



National
Semiconductor

Bipolar Pro Electron Series

Type No.	Case Style	V _{CE} * V _{CB} (V) Min	V _{CE} (V) Min	V _{EB} (V) Min	I _{CE} * I _{CB} (nA) Max	V _{CE} * V _{CB} (V) Max	H _{FE} h _{FE} @ 1 kHz* Min Max	I _C (mA) Max	V _{CE} (SAT) (V) & Max	V _{BE} (SAT) V _{BE} (ON)* (V) Min Max	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) @ I _C (mA) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC327	TO-92 (97)	50*	45	5	100*	45	40 100 600	300 100 1	0.7	1.2*	500 300						67
BC327A	TO-92 (97)	60*	60	5	100*	45	40 100 400	300 100 1	0.7	1.2*	300 500						67
BC327-10	TO-92 (97)	50*	45	5	100*	45	40 63 160	300 100 1	0.7	1.2*	500 300						67
BC327-16	TO-92 (97)	50*	45	5	100*	45	40 100 250	300 100 1	0.7	1.2*	500 300						67
BC327-25	TO-92 (97)	50*	45	5	100*	45	40 160 400	300 100 1	0.7	1.2*	500 300						67
BC328	TO-92 (97)	30*	25	5	100*	25	40 100 600	300 100 1	0.7	1.2	500 300						67
BC328-10	TO-92 (97)	30*	25	5	100*	25	40 63 160	300 100 1	0.7	1.2	500 300						67
BC328-16	TO-92 (97)	30*	25	5	100*	25	40 100 250	300 100 1	0.7	1.2	500 300						67
BC328-25	TO-92 (97)	30*	25	5	100*	25	40 160 400	300 100 1	0.7	1.2	500 300						67
BC337	TO-92 (97)	50*	45	5	100	20	100 40	600 500 1	0.7		500						12
BC337A	TO-92 (97)	60*	60	5	100	20	100 40	400 500 1	0.7		500						12
BC337-16	TO-92 (97)	50*	45	5	100	20	100 40	250 500 1	0.7		500						12
BC337-25	TO-92 (97)	50*	45	5	100	20	160 40	400 500 1	0.7		500						12

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} * V _{CB} (V) Min	V _{CE} (V) Min	V _{EB} (V) Min	I _{CE} * I _{CB} (nA) Max	H _{FE} h _{FE} @ 1 kHz Min Max	I _C (mA) V _{CE} (V) Max	V _{CE(SAT)} (V) & V _{BE(ON)*} (V) Min Max	I _C (mA) V _{BE(ON)*} (V) Min Max	C _{ob} (pF) Max	f _T (MHz) @ I _C (mA) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC338	TO-92 (97)	30*	20	5	100 20	100 600 40	100 1 500 1	0.7	500						12
BC338-16	TO-92 (97)	30*	20	5	100 20	100 250 40	100 1 500 1	0.7	500						12
BC338-25	TO-92 (97)	30*	20	5	100 20	100 250 40	100 1 500 1	0.7	500						12
BC368	TO-92 (94)	25*	20	5	10 μA 25	60 5 85 375 60 1A 1	5 10 500 1	0.5	1A						37
BC369	TO-92 (94)	25*	20	5	10 μA 25	50 5 85 375 60 1A 1	5 10 500 1	0.5	1A						77
BC546	TO-92 (97)	80	65	6	15 30	110 800 220 2	2 5	0.25	10				10	(Notes 1, 11)	11
BC546A	TO-92 (97)	80	65	6	15 30	110 800 220 2	5	0.25	10				10	(Notes 1, 11)	11
BC546B	TO-92 (97)	80	65	6	15 30	200 450 220 2	5	0.25	10				10	(Notes 1, 11)	11
BC547	TO-92 (97)	50	45	6	10 20	125 900*	2 5	0.25 0.6	10 100 2	4.5					10
BC547A	TO-92 (97)	50	45	6	10 20	125 260*	2 5	0.25 0.6	10 100 2	4.5					10
BC547B	TO-92 (97)	50	45	6	10 20	240 500*	2 5	0.25 0.6	10 100 2	4.5					10
BC547C	TO-92 (97)	50	45	5	15 30	420 900	2 5	0.25 0.6	10 100 2	4.5					10

T-03-01

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CB} (V) Min	V _{CE} [*] V _{CB} (V) Min	V _{EB} (V) Min	I _{CE} [*] I _{CB} @ (mA) Max	HFE h _{FE} 1 kHz Min Max	V _{CE} (V) Max	V _{BE} (SAT) V _{BE} (ON) [*] (V) Min Max	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC548	TO-92 (97)	30	20	5	10	125 900*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				10	(Note 1)	10
BC548A	TO-92 (97)	30	20	5	10	125 260*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				10	(Note 1)	10
BC548B	TO-92 (97)	30	20	5	10	240 500*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				10	(Note 1)	10
BC548C	TO-92 (97)	30	20	5	10	450 900*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				10	(Note 1)	10
BC549	TO-92 (97)	30	20	5	10	240 900*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				4	(Note 1)	10
BC549B	TO-92 (97)	30	20	5	10	240 500*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				4	(Note 1)	10
BC549C	TO-92 (97)	30	20	5	10	450 900*	0.25 0.6	0.77* 0.55 0.70*	10 100 2	4.5				4	(Note 1)	10
BC550	TO-92 (97)	50	45	5	10	240 900*	0.25 0.6	0.77* 0.55 0.70*	10 100 2					3	(Note 1)	10
BC550B	TO-92 (97)	50	45	5	10	240 500*	0.25 0.6	0.77* 0.55 0.70*	10 100 2					3	(Note 1)	10
BC556	TO-92 (97)	80	65	5	15	75 475	0.3 0.65	0.77* 0.55 0.70*	10 100 2					10	(Note 1)	69

Bipolar Pro Electron Series

Bipolar Pro Electron Series

T-03-01

Bipolar Pro Electron Series (Continued)																
Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CE} [*] I _{CB0} @ (nA) Max	f _{HE} h _{FE} 1 kHz [*] Min Max	I _C (mA) @ Min Max	V _{CE} (SAT) (V) & Max	V _{BE} (SAT) V _{BE(ON)} [*] (V) Min Max	I _C (mA) @ Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC556A	TO-92 (97)	80	65	5	15	30	125 250	2 5	0.3	10				10	(Note 1)	69
BC556B	TO-92 (97)	80	65	5	15	30	220 475	2 5	0.3	10				10	(Note 1)	69
BC557	TO-92 (97)	50	45	5	100	20	75 900*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC557A	TO-92 (97)	50	45	5	100	20	125 260*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC557B	TO-92 (97)	50	45	5	100	20	240 500*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC558	TO-92 (97)	30	25	5	100	20	75 500*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC558A	TO-92 (97)	30	25	5	100	20	125 260*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC558B	TO-92 (97)	30	25	5	100	20	240 500*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC558C	TO-92 (97)	30	25	5	100	20	450 900*	2 5	0.3 0.65	10 100				10	(Note 1)	68
BC559	TO-92 (97)	25	20	5	100	20	125 500*	2 5	0.3 0.65	10 100				4	(Note 1)	68

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE0} [*] I _{CE0} (mA) Max	V _{CB} (V) Min	H _{FE} h _{FE} @ 1 kHz Min Max	I _C (mA) Min Max	V _{CE(SAT)} (V) & V _{BE(ON)} [*] (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC559B	TO-92 (97)	25	20	5	100	20	240 500*	2 5	0.3 0.65 0.82* 0.75*	10 100 2				4	(Note 1)	68
BC559C	TO-92 (97)	25	20	5	100	20	450 900*	2 5	0.3 0.65 0.82* 0.75*	10 100 2				4	(Note 1)	68
BC560	TO-92 (97)	50	45	5	100	45	125 500*	2 5	0.3 0.65 0.82* 0.75*	10 100 2				3	(Note 1)	68
BC560B	TO-92 (97)	50	45	5	100	45	240 500*	2 5	0.3 0.65 0.82* 0.75*	10 100 2				3	(Note 1)	68
BC635	TO-92 (94)	45	45	5			25 40 250	5 150 2 500 2	0.5	500						38
BC636	TO-92 (94)	45	45	5	100	30	25 40 250	5 150 2 500 2	0.5	500						78
BC637	TO-92 (94)	60	60	5			25 40 250	5 150 2 500 2	0.5	500						38*
BC638	TO-92 (94)	60	60	5	100	30	25 40 250	5 150 2 500 2	0.5	500						78
BC639	TO-92 (94)	100	80	5			25 40 250	5 150 2 500 2	0.5	500						39
BC640	TO-92 (94)	100	80	5	100	30	25 40 250	5 150 2 500 2	0.5	500						79
BC807	TO-236 (49)	50*	45	5	100	20	100 600 40	100 100 500 1	0.7	500						67

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)																
Type No.	Case Style	V _{CE} [*] V _{CEO} (V) Min	V _{CE} [*] V _{CE0} (V) Min	V _{EB} [*] V _{EB0} (V) Min	I _{CE} [*] I _{CB0} @ (V) (nA) Max	H _{FE} h _{FE} @ 1 kHz [*] Min Max	I _C @ (mA) V _{CE} (V) Min Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Min Max	I _C (mA) C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.		
BC807-16	TO-236 (49)	50*	45	5	100	20 100 250 40	1 500 1	0.7	500					67		
BC807-25	TO-236 (49)	50*	45	5	100	20 100 400 40	1 500 1	0.7	500					67		
BC807-40	TO-236 (49)	50*	45	5	100	20 100 250 40	1 500 1	0.7	500					67		
BC808	TO-236 (49)	30*	25	5	100	20 100 600 40	1 500 1	0.7	500					67		
BC808-16	TO-236 (49)	30*	25	5	100	20 100 250 40	1 500 1	0.7	500					67		
BC808-25	TO-236 (49)	30*	25	5	100	20 100 400 40	1 500 1	0.7	500					67		
BC808-40	TO-236 (49)	30*	25	5	100	20 100 250 40	1 500 1	0.7	500					67		
BC817	TO-236 (49)	30*	25	5	100	20 100 600 40	1 500 1	0.7	500					12		
BC817-16	TO-236 (49)	30*	25	5	100	20 100 250 40	1 500 1	0.7	500					12		
BC817-25	TO-236 (49)	30*	25	5	100	20 100 400 40	1 500 1	0.7	500					12		
BC817-40	TO-236 (49)	30*	25	5	100	20 100 250 40	1 500 1	0.7	500					12		
BC818	TO-236 (49)	30*	25	5	100	20 100 600 40	1 500 1	0.7	500					12		
BC818-16	TO-236 (49)	30*	25	5	100	20 100 250 40	1 500 1	0.7	500					12		
BC818-25	TO-236 (49)	30*	25	5	100	20 100 400 40	1 500 1	0.7	500					12		

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CE0} [*] I _{CB0} @ (nA) Max	h _{FE} h _{FE} 1 kHz Min Max	I _C (mA) Min Max	V _{CE(SAT)} (V) & V _{BE(ON)} [*] (V) Max Min	V _{BE(SAT)} I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
BC818-40	TO-236 (49)	30*	25	5	100	250 600 40	100 500 1	1	0.7	500						12
BC846	TO-236 (49)	80	65	6	15	110	0.01 5	5	0.25	10			10	(Note 1)		11
BC846-A	TO-236 (49)	80	65	6	15	110	0.01 5	5	0.25	10			10	(Note 1)		11
BC846-B	TO-236 (49)	80	65	6	15	200	0.01 5	5	0.25	10			10	(Note 1)		11
BC847	TO-236 (49)	50	45	6	15	110	0.01 5	5	0.25	10			10	(Note 1)		10
BC847-A	TO-236 (49)	50	45	6	15	110	0.01 5	5	0.25	10			10	(Note 1)		10
BC847-B	TO-236 (49)	50	45	6	15	200	0.01 5	5	0.25	10			10	(Note 1)		10
BC848	TO-236 (49)	30	30	5	15	110	0.01 5	5	0.25	10			10	(Note 1)		10
BC848-A	TO-236 (49)	30	30	5	15	110	0.01 5	5	0.25	10			10	(Note 1)		10
BC848-B	TO-236 (49)	30	30	5	15	200	0.01 5	5	0.25	10			10	(Note 1)		10
BC848-C	TO-236 (49)	30	30	5	15	420	0.01 5	5	0.25	10			10	(Note 1)		10

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)														
Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE} [*] I _{CB0} @ (nA) (V) Max	HFE h _{FE} 1 kHz [*] Min Max	V _{CE} (SAT) (V) & V _{BE} (ON) (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
BC849	TO-236 (49)	30	5	15	30	200	0.01	5	0.25	10	100	4	(Note 1)	10
BC849B	TO-236 (49)	30	5	15	30	200	0.01	5	0.25	10	100	4	(Note 1)	10
BC849C	TO-236 (49)	30	5	15	30	420	0.01	5	0.25	10	100	4	(Note 1)	10
BC850	TO-236 (49)	50	45	15	30	200	0.01	5	0.25	10	100	3	(Note 1)	10
BC850-B	TO-236 (49)	50	45	15	30	200	0.01	5	0.25	10	100		(Note 1)	10
BC856	TO-236 (49)	80	65	15	30	75	475	2	0.3	10	100	10	(Note 1)	69
BC856-A	TO-236 (49)	80	65	15	30	125	250	2	0.3	10	100	10	(Note 1)	69
BC856-B	TO-236 (49)	80	65	15	30	220	475	2	0.3	10	100	10	(Note 1)	69
BC857	TO-236 (49)	50	45	15	30	75	475	2	0.3	10	100	10	(Note 1)	68
BC857-A	TO-236 (49)	50	45	15	30	125	250	2	0.3	10	100	10	(Note 1)	68

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{BO} (V) Min	I _{CS} [*] I _{CS0} @ (nA) Max	H _{FE} h _{FE} 1 kHz [*] Min Max	V _{CE} (V) Min	V _{CE} (V) Max	V _{BE(SAT)} (V) & V _{BE(ON)} (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BC857-B	TO-236 (49)	50	45	5	15	30	220 475	2 5	0.3	10				10	(Note 1)	68
BC858	TO-236 (49)	30	30	5	15	30	75 800	2 5	0.3	10				10	(Note 1)	68
BC858-B	TO-236 (49)	30	30	5	15	30	220 475	2 5	0.3	10				10	(Note 1)	68
BC858-C	TO-236 (49)	30	30	5	15	30	420 800	2 5	0.3	10				10	(Note 1)	68
BC859	TO-236 (49)	30	30	5	15	30	220 800	2 5	0.65	100				4	(Note 1)	68
BC859-A	TO-236 (49)	30	30	5	15	30	125 250	2 5	0.65	100				4	(Note 1)	68
BC859-B	TO-236 (49)	30	30	5	15	30	220 475	2 5	0.65	100				4	(Note 1)	68
BC859-C	TO-236 (49)	30	30	5	15	30	420 800	2 5	0.65	100				4	(Note 1)	68
BC860	TO-236 (49)	50	45	5	15	30	220 800	2 5	0.3	10				3	(Note 1)	68
BC860-B	TO-236 (49)	50	45	5	15	30	220 475	2 5	0.3	10				3	(Note 1)	68
BCF29	TO-236 (49)	32	32	5	100	32	120 260	0.01 5	0.3	10				4	(Note 1)	68
BCF30	TO-236 (49)	32	32	5	100	32	200 450	0.01 5	0.25	10				4	(Note 1)	68
BCF32	TO-236 (49)	50	45	5	100	20	215 500	0.01 5	0.3	10				4	(Note 1)	10

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)														
Type No.	Case Style	V _{CE} [*] V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE} [*] I _{CB0} (nA) Max	H _{FE} h _{FE} @ 1 kHz [*] Min Max	I _C (mA) @ V _{CE} (V) Min Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Max Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) @ V _{CE} (V) Min Max	t _{off} (ns) Max	Test Conditions	Process No.
BCF33	TO-236 (49)	50	45	5	100 20	200 450	0.01 5 2 5	0.3 10					(Note 1)	10
BCF70	TO-236 (49)	50	45	5	100 20	215 500	0.01 5 2 5	0.3 10					(Note 1)	10
BCV26	TO-236 (49)	40	30	10	100 30	4,000 10,000 20,000	1 5 10 5 100 5	1.0 1.5 100						61
BCV27	TO-236 (49)	40	30	10	100 30	4,000 10,000 20,000	1 5 10 5 100 5	1.0 1.5 100						05
BCV71	TO-236 (49)	80	60	5	100 20	110 220	2 5 2 5	0.25 10					(Note 1)	11
BCV72	TO-236 (49)	80	60	5	100 20	200 450	2 5 2 5	0.25 10					(Note 1)	11
BCW29	TO-236 (49)	32	32	5	100 32	120 260	0.01 5 2 5	0.3 10					(Note 1)	68
BCW30	TO-236 (49)	32	32	5	100 32	215 500	0.01 5 2 5	0.3 10					(Note 1)	68
BCW31	TO-236 (49)	32	32	5	100 32	150 270	0.01 5 2 5	0.25 10					(Note 1)	10
BCW32	TO-236 (49)	32	32	5	100 32	200 420	0.01 5 2 5	0.25 10					(Note 1)	10
BCW33	TO-236 (49)	32	32	5	100 32	450 800	0.01 5 2 5	0.25 10					(Note 1)	10
BCW60	TO-236 (49)	32*	32	5	20 32	50 120	50 1 2 5	0.35 0.6 0.85 50		125	10	T-03-01		10
BCW61	TO-236 (49)	32*	32	5	20 32	50 120	50 1 2 5	0.25 0.6 0.85 50					(Note 1)	68
BCW65	TO-236 (49)	60	32	5	20* 32	35 75 100 250 35	0.1 10 1 1 1 500	2.0 500 12	100	20			(Note 1)	10

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE0} [*] I _{CE0} @ (mA) Max	V _{CB} (V) Min	h _{FE} h _{FE} @ 1 kHz Min Max	I _C (mA) Min Max	V _{CE(SAT)} (V) & Max	V _{BE(SAT)} V _{BE(ON)} [*] (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BCW66	TO-236 (49)	75	45	5	20*	45	35 75 100 35	0.1 10 100 500	10 1 1 1		2.0 500	12	100 20		10	(Note 1)	10
BCW68	TO-236 (49)	75	45	5	20*	45	35 75 100 35	0.1 10 100 500	10 1 1 1		2.0 500	12	100 20		10	(Note 1)	10
BCW69	TO-236 (49)	50	45	5	100	20	120 260	2 5	0.3		10				10	(Note 1)	68
BCW70	TO-236 (49)	50	45	5	100	20	215 500	2 5	0.3		10				10	(Note 1)	68
BCW71	TO-236 (49)	50	45	5	100	20	110 220	2 5	0.25		10				10		68
BCW72	TO-236 (49)	50	45	5	100	20	200 450	2 5	0.25		10				10	(Note 1)	68
BCW81	TO-236 (49)	50	45	5	100	20	420 800	2 5	0.25		10				10	(Note 1)	10
BCW89	TO-236 (49)	80	60	5	100	20	120 260	2 5	0.3		10				10	(Note 1)	68 *
BCX17	TO-236 (49)	50*	45	5	100	20	100 600 70 40	100 100 300 500	1 1 1 1	0.62	500						67
BCX18	TO-236 (49)	30*	25	5	100	20	100 600 70 40	100 100 300 500	1 1 1 1	0.62	500						67
BCX19	TO-236 (49)	50*	45	5	100	20	100 600 70 40	100 100 300 500	1 1 1 1	0.62	1.2 500						12
BCX20	TO-236 (49)	30*	25	5	100	20	100 600 70 40	100 100 300 500	1 1 1 1	0.62	1.2 500						12

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)																		
Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE} [*] I _{CE0} (nA) Max	V _{CB} (V) Min	H _{FE} h _{FE} @ 1 kHz [*] Min Max	I _C (mA) Min Max	V _{CE} (V) Min Max	V _{CE(SAT)} (V) & Max	V _{BE(SAT)} V _{BE(ON)} [*] (V) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) @ Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BCX58	TO-92 (97)		32	7	10	32	120 630 80 1000 40	2 5 10 1 100 1					125	10	800	6	(Notes 3 & 4)	10
BCX58-7	TO-92 (97)		32	7	10	32	120 220 80 40	2 5 10 1 100 1					125	10	800	6	(Notes 3 & 4)	10
BCX58-8	TO-92 (97)		32	7	10	32	20 0.01 180 310 120 400 45	5 5 2 5 10 1 100 1					125	10	800	6	(Notes 3 & 4)	10 10 1
BCX58-9	TO-92 (97)		32	7	10	32	40 0.01 250 460 160 630 60	5 5 2 5 10 1 100 1					125	10	800	6	(Notes 3 & 4)	10
BCX58-10	TO-92 (97)		32	7	10	32	100 0.01 380 630 240 1000 60	5 5 2 5 10 1 100 1					125	10	800	6	(Notes 3 & 4)	10
BCX59	TO-92 (97)		45	7			120 630 80 1000 40	2 5 10 1 100 1	0.5	1.0 100			125	10	800		(Note 5)	10
BCX59-7	TO-92 (97)		45	7			120 220 80 40	2 5 10 1 100 1	0.5	1.0 100			125	10	800		(Note 5)	10
BCX59-8	TO-92 (97)		45	7			20 0.01 180 310 120 400 45	5 5 2 5 10 1 100 1	0.5	1.0 100			125	10	800		(Note 5)	10

T-03-01

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CB} (V) Min	V _{CE} [*] V _{CB} (V) Min	V _{BE} (V) Min	I _{CE} [*] I _{CB} (nA) Max	h _{FE} h _{FE} 1 kHz Min Max	I _C (mA) Max	V _{CE} (SAT) (V) & Max	V _{BE} (SAT) V _{BE} (ON) (V) Min Max	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BCX59-9	TO-92 (97)	45	45	7	20	40 250 160 60	0.01 2 100 1	0.5	1.0	100		125	10	800		(Note 5)	10
BCX59-10	TO-92 (97)	45	45	7	20	100 380 240 60	0.01 2 100 1	0.5	1.0	100		125	10	800		(Note 5)	10
BCX70G	TO-236 (49)	45	45	5	20	120 60	2 5 50 1	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	10
BCX70H	TO-236 (49)	45	45	5	20	180 70 20	2 5 50 1 0.01 5	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	10
BCX70J	TO-236 (49)	45	45	5	20	250 90 40	2 5 50 1 0.01 5	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	10
BCX71G	TO-236 (49)	45	45	5	20	120 60	2 5 50 1	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	68
BCX71H	TO-236 (49)	45	45	5	20	180 70 20	2 5 50 1 0.01 5	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	68
BCX71J	TO-236 (49)	45	45	5	20	250 90 40	2 5 50 1 0.01 5	0.55	0.7 1.05	50	4.5	125	10	800	6	(Notes 17, 19)	68
BCX78	TO-92 (97)	32	32	5		120 80 40	2 5 10 1 100 1	0.6	1.0	100	4.5	200	10		6	(Note 1)	68
BCX78-7	TO-92 (97)	32	32	5		120 80 40	2 5 10 1 100 1	0.6	1.0	100	4.5	200	10		6	(Note 1)	68

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} ⁺ V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CES} ⁺ I _{CB0} @ (V) (nA) Max	H _{FE} h _{FE} @ 1 kHz* (mA) Min Max	V _{CE(SAT)} (V) & Max	V _{BE(SAT)} V _{BE(ON)} * (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BCX78-8	TO-92 (97)		32	5		30 0.01 5 180 310 2 5 120 400 10 1 45 100 1	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX78-9	TO-92 (97)		32	5		40 0.01 5 250 460 2 5 160 630 10 1 60 100 1	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX78-10	TO-92 (97)		32	5		100 0.01 5 380 630 2 5 240 1000 10 1 60 100 1	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX79	TO-92 (97)		45	5		80 1000 10 1 40 100 1 120 630 2 5	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX79-7	TO-92 (97)		45	5		120 220 2 5	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX79-8	TO-92 (97)		45	5		120 400 10 1 45 100 1 30 0.01 5 180 310 2 5	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX79-9	TO-92 (97)		45	5		160 630 10 1 60 100 1 40 0.01 5 250 460 2 5	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BCX79-10	TO-92 (97)		45	5		240 1000 10 1 60 100 1 100 0.01 5 380 630 2 5	0.6	1.0 100	10	4.5	200	10		6	(Note 1)	68
BD370A	TO-237 (91)	80	45		100 45	25 500 2 1 40 400 100 1	0.7	1.2* 1A	200 2 5	30	50	200	420	6	(Notes 5 & 6)	78

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} @ V _{CB} (mA) (V) Max	HFE h _{FE} @ 1 kHz Min Max	I _C @ V _{CE} (mA) (V) Min Max	V _{CE(SAT)} (V) & Max	V _{BE(SAT)} (V) & Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BD370A-10	TO-237 (91)	80	45		100 45	25 63 100 160	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370A-16	TO-237 (91)	80	45		100 45	25 100 100 250	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370A-25	TO-237 (91)	80	45		100 45	25 160 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370B	TO-237 (91)	80	60		100 60	25 40 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370B-10	TO-237 (91)	80	60		100 60	25 63 100 160	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370B-16	TO-237 (91)	80	60		100 60	25 100 100 250	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370B-25	TO-237 (91)	80	60		100 60	25 160 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370C	TO-237 (91)	80	80		100 80	25 40 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370C-6	TO-237 (91)	80	80		100 80	25 40 100 100	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370C-10	TO-237 (91)	80	80		100 80	25 63 100 160	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370C-16	TO-237 (91)	80	80		100 80	25 100 100 250	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	78
BD370D	TO-237 (91)	80	100		100 80	25 40 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	38
BD370D-6	TO-237 (91)	80	100		100 80	25 40 100 100	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	38
BD370D-10	TO-237 (91)	80	100		100 80	25 63 100 160	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	38
BD371A	TO-237 (91)	80	45		100 45	25 40 100 400	500 100 2 1	0.7	1.2*	30	50 200	200	420	6	(Notes 5 & 6)	38

T-03-01

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)															
Type No.	Case Style	V _{CE} * V _{CB0} (V) Min	V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} * I _{CB0} @ (V) (mA) Max	H _{FE} h _{FE} @ 1 kHz* (mA) Min Max	V _{CE(SAT)} (V) & Max	V _{BE(SAT)} V _{BE(ON)} * (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) @ I _C (mA) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BD371A-10	TO-237 (91)	80	45		100 45	25 500 63 160 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371A-16	TO-237 (91)	80	45		100 45	25 500 100 250 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371A-25	TO-237 (91)	80	45		100 45	25 500 180 400 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371B	TO-237 (91)	80	60		100 60	25 500 40 400 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371B-10	TO-237 (91)	80	60		100 60	25 500 63 160 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371B-16	TO-237 (91)	80	60		100 60	25 500 100 250 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371B-25	TO-237 (91)	80	60		100 60	25 500 160 400 100	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371C	TO-237 (91)	80	80		100 80	25 500 40 400 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371C-6	TO-237 (91)	80	80		100 80	25 500 40 100 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371C-10	TO-237 (91)	80	80		100 80	25 500 63 160 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371C-16	TO-237 (91)	80	80		100 80	25 500 100 250 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	38
BD371D	TO-237 (91)	80	100		100 100	25 500 40 400 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	39
BD371D-6	TO-237 (91)	80	100		100 100	25 500 40 100 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	39
BD371D-10	TO-237 (91)	80	100		100 100	25 500 63 160 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	39
BD372A	TO-237 (90)	80	45		100 45	25 500 40 400 100 1	0.7	1.2*	1A	30	50 200	420	6	(Notes 5 & 6)	78

