



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-Emitter Voltage		BD181 45	V
			BD182 60	
			BD183 80	
V_{CER}	Collector-Emitter Voltage	$R_{BE}=100\ \Omega$	BD181 55	V
			BD182 70	
			BD183 85	
V_{CEX}	Collector-Emitter Voltage	$V_{BE}=-1.5\ V$	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	@ $T_C < 25^\circ$	BD181 150	Watts
			BD182	
			BD183	



BD181 – BD182 – BD183

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

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	$V_{EB}=7\text{ V}, I_C=0$	BD181	-	-	5.0	A
			BD182	-	-		
			BD183	-	-		
I_{CBO}	Collector-Base Cutoff Current	$V_{CB}=45\text{ V}$ $t_i=200^\circ\text{C}$	BD181	-	-	2.0	mA
		$V_{CB}=60\text{ V}$ $t_i=200^\circ\text{C}$	BD182	-	-	5.0	
		$V_{CB}=80\text{ V}$ $t_i=200^\circ\text{C}$	BD183	-	-	5.0	
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200\text{ mA}, I_B=0$	BD181	45	-	-	V
			BD182	60	-	-	
			BD183	80	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=3\text{ A}, I_B=0.3\text{ A}$	BD181	-	-	1.0	V
		$I_C=4\text{ A}, I_B=0.4\text{ A}$	BD182	-	-	1.0	
		$I_C=3\text{ A}, I_B=0.3\text{ A}$	BD183	-	-	1.0	
$V_{BR(CER)}$	Collector-Emitter Breakdown Voltage (*)	$I_C=200\text{ mA}, R_{BE}=100\ \Omega$	BD181	55	-	-	V
			BD182	70	-	-	
			BD183	85	-	-	

BD181 – BD182 – BD183

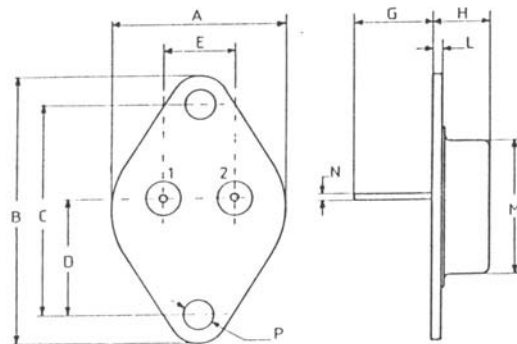
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
f_{hfe}	Collector-Emitter Breakdown Voltage (*)	$V_{CE}=4.0\text{ V}, I_C=3.0\text{ A}$	BD181	15	-	-	kHz
			BD182				
			BD183				
h_{FE}	Static forward current transfer ratio (*)	$V_{CE}=4.0\text{ V}, I_C=3.0\text{ A}$	BD181	20	-	70	-
		$V_{CE}=4.0\text{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

For PNP types current and voltage values are negative

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

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