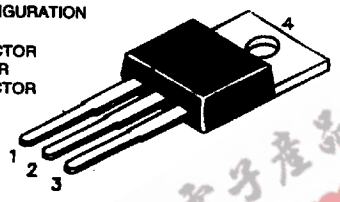
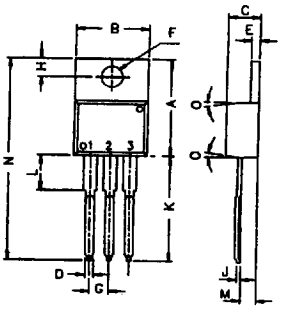
BD201, BD203, BDX77 NPN PLASTIC POWER TRANSISTORS

Complementary BD202, BD204 and BDX78

Medium Power Switching and Amplifier Applications

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





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
Q	7 DEG	

ALL DIMENSIONS ARE IN M.M.

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%