T-03-01

T-03-01

Bipolar Pro Electron Series (Continued)

T-03-01

7.

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)																	
Type No.	Case Style	V _{CE} [*] V _{CEO} (V) Min	V _{CE} [*] V _{CEO} (V) Min	V _{EB} [*] V _{EB} (V) Min	I _{CE} [*] I _{CB} @ (V) (nA) Max	h _{FE} h _{FE} @ 1 kHz [*] Min Max	I _C I _C (mA) 2 1	V _{CE} (SAT) (V) & Max	V _{BE} (SAT) V _{BE} (ON) [*] (V) Min Max	I _C I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) @ Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
BD373A-10	TO-237 (90)	80	45		100 45	25 63 160 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373A-16	TO-237 (90)	80	45		100 45	25 100 250 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373A-25	TO-237 (90)	80	45		100 45	25 160 400 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373B	TO-237 (90)	80	80		100 80	25 40 400 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373B-10	TO-237 (90)	80	60		100 80	25 63 160 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373B-16	TO-237 (90)	80	60		100 60	25 100 250 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373B-25	TO-237 (90)	80	60		100 60	25 160 400 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373C	TO-237 (90)	80	80		100 80	25 40 400 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373C-6	TO-237 (90)	80	80		100 80	25 40 100 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373C-10	TO-237 (90)	80	80		100 80	25 63 160 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373C-16	TO-237 (90)	80	80		100 80	25 100 250 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373D	TO-237 (90)	80	100		100 100	25 40 400 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373D-6	TO-237 (90)	80	100		100 100	25 40 100 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BD373D-10	TO-237 (90)	80	100		100 100	25 63 160 100	500 2 100 1	0.7	1.2 [*]	1A	30	50	200	420	6	(Notes 5 & 6)	38
BF240	TO-92 (98)	40	40	4	100 20	65 225 6 12	1 10 7	0.65 0.74 [*]	1	0.34	1	1	1	3.5	(Note 7)	47	

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CB} (V) Min	V _{CE} [*] V _{CB} (V) Min	V _{BO} (V) Min	I _{CS} [*] I _{CB} @ (nA) Max	H _{FE} h _{FE} 1 kHz Min Max	I _C (mA) Min Max	V _{CE} (V) & Max	V _{BE(SAT)} V _{BE(ON)} [*] (V) Min Max	I _C (mA) Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BF241	TO-92 (98)	40	40	4	100	35	125	1	10	0.65	0.74	1	0.34	1	3.5	(Note 7)	47
BF494	TO-92 (98)	30	20	5		65	220	1	10								49
BF495	TO-92 (98)	30	20	5		35	250	1	10								49
BF536	TO-236 (49)	30	30	4	50	25		1	10								42
BF840	TO-236 (49)	40	40	4	100	65	220	1	10								47
BF841	TO-236 (49)	40	40	4	100	35	125	1	10								47
BF936	TO-92 (97)	30	20	4	50	25		1	10						6	(Note 7)	75
BFS18	TO-236 (49)	30	30	5	100	35	125	1	10								49
BFS19	TO-236 (49)	30	30	5	100	65	225	1	10								49
BSR13	TO-236 (49)	60	30	5	30	35	0.1	10	10	0.4	1.3	150	8	250	20		19
BSR14	TO-236 (49)	75	40	6	10	35	0.1	10	10	0.3	0.6	1.2	8	300	20	T-03-01	19
						50	1	10	10	1.0	2.0	500					
						75	10	10	10								
						100	300	150	10								
						50	150	1	10								
						30	500	10	10								

