



## 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	$R_{BE}=100\ \Omega$	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			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	$^\circ C$
	Storage Temperature			-65 to +200	

#### THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
$R_{thJ-C}$	Thermal Resistance, Junction to Case		1.5	$^\circ C/W$

## BD181 – BD182 – BD183

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

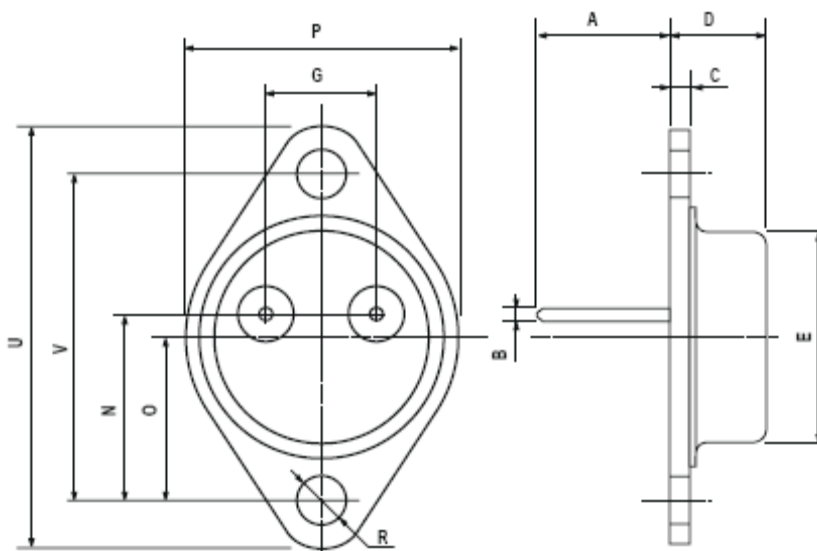
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$I_{EBO}$	Emitter-Base Cutoff Current	$V_{EB} = 7 \text{ V}, I_C = 0$	BD181	-	-	5.0	A
			BD182	-	-		
			BD183	-	-		
$I_{CBO}$	Collector-Base Cutoff Current	$V_{CB} = 45 \text{ V}$ $T_j = 200^\circ\text{C}$	BD181	-	-	2.0	mA
		$V_{CB} = 60 \text{ V}$ $T_j = 200^\circ\text{C}$	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  $\angle 2.0\%$

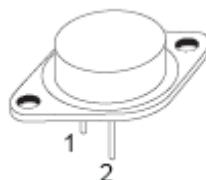
## BD181 – BD182 – BD183

### 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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