20	-	70	
		V_{CE}=4.0 V, I_C=3.0 A	**BD183**	20	-	70	

For PNP types current and voltage values are negative
(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector