NPN BD201 – BD203
PNP BD202 – BD204

SILCON EPITAXIAL-BASE POWER TRANSISTORS

The BD201 and BD203 are NPN 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.
PNP complements are BD202 and BD204

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage		**BD201**	45	V
			BD203	60	
V_{CBO}	Collector-Base Voltage		**BD201**	60	V
			BD203	60	
V_{EBO}	Emitter-Base Voltage		**BD201**	5.0	V
			BD203		
I_C	Collector Current	I_C	**BD201**	8	A
			BD203		
		I_{CM}	**BD201**	12	A
			BD203		
I_{CSM}	Collector Current (non-repetitive peak value, t_p max.2 ms)		**BD201**	25	A
			BD203		
I_B	Base Current		**BD201**	3	A
			BD203		
P_D	Total Device Dissipation	@ T_C = 25°	**BD201**	60	Watts
			BD203		
T_J	Junction Temperature		**BD201**	150	°C
			BD203		
T_{Stg}	Storage Temperature range		**BD201**	-65 to +200	°C
			BD203		

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to mounting base	**BD201**	70	K/W
		BD203		
R_{thJ-mb}	Thermal Resistance, Junction to ambient in free air	**BD201**	2.08	K/W
		BD203		

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
I_{CEO}	Collector Cutoff Current	V_{CE}=30 V, I_B=0V	**BD201**	-	-	0.2	mA
			BD203				
I_{CBO}	Collector Cutoff Current	V_{CB}=40 V, I_E=0V, T_j=150°C	**BD201**	-	-	1	mA
			BD203				
I_{EBO}	Emitter Cutoff Current	V_{BE}=5.0 V, I_C=0	**BD201**	-	-	0.5	mA
			BD203				
V_{BE}	Base Emitter Voltage (1)	I_C=3 A, V_{CE}=2.0 V	**BD201**	-	-	1.5	V
			BD203				
V_{CEK}	Knee Voltage (1)	I_C=3 A, I_B= value for which I_C=3.3 A at V_{CE}=2.0 V	**BD201**	-	1	-	V
			BD203				
h_{FE}	DC Current Gain (1)	I_C=3 A, V_{CE}=2.0 V	**BD201**	30	-	-	-
		I_C=2 A, V_{CE}=20 V	**BD203**	30	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	I_C=3 A, I_B=0.3 A	**BD201**	-	-	1	V
			BD203				
		I_C=6 A, I_B=0.6 A	**BD201**	-	-	1.5	
			BD203				
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (1)	I_C=6 A, I_B=0.6 A	**BD201**	-	-	2	
			BD203				

Symbol	Ratings	Test Condition(s)		Min	Typ	Mx	Unit
f_{hfe}	Cut-off frequency	I_C=0.3 A, V_{CE}=3.0 V	**BD201**	25	-	-	KHz
			BD203				
f_T	Transition frequency	I_C=0.3 A, V_{CE}=3.0 V f= 1MHz	**BD201**	7	-	-	MHz
			BD203				
$I_{s/b}$	Forward bias second breakdown collector current	V_{CE}=40 V,t_p= 0.1 s T_{amb}= 25 °C	**BD201**	1.5	-	-	A
			BD203				
h_{FE1}/h_{FE2}	DC current gain ration of matched complementary pairs	I_C=1 A, V_{CE}=2.0 V	**BD201**	2.5	-	-	-
			BD203				
t_{on}	Turn-on time	I_{Con}=2 A I_{Bon} = -I_{Boff} =0.2 A	**BD201**	-	-	1	µs
			BD203				
T_{off}	Turn-off time		**BD201**	-	-	4	
			BD203				

(1) Pulse conditions : tp < 300 µs, δ =2%

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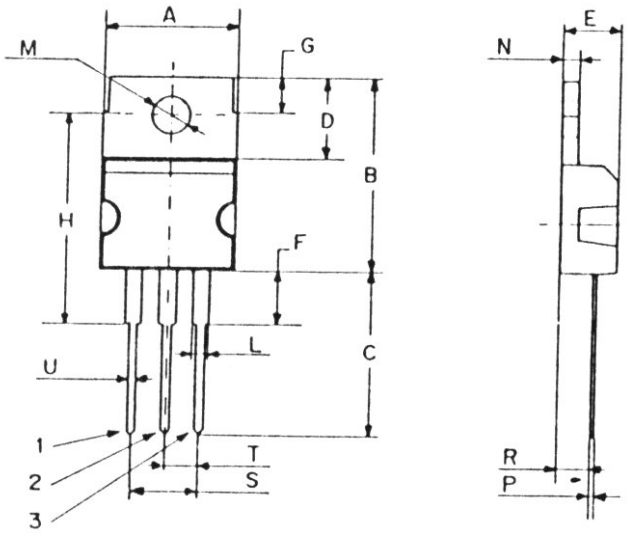
MECHANICAL DATA CASE TO-220

DIMENSIONS		
	mm	inches
A	9,86	0,39
B	15,73	0,62
C	13,37	0,52
D	6,67	0,26
E	4,44	0,17
F	4,21	0,16
G	2,99	0,11
H	17,21	0,68
L	1,29	0,05
M	3,6	0,14
N	1,36	0,05
P	0,46	0,02
R	2,1	0,08
S	5	0,19
T	2,52	0,098
U	0,79	0,03



Pin 1 :	base
Pin 2 :	Collector
Pin 3 :	emitter