SMALL SIGNAL TRANSISTOR

$1.00

PRO-ELECTRON CROSS REFERENCE AND SELECTION GUIDE

FAIRCHILD

INDUSTRY TO FAIRCHILD SMALL SIGNAL TRANSISTOR PRO-ELECTRON CROSS REFERENCE

INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FARICHILD EQUIVALENT
BC107	BC317	BC158C	BC308C	BC206B	BC322B
BC107A	BC317A	BC159	BC309	BC206C	BC322C
BC107B	BC317B	BC159B	BC309B	BC207	BC317
BC108	BC318	BC159C	BC309C	BC207A	BC317A
BC108A	BC318A	BC160	BC160	BC207B	BC317B
BC108B	BC318B	BC160-6	BC160-6	BC208	BC318
BC109	BC319	BC160-10	BC160-10	BC208A	BC318A
BC109B	BC319B	BC160-16	BC160-16	BC208B	BC318B
BC109C	BC319C	BC161	BC161	BC208C	BC318C
BC118	BC118	BC161-6	BC161-6	BC209	BC319
BC119	BC119	BC161-10	BC161-10	BC209B	BC319B
BC125	BC125	BC161-16	BC161-16	BC209C	BC319C
BC132	2N3565	BC167A	BC167A	BC212	BC212
BC134	BC118	BC167B	BC167B	BC212A	BC212A
BC135	BC125	BC168A	BC168A	BC212B	BC212B
BC136	BC125	BC168B	BC168B	BC212L	BC212L
BC138	BC119	BC168C	BC168C	BC213	BC308
BC139	BC139	BC169B	BC169B	BC213A	BC308A
BC140	BC140	BC169C	BC169C	BC213B	BC308B
BC140-6	BC140-6	BC170	BC548	BC214	BC309
BC140-10	BC140-10	BC170A	BC548A	BC214B	BC309B
BC140-16	BC140-16	BC170B	BC548B	BC237	BC237
BC141	BC141	BC170C	BC548C	BC237A	BC237A
BC141-6	BC141-6	BC171	BC547	BC237B	BC237B
BC141-10	BC141-10	BC171A	BC547A	BC238	BC238
BC141-16	BC141-16	BC171B	BC547B	BC238A	BC238A
BC142	BC142	BC172	BC548	BC238B	BC238B
BC143	BC143	BC172A	BC548A	BC238C	BC238C
BC144	BC286	BC172B	BC548B	BC239	BC239
BC147	BC237	BC172C	BC548C	BC239B	BC239B
BC147A	BC237A	BC173	BC549	BC239C	BC239C
BC147B	BC237B	BC173B	BC549B	BC251	BC307
BC148	BC238	BC173C	BC549C	BC251A	BC307A
BC148A	BC238A	BC182	BC182	BC251B	BC307B
BC148B	BC238B	BC182A	BC182A	BC251C	BC307C
BC148C	BC238C	BC182B	BC182B	BC252	BC308
BC149	BC239	BC182L	BC182L	BC252A	BC308A
BC149B	BC239B	BC183	BC183	BC252B	BC308B
BC149C	BC239C	BC183A	BC183A	BC252C	BC308C
BC157	BC307	BC183B	BC183B	BC253	BC309
BC157A	BC307A	BC183C	BC183C	BC253B	BC309B
BC157B	BC307B	BC184	BC184	BC253C	BC309C
BC158	BC308	BC184B	BC184B	BC257A	BC257A
BC158A	BC308A	BC184C	BC184C	BC257B	BC257B
BC158B	BC308B	BC206	BC322	BC258A	BC258A

