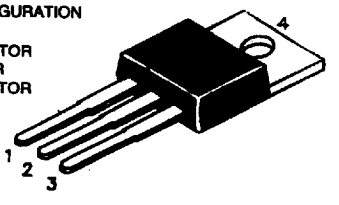
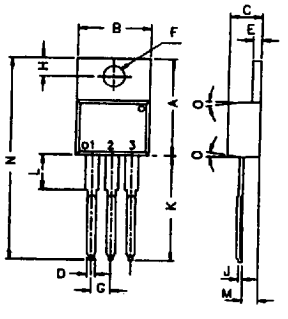
BD201, BD203, BDX77 NPN PLASTIC POWER TRANSISTORS

Complementary BD202, BD204 and BDX78

Medium Power Switching and Amplifier Applications

PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR





ALL DIMENSIONS ARE IN M.M.

DIM	MIN	MAX
A	14,42	16,51
B	9,63	10,67
C	3,56	4,83
D	–	0,90
E	1,15	1,40
F	3,75	3,88
G	2,29	2,79
H	2,54	3,43
J	–	0,56
K	12,70	14,73
L	–	6,35
M	2,03	2,92
N	–	31,24
O	7 DEG	

ABSOLUTE MAXIMUM RATINGS

			201	203	BDX77	
Collector-base voltage (open emitter)	V_{CBO}	max.	60	60	100	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Collector current (DC)	I_C	max.		8.0		A
Total power dissipation up to T_{mb} = 25°C	P_{tot}	max.		60		W
Junction temperature	T_j	max.		150		°C
Collector-emitter saturation voltage						
I_C = 3 A; I_B = 0.3 A	V_{CEsat}	max.		1.0		V
D.C. current gain						
I_C = 1 A; V_{CE} = 2 V	h_{FE}	min.	–	–	30	
I_C = 2 A; V_{CE} = 2 V	h_{FE}	min.	–	30	–	
I_C = 3 A; V_{CE} = 2 V	h_{FE}	min.	30	–	–	

RATINGS (at T_A=25°C unless otherwise specified)

Limiting values			201	203	BDX77	
Collector-base voltage (open emitter)	V_{CBO}	max.	60	60	100	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	80	V
Emitter-base voltage (open collector)	V_{EBO}	max.		5.0		V
Collector current (DC)	I_C	max.		8.0		A

Collector current (peak t_p = 10 ms)	I_{CM}	max.	12	A
Collector current (non-repetitive peak t_p = 2 ms)	I_{CSM}	max.	25	A
Base current	I_B	max.	3.0	A
Total power dissipation up to T_{mb} = 25°C	P_{tot}	max.	60	W
Junction temperature	T_j	max.	150	°C
Storage temperature	T_{stg}		–65 to +150	°C

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j-a}$		70	K/W

CHARACTERISTICS

T_{amb} = 25°C unless otherwise specified

			201	203	BDX77	
Collector cutoff current						
I_B = 0; V_{CE} = 30 V	I_{CEO}	max.		0.2		mA
I_B = 0; V_{CB} = 40 V; T_j = 150°C	I_{CBO}	max.		1.0		mA
Emitter cut-off current						
I_C = 0; V_{EB} = 5 V	I_{EBO}	max.		0.5		mA
Breakdown voltages						
I_C = 0.2 A; I_B = 0	V_{CEO}	min.	45	60	80	V
I_C = 1 mA; I_E = 0	V_{CBO}	min.	60	60	100	V
I_E = 1 mA; I_C = 0	V_{EBO}	min.		5.0		V
Saturation voltages						
I_C = 3 A; I_B = 0.3 A	V_{CEsat}*	max.		1.0		V
I_C = 6 A; I_B = 0.6 A	V_{CEsat}*	max.		1.5		V
	V_{BEsat}*	max.		2.0		V
Base-emitter on voltage						
I_C = 3 A; V_{CE} = 2 V	$V_{BE(on)}$*	max.		1.5		V
D.C. current gain						
I_C = 1 A; V_{CE} = 2 V	h_{FE}*	min.	–	–	3(	
I_C = 2 A; V_{CE} = 2 V	h_{FE}*	min.	–	30	–	
I_C = 3 A; V_{CE} = 2 V	h_{FE}*	min.	30	–	–	
Common emitter small						
I_C = 0.3 A; V_{CE} = 3 V	f_{hfe}	min.		25		KHz
Transition frequency						
I_C = 0.3 A; V_{CE} = 3 V; f = 1 MHz	f_T	min.		7.0		MHz
Second breakdown collector current with base forward biased (non-repetitive)						
V_{CE} = 40 V; t_p = 0.1 s	$I_{S/b}$	min.		1.5		A
Switching time						
I_{Con} = 2A; I_{Bon} = $-I_{Boff}$ = 0.2A						
Turn on time	ton	max.		1.0		µs
Tur off time	toff	max.		4.0		µs

* Pulse test: $t_p \leq 300$ µs; duty cycle ≤ 2%