



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		7.0	V	
I_C	Collector Current		15	A	
I_B	Base Current		7.0	A	
P_T	Power Dissipation	@ $T_C < 25^\circ$	150	W	
P_{TOT}	<i>Power dissipation</i>		117	W	
$T_J T_s$	Junction <i>Temperature</i>		200	°C	
	Storage Temperature		-65 to +200		

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	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	$V_{CB}=45\text{ V}$ $T_j=200^\circ\text{C}$	BD181	-	-	2.0	mA
		$V_{CB}=60\text{ V}$ $T_j=200^\circ\text{C}$	BD182	-	-	5.0	
		$V_{CB}=80\text{ V}$ $T_j=200^\circ\text{C}$	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	-	-	
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	

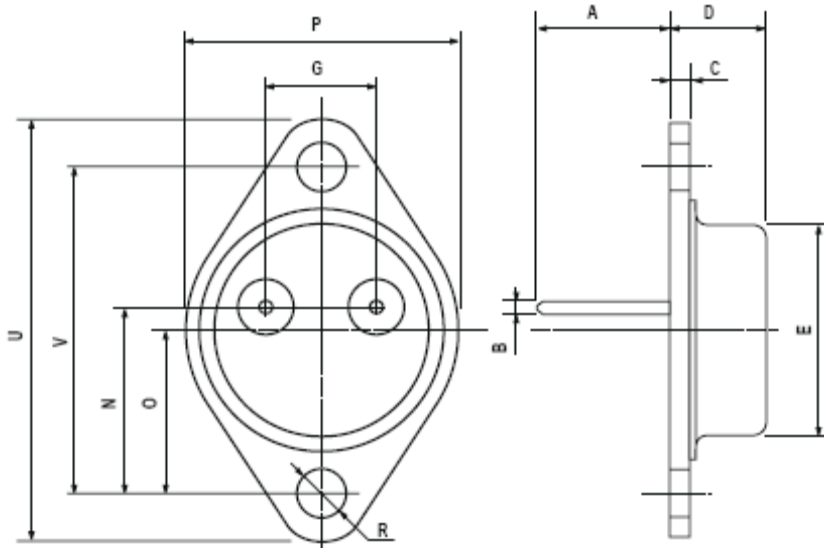
(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$



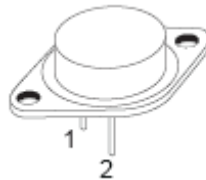
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MECHANICAL DATA CASE TO-3

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



Revised September 2012

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