INDUSTRY TO FAIRCHILD SMALL SIGNAL TRANSISTOR PRO-ELECTRON CROSS REFERENCE

INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT
BC258B	BC258B	BC322	BC322	BC360-6	BC160-6
BC258C	BC258C	BC322B	BC322B	BC360-10	BC160-10
BC259B	BC259B	BC322C	BC322C	BC360-16	BC160-16
BC259C	BC259C	BC327	BC327	BC361	BC161
BC270	BC283	BC327-16	BC327-16	BC361-6	BC161-6
BC280	2N930	BC327-25	BC327-25	BC361-10	BC161-10
BC282	BC282	BC328	BC328	BC361-16	BC161-16
BC283	BC283	BC328-16	BC328-16	BC407	BC237
BC284	2N930	BC328-25	BC328-25	BC407A	BC237A
BC286	BC286	BC330	BC330	BC407B	BC237B
BC287	BC287	BC330B	BC330B	BC408	BC238
BC300	2N3020	BC330C	BC330C	BC408A	BC238A
BC301	BC141	BC337	BC337	BC408B	BC238B
BC302	BC140	BC337-16	BC337-16	BC408C	BC238C
BC303	BC141	BC337-25	BC337-25	BC409	BC239
BC304	BC140	BC338	BC338	BC409B	BC239B
BC307	BC307	BC338-16	BC338-16	BC409C	BC239C
BC307A	BC307A	BC338-25	BC338-25	BC413	BC237
BC307B	BC307B	BC340	BC140	BC413B	BC237B
BC308	BC308	BC340-6	BC140-6	BC413C	BC237C
BC308A	BC308A	BC340-10	BC140-10	BC414	BC237
BC308B	BC308B	BC340-16	BC140-16	BC414B	BC237B
BC308C	BC308C	BC341	BC141	BC414C	BC237C
BC309	BC309	BC341-6	BC141-6	BC415	BC307
BC309B	BC309B	BC341-10	BC141-10	BC415A	BC307A
BC309C	BC309C	BC341-16	BC141-16	BC415B	BC307B
BC310	BC286	BC347	BC237	BC415C	BC307C
BC311	BC287	BC347A	BC237A	BC416	BC307
BC317	BC317	BC347B	BC237B	BC416A	BC307A
BC317A	BC317A	BC348	BC238	BC416B	BC307B
BC317B	BC317B	BC348A	BC238A	BC416C	BC307C
BC318	BC318	BC348B	BC238B	BC477	BC477
BC318A	BC318A	BC349	BC239	BC478	BC478
BC318B	BC318B	BC349A	BC239A	BC479	BC479
BC318C	BC318C	BC349B	BC239B	BC485	BC485
BC319	BC319	BC350	BC307	BC485A	BC485A
BC319B	BC319B	BC350A	BC307A	BC485B	BC485B
BC319C	BC319C	BC350B	BC307B	BC486	BC486
BC320	BC320	BC351	BC308	BC486A	BC486A
BC320A	BC320A	BC351A	BC308A	BC486B	BC486B
BC320B	BC320B	BC351B	BC308B	BC487	BC487
BC321	BC321	BC352	BC309	BC487A	BC487A
BC321A	BC321A	BC352A	BC309A	BC487B	BC487B
BC321B	BC321B	BC352B	BC309B	BC488	BC488
BC321C	BC321C	BC360	BC160	BC488A	BC488A

