NPN Transistors

'D' Device Types

ELECTRICAL CHARACTERISTICS at T_A = 25°C

Device Type	I_C Max. (mA)	$V_{(BR)CBO}$ (V)	$V_{(BR)CEO}$ (V)	$V_{(BR)EBO}$ (V)	I_{CBO} Max. (nA)	I_{CBO} @V_{CB} (V)	DC Current Gain h_{FE} Min.	DC Current Gain h_{FE} Max.	DC Current Gain @I_C (mA)	DC Current Gain @V_{CE} (V)	$V_{CE(sat)}$ Max. (V)	$V_{CE(sat)}$ @I_C (mA)	f_T Min. (MHz)	f_T @I_C (mA)	C_{ob}[1] (pF)	t_s[1] (ns)	NF[1] (dB)	Process
D33D26	800	50[3]	40	5.0	100[3]	25	150	300	2.0	2.0	0.75	500	135	50	15	—	—	JLA
D33D27	800	50[3]	40	5.0	100[3]	25	250	500	2.0	2.0	0.75	500	150	50	15	—	—	JLA
D33D29	800	70[3]	60	5.0	100[3]	25	60	120	2.0	2.0	0.75	500	80	50	15	—	—	JLA
D33D30	800	70[3]	60	5.0	100[3]	25	100	200	2.0	2.0	0.75	500	120	50	15	—	—	JLA

NOTES:
1) Maximum at typical JEDEC conditions.
2) μA.
3) $V_{(BR)CES}/I_{CES}$, as applicable.
4) mA.
5) $V_{(BR)CER}$ at R = 10Ω.

Pro-Electron Device Types

ELECTRICAL CHARACTERISTICS at T_A = 25°C

Device Type	I_C Max. (mA)	$V_{(BR)CBO}$ (V)	$V_{(BR)CEO}$ (V)	$V_{(BR)EBO}$ (V)	I_{CBO} Max. (nA)	I_{CBO} @V_{CB} (V)	DC Current Gain h_{FE} Min.	DC Current Gain h_{FE} Max.	DC Current Gain @I_C (mA)	DC Current Gain @V_{CE} (V)	$V_{CE(sat)}$ Max. (V)	$V_{CE(sat)}$ @I_C (mA)	f_T Min. (MHz)	f_T @I_C (mA)	C_{ob}[1] (pF)	t_s[1] (ns)	NF[1] (dB)	Process
BC167	500	50[3]	45	5.0	15[3]	50	120	800	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC167A	500	50[3]	45	5.0	15[3]	50	120	220	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC167B	500	50[3]	45	5.0	15[3]	50	180	460	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC168	500	30[3]	20	5.0	15[3]	30	120	800	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC168A	500	30[3]	20	5.0	15[3]	30	120	220	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC168B	500	30[3]	20	5.0	15[3]	30	180	460	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC168C	500	30[3]	20	5.0	15[3]	30	380	800	2.0	5.0	0.2	10	85	0.5	7.0	—	10	JGA
BC169	500	30[3]	20	5.0	15[3]	30	180	800	2.0	5.0	0.2	10	85	0.5	7.0	—	4.0	JGA
BC169B	500	30[3]	20	5.0	15[3]	30	180	460	2.0	5.0	0.2	10	85	0.5	7.0	—	4.0	JGA
BC169C	500	30[3]	20	5.0	15[3]	30	380	800	2.0	5.0	0.2	10	85	0.5	7.0	—	4.0	JGA
BC182L	500	60	50	6.0	15	50	120	800	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC182LA	500	60	50	6.0	15	50	120	220	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC182LB	500	60	50	6.0	15	50	180	460	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC183L	500	45	30	6.0	15	30	120	800	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC183LA	500	45	30	6.0	15	30	120	220	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC183LB	500	45	30	6.0	15	30	180	460	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC183LC	500	45	30	6.0	15	30	380	800	2.0	5.0	0.25	10	150	10	7.0	—	10	JGA
BC184L	500	45	30	5.0	15	30	240	900	2.0	5.0	0.25	10	150	10	7.0	—	4.0	JGA
BC184LB	500	45	30	5.0	15	30	240	500	2.0	5.0	0.25	10	150	10	7.0	—	4.0	JGA
BC184LC	500	45	30	5.0	15	30	450	900	2.0	5.0	0.25	10	150	10	7.0	—	4.0	JGA
BC317	500	50	45	6.0	30	20	110	450	2.0	5.0	0.2	10	—	—	7.0	—	6.0	JGA
BC317A	500	50	45	6.0	30	20	110	220	2.0	5.0	0.2	10	—	—	7.0	—	6.0	JGA

NOTES:
1) Maximum at typical JEDEC conditions.
2) μA.
3) $V_{(BR)CES}/I_{CES}$, as applicable.
4) mA.
5) $V_{(BR)CER}$ at R = 10Ω.