



PNP BD202 – BD204

SILICON EPITAXIAL-BASE POWER TRANSISTORS

The BD202 and BD204 are PNP transistors mounted in Jedec TO-220 plastic package. They are primarily intended for use in if-hi equipment delivering an output of 15 to 25 W into 4Ω or 8Ω load.

NPN complements are BD201 and BD203

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
$-V_{CEO}$	Collector-Emitter Voltage	BD202	45	V
		BD204	60	
$-V_{CBO}$	Collector-Base Voltage	BD202	60	V
		BD204	60	
$-V_{EBO}$	Emitter-Base Voltage		5.0	V
$-I_C$	Collector Current	$-I_C$	8	A
		$-I_{CM}$	12	A
$-I_{CSM}$	Collector Current (non-repetitive peak value, t_p max. 2 ms)		25	A
$-I_B$	Base Current		3	A
P_D	Total Device Dissipation	@ $T_C = 25^\circ$	60	W
T_J	Junction Temperature		150	$^\circ\text{C}$
T_{Stg}	Storage Temperature range		-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to mounting base	70	K/W
R_{thJ-mb}	Thermal Resistance, Junction to ambient in free air	2.08	K/W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

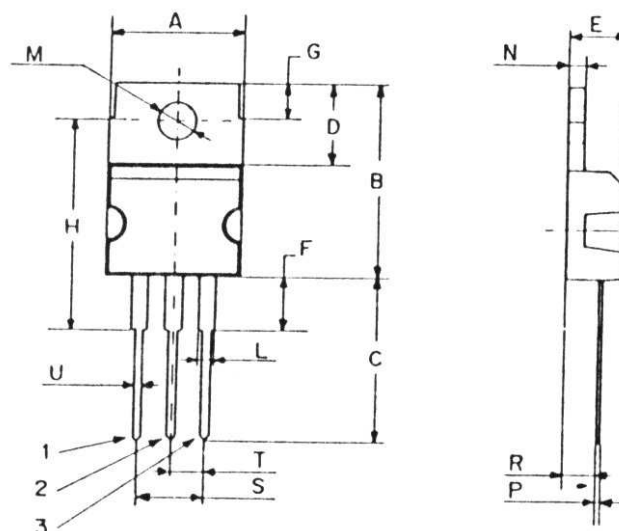
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
-I _{CEO}	Collector Cutoff Current	-V _{CE} =30 V, I _B =0V	BD202 BD204	-	-	0.2	mA
-I _{CBO}	Collector Cutoff Current	-V _{CB} =40 V, I _E =0V T _i =150°C	BD202 BD204	-	-	1	mA
-I _{EBO}	Emitter Cutoff Current	-V _{BE} =5 V, I _C =0	BD202 BD204	-	-	0.5	mA
-V _{CBO}	Collector-Base Breakdown Voltage	-I _C =1 m A, I _E = 0	BD202 BD204	60	-	-	V
-V _{CEO}	Collector Emitter Breakdown Voltage (*)	-I _C =200 m A, I _B = 0	BD202 BD204	45 60	- -	- -	V
-V _{EBO}	Emitter Base Breakdown Voltage	-I _E =1 mA, I _C =0	BD202 BD204	5	-	-	V
-V _{CE(SAT)}	Collector-Emitter saturation Voltage (*)	-I _C =3 A, -I _B =300 mA	BD202 BD204	-	-	1	V
		-I _C =6 A, -I _B =600 mA	BD202 BD204	-	-	1.5	
-V _{BE(SAT)}	Base-Emitter saturation Voltage (*)	-I _C =6 A, -I _B =600 mA	BD202 BD204	-	-	2	
-V _{BE}	Base Emitter Voltage (*)	-I _C =3 A, -V _{CE} =2 V	BD202 BD204	-	-	1.5	V
h _{FE}	DC Current Gain (*)	-I _C =3 A, -V _{CE} =2 V	BD202	30	-	-	-
		-I _C =2 A, -V _{CE} =2 V	BD204	30	-	-	
f _{hfe}	Cut-off frequency	-I _C =300 mA -V _{CE} =3 V	BD202 BD204	25	-	-	KHz
f _T	Transition frequency	-I _C =300 mA -V _{CE} =3 V f= 1MHz	BD202	7	-	-	MHz
			BD204				
I _{s/b}	Forward bias second breakdown collector current	-V _{CE} =40 V,t _p = 0.1 s T _{amb} = 25 °C	BD202 BD204	1.5	-	-	A
h _{FE1} /h _{FE2}	DC current gain	-I _C =1 A, V _{CE} =2 V	BD202 BD204	2.5	-	-	-
t _{on}	Turn-on time	-I _{Con} =2 A -I _{Bon} = I _{Boff} =200 mA	BD202 BD204	-	-	1	μs
T _{off}	Turn-off time		BD202 BD204	-	-	2	

(*) Pulse conditions : $t_p < 300\text{ }\mu\text{s}$, $\delta = 2\%$

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MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Case :	Collector

Revised September 2012

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