INDUSTRY TO FAIRCHILD SMALL SIGNAL TRANSISTOR PRO-ELECTRON CROSS REFERENCE

INDUSTRY TYPE	FAIRCHILD EQUIVALENT
BC488B	BC488B
BC489	BC489
BC489A	BC489A
BC489B	BC489B
BC490	BC490
BC490A	BC490A
BC490B	BC490B
BC512	BC307
BC512A	BC307A
BC512B	BC307B
BC513	BC308
BC513A	BC308A
BC513B	BC308B
BC513C	BC308C
BC514	BC309
BC514B	BC309B
BC514C	BC309C
BC520	BC520
BC520B	BC520B
BC520C	BC520C
BC521	BC521
BC521C	BC521C
BC521D	BC521D
BC522	BC522
BC522C	BC522C
BC522D	BC522D
BC522E	BC522E
BC526	BC526
BC526A	BC526A
BC526B	BC526B
BC526C	BC526C
BC527	BC527
BC527-6	BC527-6
BC527-10	BC527-10
BC527-16	BC527-16
BC528	BC528
BC528-6	BC528-6
BC528-10	BC528-10
BC528-16	BC528-16
BC530	BC530
BC531	BC531
BC532	BC532
BC533	BC533
BC534	BC534
BC535	BC535
BC537	BC537
BC537-6	BC537-6
BC537-10	BC537-10
BC537-16	BC537-16
BC537-25	BC537-25
BC538	BC538
BC538-6	BC538-6
BC538-10	BC538-10
BC538-16	BC538-16
BC538-25	BC538-25
BC547	BC547
BC547A	BC547A
BC547B	BC547B
BC547C	BC547C
BC548	BC548
BC548A	BC548A
BC548B	BC548B
BC548C	BC548C
BC549	BC549
BC549B	BC549B
BC549C	BC549C
BC550	BC550
BC550B	BC550B
BC550C	BC550C
BC557	BC557
BC557A	BC557A
BC557B	BC557B
BC557C	BC557C
BC558	BC558
BC558A	BC558A
BC558B	BC558B
BC558C	BC558C
BC559	BC559
BC559B	BC559B
BC559C	BC559C
BC560	BC560
BC560B	BC560B
BC560C	BC560C
BC582A	BC547A
BC582B	BC547B
BC583A	BC548A
BC583B	BC548B
BC583C	BC548C
BC584B	BC549B
BC584C	BC549C
BC727	BC727
BC727-6	BC727-6
BC727-10	BC727-10
BC727-16	BC727-16
BC728	BC728
BC728-6	BC728-6
BC728-10	BC728-10
BC728-16	BC728-16
BC737	BC737
BC737-6	BC737-6
BC737-10	BC737-10
BC737-16	BC737-16
BC738	BC738
BC738-6	BC738-6
BC738-10	BC738-10
BC738-16	BC738-16
BCY42	2N2221
BCY43	2N2222
BCY58	2N3947
BCY59	2N3947
BCY65E	2N3947
BCY78	2N3962
BCY78IX	2N3964
BCY78VII	2N3962
BCY68VIII	2N3964
BCY78X	2N3964
BCY79	2N3962
BCY79IX	2N3964
BCY79VII	2N3962
BCY79VIII	2N3964
BFR10	2N2218A
BFR11	2N2221A
BFR16	2N2484
BFR17	2N3117
BFR19	2N3110
BFR20	2N3109
BFR21	2N3108
BFR22	2N1893
BFR23	2N4031
BFR24	2N4032
BFR39	BC538
BFR40	BC537
BFR41	BC537
BFR79	BC528
BFR80	BC527

INDUSTRY TO FAIRCHILD SMALL SIGNAL TRANSISTOR PRO-ELECTRON CROSS REFERENCE

INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT
BFR81	BC527	BFX68	2N1711	BSW26	2N4047
BFR86	BC532	BFX68A	2N1711	BSW27	2N4047
BFR87	BC533	BFX69	2N1613	BSW28	2N4047
BFR88	MPSA42	BFX69A	2N3110	BSW29	2N4046
BFR89	MPSA42	BFX73	2N918	BSW41	2N2221
BFW20	2N3962	BFX75	2N1132	BSW42	BC317
BFW22	2N3964	BFX84	2N3108	BSW43	BC318
BFW23	2N3965	BFX85	2N3107	BSW44	BC321
BFW29	2N2219A	BFX86	2N3109	BSW45	BC322
BFW31	2N2907	BFX87	2N2904A	BSW65	2N3019
BFW32	2N2222	BFX88	2N2904	BSW66	2N3019
BFW33	2N1893	BFX93	2N930	BSW70	2N2222
BFW36	2N3114	BFX93A	2N2484	BSW72	2N2906
BFW37	2N3114	BFX94	2N2221	BSW73	2N2907
BFW39	2N2915	BFX95	2N2222	BSW74	2N2906
BFW39A	2N2919A	BFX96	2N2218	BSW75	2N2907
BFW40	2N2916	BFX97	2N2219	BSW82	2N2221
BFW41	2N918	BFY50	BFY50	BSW83	2N2222
BFW57	PE6020	BFY51	BFY51	BSW84	2N2221
BFW58	PE6020	BFY52	BFY52	BSW85	2N2222
BFW59	PE6020	BFY56	BFY56	BSW88	PN3694
BFW60	PE6020	BFY64	BFY64	BSW89	PN3694
BFW66	2N2219A	BFY72	2N2218A	BSX20	BSX20
BFW68	2N2222A	BFY74	2N915	BSX26	BSX26
BFX11	2N3726	BFY75	2N915	BSX28	BSX28
BFX12	2N2894	BFY77	2N930	BSX29	BSX29
BFX13	2N2894	BSS10	2N3013	BSX32	BSX32
BFX17	2N3725	BSS11	2N2369A	BSX36	2N2906
BFX29	2N2905A	BSS12	2N3011	BSX39	BSX39
BFX30	2N2905A	BSS30	2N1893	BSX48	2N4013
BFX35	2N3504	BSS31	2N3019	BSX49	2N4013
BFX36	2N4024	BSS32	2N1893	BSX59	2N3725
BFX37	BFX37	BSV77	2N3725	BSX60	2N3724
BFX38	BFX38	BSV89	2N2368	BSX61	2N3725
BFX39	BFX39	BSV90	2N2369	BSX76	2N2369
BFX40	BFX40	BSV91	2N2369A	BSX77	2N2369
BFX41	BFX41	BSV92	2N3011	BSX78	2N2369
BFX43	2N2369	BSW11	PN3646	BSX87	2N914
BFX44	2N2368	BSW12	PN3646	BSX87A	2N708
BFX45	2N2222	BSW19	2N3014	BSX88	2N708
BFX50	2N2222A	BSW21	2N2906	BSX88A	2N914
BFX51	2N2221A	BSW22	2N2907	BSX92	2N2368
BFX52	2N2222A	BSW23	2N2904	BSX93	2N2369
BFX62	2N918	BSW24	2N2906	BSY19	2N708
BFX63	2N3962	BSW25	2N2894A	BSY51	2N697

