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			7.0	V
I_C	Collector Current			15	A
I_B	Base Current			7.0	A
P_T	Power Dissipation	@ T_C < 25°		150	W
P_{TOT}	*Power dissipation*			117	W
T_J T_s	Junction *Temperature*			200	℃
	Storage Temperature			-65 to +200	

THERMAL CHARACTERISTICS

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

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ELECTRICAL CHARACTERISTICS

TC=25℃ unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	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℃	BD181	-	-	2.0	mA
		V_{CB}=60 V T_j=200℃	BD182	-	-	5.0	
		V_{CB}=80 V T_j=200℃	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	-	-	
f_{hfe}	Collector-Emitter Breakdown Voltage (*)	V_{CE}=4.0 V, I_C=3.0 A	BD181	15	-	-	kHz
			BD182				
			BD183				
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	

(*) Pulse Width ≈ 300 μs, Duty Cycle ∠ 2.0%

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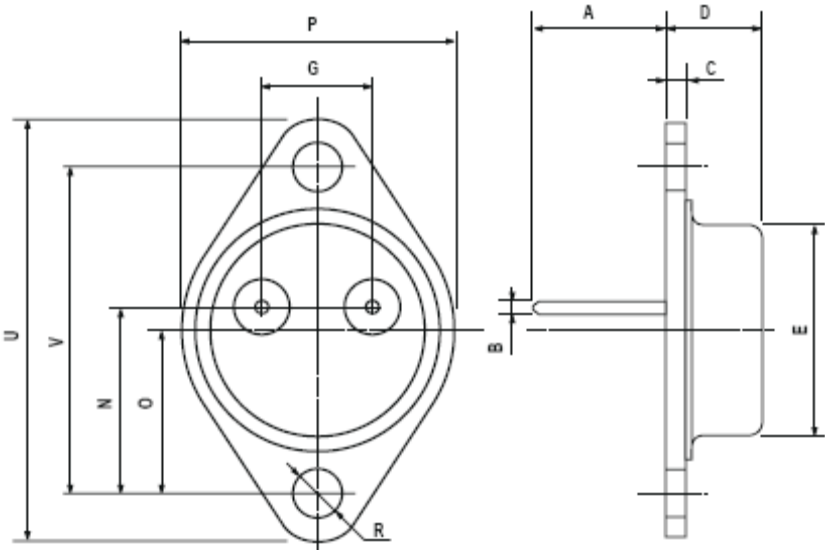
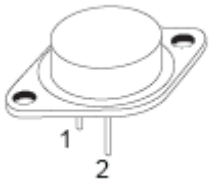
MECHANICAL DATA CASE TO-3

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



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