Bipolar Pro Electron Series

Bipolar Pro Electron Series

Bipolar Pro Electron Series (Continued)													
Type No.	Case Style	V _{CE} [*] V _{CE0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE} [*] I _{CE0} @ (nA) Max	H _{FE} h _{FE} 1 kHz [*] Min Max	I _C (mA) @ Min Max	V _{CE} (SAT) (V) Max	V _{BE} (ON) (V) Min Max	I _C (mA) @ Min Max	C _{ob} (pF) Max	f _T (MHz) @ Min Max	t _{off} (ns) Max
BSR15	TO-236 (49)	60	40	5	20	35	0.1	0.4	1.3	150	8	200	100
						50	1						
						75	10	1.6	2.6	500			
						100	300						
						30	500						
BSR16	TO-236 (49)	60	60	5	10	75	0.1	0.4	1.3	150	8	200	100
						100	1						
						100	10	1.6	2.6	500			
						100	300						
						50	500						
BSR17	TO-236 (49)	60	40	6	5 μA	20	0.1	0.2	0.65	0.85	10	250	250
						35	1						
						50	150						
						30	50						
						15	100	0.3	0.95	50			
BSR18	TO-236 (49)	60	40	6	5 μA	20	0.1	0.2	0.65	0.85	10	200	300
						35	1						
						50	150						
						30	50						
						15	100	0.3	0.95	50			
BSR19	TO-236 (49)	160	140	6	100	60	1	0.15	1.0	10	6	100	10
						60	10						
						20	250	0.25	1.2	50			
BSR20	TO-236 (49)	130	120	5	100	30	10	0.2	1.0	10	6	100	10
						40	180						
						40	50	0.5	1.0	50			
BSS38	TO-236 (49)	120	100	5	200	20	4	0.7	1.2	4		60	1000
								3.0		50			
BSS63	TO-236 (49)	110	100	6	100	30	10	0.25	0.9	25		50	25
						30	25						
BSS64	TO-236 (49)	120	80	5	100	20	10	0.15	1.2	4		60	1000
								0.2		50			

T-03-01

Bipolar Pro Electron Series (Continued)

Type No.	Case Style	V _{CE} [*] V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CE} [*] I _{CB0} @ V _{CB} (nA) Max	h _{FE} h _{FE} @ 1 kHz [*] Min Max	V _{CE} (SAT) V _{BE} (ON) [*] @ I _C (V) Max Min Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
BSS79-B	TO-236 (49)	60	40	5	10	50	40 120 150	10	0.4 1.6	150 500	20			19
BSS79-C	TO-236 (49)	60	40	5	100	50	100 300 150	10	0.4 1.6	150 500	20			19
BSS80-B	TO-236 (49)	60	40	5	10	50	40 120 150	10	0.4 1.6	150 500	20			63
BSS80-C	TO-236 (49)	60	40	5	100	50	100 300 150	10	0.4 1.6	150 500	20			63
BSV62	TO-236 (49)	20	12	5	100	10	25 1 1 40 120 10 1 25 50 1	1	0.3 0.25 0.4	10 0.85 1.2	10		(Note 18)	21
BSX39	TO-236 (49)		14		100	12	25 1 1 40 200 10 1 25 50 1	1	0.25 0.7 0.4	0.85 1.2 5	10		(Note 1)	21

TEST CONDITIONS:

- Note 1: I_C = 200 μA, V_{CE} = 5V, f = 1 kHz.
Note 2: I_C = 100 mA, V_{CC} = 20V, I_B¹ = I_B² = 5 mA.
Note 3: I_C = 200 μA, V_{CE} = 2V, f = 1 kHz.
Note 4: I_C = 100 mA, V_{CC} = 10V, I_B¹ = I_B² = 10 mA.
Note 5: I_C = 10 mA, V_{CC} = 3V, I_B¹ = I_B² = 1 mA.
Note 6: I_C = 100 μA, V_{CE} = 5V, f = 1 kHz.
Note 7: I_C = 1 mA, V_{CE} = 10V, f = 200 MHz.
Note 8: I_C = 1 mA, V_{CE} = 5V, f = 1 kHz.
Note 9: I_C = 150 mA, V_{CC} = 6V, I_B¹ = I_B² = 15 mA.
Note 10: I_C = 10 μA, V_{CE} = 5V, f = WB.
Note 11: I_C/I_B = 20.
Note 12: I_C = 200 μA, V_{CE} = 5V, f = 30 Hz to 15 kHz.
Note 13: I_C/I_B = 40.
Note 14: I_C/I_B = 1000.
Note 15: I_C/I_B = 33.
Note 16: I_C = 250 μA, V_{CE} = 5V, f = 10 Hz to 15.7 kHz.
Note 17: I_C = 15 mA, I_B¹ = I_B² = 1 mA.
Note 18: I_C/I_B = 3.3.
Note 19: I_{CE} = 200 μA, V_{CE} = 5V, f = 200 Hz.

T-03-01

Bipolar Pro Electron Series