INDUSTRY TO FAIRCHILD SMALL SIGNAL TRANSISTOR PRO-ELECTRON CROSS REFERENCE

INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT	INDUSTRY TYPE	FAIRCHILD EQUIVALENT
BSY52	2N1711	BSY55	2N1893	BSY79	2N3114
BSY53	2N1613	BSY56	2N3019	BSY95	2N2369
BSY54	2N1711	BSY78	2N2222	BSY95A	2N2369

SELECTION GUIDE

SMALL SIGNAL GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	h_{FE} (h_{fe}) MIN-MAX @ I_C mA	$V_{CE(sat)}$ V @ I_C MAX mA	C_{ob} pF MAX	f_T MHz MIN	t_{off} ns MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
BFY52	20	60 @ 150	0.35 @ 150	12	200		800	2.86	TO-39
BC738	25	40-250 @ 100	0.50 @ 1000	45	100		1120	3.4	TO-92—EBC
BC738-6	25	40-100 @ 100	0.50 @ 1000	45	100		1120	3.4	TO-92—EBC
BC738-10	25	63-163 @ 100	0.50 @ 1000	45	100		1120	3.4	TO-92—EBC
BC738-16	25	100-250 @ 100	0.50 @ 1000	45	100		1120	3.4	TO-92—EBC
BC338	25	100-600 @ 100	0.70 @ 500	12 (TYP)	100 (TYP)		625		TO-92—CBE
BC338-16	25	100-250 @ 100	0.70 @ 500	12 (TYP)	100 (TYP)		625		TO-92—CBE
BC338-25	25	160-400 @ 100	0.70 @ 500	12 (TYP)	100 (TYP)		625		TO-92—CBE
2N718	28	40-120 @ 150	1.50 @ 150	35	50		400	1.5	TO-18
BC282	30	50-300 @ 50	0.50 @ 50	5.5 (TYP)			400	1.30	TO-18
BC125	30	30 @ 150	0.25 @ 150	25	40		300	0.8	TO-39
BFY51	30	40 @ 150	0.35 @ 150	12	50		800	2.86	TO-39
BC119	30	40-120 @ 150	0.35 @ 150	25	40		800	5.0	TO-39
2N2218	30	40-120 @ 150	0.40 @ 150	8.0	250		800	3.0	TO-39
2N2221	30	40-120 @ 150	0.40 @ 150	8.0	250		500	1.8	TO-18
2N3300	30	100-300 @ 150	0.22 @ 150	8.0	250	150	800	3.0	TO-39
2N3302	30	100-300 @ 150	0.22 @ 150	8.0	250	150	360	1.8	TO-18
2N2219	30	100-300 @ 150	0.40 @ 150	8.0	250		800	3.0	TO-39
2N2227	30	100-300 @ 150	0.40 @ 150	8.0	250		500	1.8	TO-18
BC737	35	40-250 @ 100	0.75 @ 1000	45	100		1120	3.4	TO-92—EBC
BC737-6	35	40-100 @ 100	0.75 @ 1000	45	100		1120	3.4	TO-92—EBC
BC737-10	35	63-160 @ 100	0.75 @ 1000	45	100		1120	3.4	TO-92—EBC
BC737-16	35	100-250 @ 100	0.75 @ 1000	45	100		1120	3.4	TO-92—EBC
2N3947	40	100-300 @ 10	0.20 @ 10	4.0	300	450	360	1.2	TO-18
BC140	40	40-400 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC140-6	40	40-100 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC140-10	0	63-160 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC140-16	40	100-250 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
2N2218A	40	40-120 @ 150	0.30 @ 150	8.0	250	285	800	3.0	TO-39
2N2221A	40	40-120 @ 150	0.30 @ 150	8.0	250	285	500	1.8	TO-18
2N697	(40)	40-120 @ 150	1.50 @ 150	35	50		600	2.0	TO-39
2N2219A	40	100-300 @ 150	0.30 @ 150	8.0	300	285	800	3.0	TO-39
2N2222A	40	100-300 @ 150	0.30 @ 150	8.0	300	285	500	1.8	TO-18
2N3109	40	100-300 @ 150	0.25 @ 150	25	70	285	800	3.0	TO-39
2N3110	40	40-120 @ 150	0.25 @ 150	25	60		800	5.0	TO-39

SMALL SIGNAL GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

NPN

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	h_{FE} (h_{fe}) MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V @ I_C MAX mA	C_{ob} pF MAX	f_T MHz MIN	t_{off} ns MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
PN3694	45	100-400	@ 10		3.5	200		625	1.0	TO-92 — EBC
BFY64	45	30-150	@ 150	0.30 @ 150	2.5	40	625	800	5.0	TO-39
BC118	45	40-160	@ 10		3.5	200		310	0.8	TO-18
2N2270	45	50-200	@ 150	0.90 @ 150	15	100		1000	5.0	TO-39
BC337	45	100-600	@ 100	0.70 @ 500	5 (TYP)	200 (TYP)		625		TO-92 — CBE
BC337-16	45	100-250	@ 100	0.70 @ 500	5 (TYP)	200 (TYP)		625		TO-92 — CBE
BC337-25	45	160-400	@ 100	0.70 @ 500	12 (TYP)	100 (TYP)		625		TO-92 — CBE
BC485	45	60-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC485A	45	100-250	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC485B	45	160-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
2N915	50	50-200	@ 10	1.00 @ 10	3.5	250		360	1.2	TO-18
2N718A	(50)	40-120	@ 150	1.50 @ 150	25	60		500	1.8	TO-18
2N1613	(50)	40-120	@ 150	1.50 @ 150	25	80		800	3.0	TO-39
2N3053	(50)	50-250	@ 150	1.40 @ 150	15	100			5.0	TO-39
2N1711	(50)	100-300	@ 150	1.50 @ 150	25	70		800	3.0	TO-39
BC537	60	40-400	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC537-6	60	40-100	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC141	60	40-400	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC141-6	60	40-100	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC537-10	60	63-160	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC141-10	60	63-160	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC537-16	60	100-250	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC141-16	60	100-250	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC537-25	60	160-400	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
2N3107	60	100-300	@ 150	0.25 @ 150	20	70		800	5.0	TO-18
2N3108	60	40-120	@ 150	0.25 @ 150	20	60		800	5.0	TO-39
PE6020	60	100-300	@ 150	0.18 @ 150	15	250		625	1.0	TO-92 — EBC
2N5856	60	50-300	@ 150	0.40 @ 150	12	12	200	750		TO-39
BC142	60	20	@ 200	0.40 @ 200				800	5.0	TO-39
BC286	60	20-180	@ 500	0.40 @ 500	12 (TYP)	100 (TYP)		800	4.0	TO-39
BC487	60	60-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC487A	60	100-250	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC487B	60	160-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC489	80	60-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC489A	80	100-250	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE

SMALL SIGNAL GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	h_{FE} (h_{fe}) MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V @ I_C MAX mA	C_{ob} pF MAX	f_T MHz MIN	t_{off} ns MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
NPN										
BC489B	80	160-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92—CBE
BC535	80	50	@ 100	0.25 @ 100		50		625	1.0	TO-92—EBC
BC538	80	40-400	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92—EBC
BC538-6	80	40-100	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92—EBC
BC538-10	80	63-160	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92—EBC
BC536-16	80	100-250	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92—EBC
BC538-25	80	160-400	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92—EBC
2N3020	80	40-120	@ 150	0.20 @ 150	12	80		800	5.0	TO-39
2N1893	80	40-120	@ 150	5.00 @ 150	15	50		800	3.0	TO-39
2N3019	80	100-300	@ 150	0.20 @ 150	12	100		800	5.0	TO-39
2N2405	90	60-200	@ 150	0.50 @ 150	15	200		800	2.4	TO-39
PNP										
BC728-6	25	40-100	@ 100	0.50 @ 1000	45	100		1230	4.17	TO-92—EBC
BC728	25	40-250	@ 100	0.50 @ 1000	45	100		1230	4.17	TO-92—EBC
BC728-10	25	63-160	@ 100	0.50 @ 1000	45	100		1230	4.17	TO-92—EBC
BC728-16	25	100-250	@ 100	0.50 @ 1000	45	100		1230	4.17	TO-92—ECB
BC328	25	100-600	@ 100	0.70 @ 500	8 (TYP)	100 (TYP)		625		TO-92—CBE
BC328-16	25	100-250	@ 100	0.70 @ 500	8 (TYP)	100 (TYP)		625		TO-92—CBE
BC328-25	25	160-400	@ 100	0.70 @ 500	8 (TYP)	100 (TYP)		625		TO-92—CBE
BC283	30	40-270	@ 50	0.30 @ 50	7 (TYP)	200 (TYP)		400	1.3	TO-18
BC727-6	35	40-100	@ 100	0.75 @ 1000	45	100		1230	4.17	TO-92—EBC
BC727	35	40-250	@ 100	0.75 @ 1000	45	100		1230	4.17	TO-92—EBC
BC727-10	35	63-160	@ 100	0.75 @ 1000	45	100		1230	4.17	TO-92—EBC
BC727-16	35	100-200	@ 100	0.75 @ 1000	45	100		1230	4.17	TO-92—EBC
2N1132	35	30-90	@ 150	1.50 @ 150	45	60		600	2.0	TO-39
BC139	40	40	@ 50	1.20 @ 500	10	40		700	3.0	TO-39
2N3250	40	50-150	@ 10	0.25 @ 10	6.0	250	225	360	1.2	TO-18
BFY64	40	80	@ 10	0.30 @ 50	10	200	120	700	3.0	TO-39
2N3251	40	100-300	@ 10	0.25 @ 10	6.0	300	250	360	1.2	TO-18
BC160	40	40-400	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC160-6	40	40-100	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC160-10	40	63-160	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC160-16	40	100-250	@ 100	1.40 @ 1000	25	50		800	5.0	TO-39
2N2904	40	40-120	@ 150	0.40 @ 150	8.0	200	110	600	3.0	TO-39
2N2906	40	40-120	@ 150	0.40 @ 150	8.0	200	110	400	1.8	TO-18

SMALL SIGNAL GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS BY ASCENDING V_{CEO}

PNP

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	h_{FE} (h_{fe}) @ I_C MIN-MAX mA	$V_{CE(sat)}$ V @ I_C MAX mA	C_{ob} pF MAX	f_T MHz MIN	T_C ns MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
2N4037	40	50-250 @ 150	1.40 @ 150		60		1000		TO-39
2N2905	40	100-300 @ 150	0.40 @ 150	8.0	200	110	600	3.0	TO-39
2N2907	40	100-300 @ 150	0.40 @ 150	8.0	200	110	400	1.8	TO-18
BCY70	40	50 @ 10	0.25 @ 10	6.0	200		360	1.2	TO-18
BC327	45	100-600 @ 100	0.70 @ 500	8 (TYP)	100 (TYP)		625		TO-92 — CBE
BC327-25	45	160-400 @ 100	0.70 @ 500	8 (TYP)	100 (TYP)		625		TO-92 — CBE
BC486	45	60-400 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC486A	45	100-250 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC486B	45	160-400 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BCY71	45	100-600 @ 10	0.25 @ 10	6.0	200		360	1.2	TO-18
2N3502	45	115-300 @ 50	0.25 @ 50	8.0	200	100	700	3.0	TO-39
2N3504	45	115-300 @ 50	0.25 @ 50	8.0	200	100	400	1.3	TO-18
BFX38	55	85 @ 100	0.50 @ 500	20	100	400	8	4.0	TO-39
BFX39	55	40 @ 100	0.50 @ 500	20	100	400	800	4.0	TO-39
BC488	60	60-400 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC488A	60	100-250 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
BC488B	60	160-400 @ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625		TO-92 — CBE
2N3250A	60	50-150 @ 10	0.25 @ 10	6.0	250	225	360	1.2	TO-18
2N3251A	60	100-300 @ 10	0.25 @ 10	6.0	300	250	360	1.2	TO-18
2N3503	60	115-300 @ 50	0.25 @ 50	8.0	200	100	700	3.0	TO-39
2N3505	60	115-300 @ 50	0.25 @ 50	8.0	200	100	400	1.3	TO-18
BC527-6	60	40-100 @ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
2N4030	60	40-120 @ 100	0.15 @ 150	20	100		800	4.0	TO-39
BC161-6	60	40-100 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC527	60	40-400 @ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC161	60	40-400 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC527-10	60	63-160 @ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC161-10	60	63-160 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
BC527-16	60	100-250 @ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC161-16	60	100-250 @ 100	1.40 @ 1000	25	50		800	5.0	TO-39
2N4032	60	100-300 @ 100	0.15 @ 150	20	150		800	4.0	TO-39
2N5855	60	50-200 @ 150	0.40 @ 150	15			750		TO-39
2N2904A	60	40-120 @ 150	0.40 @ 150	8.0	200	110	600	3.0	TO-39
2N2906A	60	40-120 @ 150	0.40 @ 150	8.0	200	110	400	1.8	TO-18
2N2905A	60	100-300 @ 150	0.40 @ 150	8.0	200	110	600	3.0	TO-39

SMALL SIGNAL GENERAL PURPOSE AMPLIFIER AND SWITCHING TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

PNP

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	h_{FE} (h_{fe}) MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V @ I_C MAX mA	C_{ob} pF MAX	f_T MHz MIN	t_{off} ns MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
2N2907A	60	100-300	@ 150	0.40 @ 150	8.0	200	110	400	1.8	TO-18
BC143	60	20	@ 200	0.60 @ 200				700	3.0	TO-39
BC287	60	20-200	@ 500	0.45 @ 500	13 (TYP)	200 (TYP)		800	4.0	TO-39
2N4036	65	20-200	@ 150	0.65 @ 150		60	700		7.0	TO-39
BFX41	75	40	@ 100	0.50 @ 500	20	100	400	800	4.0	TO-39
BFX40	75	60	@ 500	0.50 @ 500	20	150		800	4.0	TO-39
2N4031	80	40-120	@ 100	0.15 @ 150	20	100		800	4.0	TO-39
BC534	80	50	@ 10	0.25 @ 100	50			625	1.0	TO-92 — EBC
BC490	80	60-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC490A	80	100-200	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC490B	80	160-400	@ 100	0.50 @ 500	7 (TYP)	200 (TYP)		625	1.0	TO-92 — CBE
BC528-6	80	40-100	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC528	80	40-400	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
BC528-10	80	63-160	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC
2N4033	80	100-300	@ 100	0.15 @ 150	20	150		800	4.0	TO-39
BC528-16	80	100-250	@ 100	0.50 @ 1000	15	100		625	1.0	TO-92 — EBC

SMALL SIGNAL LOW LEVEL, LOW NOISE AMPLIFIER TRANSISTORS BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} MIN-MAX	@ I_C mA	h_{FE} MIN-MAX	@ I_C mA	NF dB MAX	@ f kHz	NF dB @ f MAX kHz	PACKAGE TYPE
BC168A	20	90 (TYP)	@ 0.01	120-220	@ 2.0	10	@ 1.0		TO-92 — ECB
BC168B	20	150 (TYP)	@ 0.01	180-460	@ 2.0	10	@ 1.0		TO-92 — ECB
BC168C	20	270 (TYP)	@ 0.01	380-800	@ 2.0	10	@ 1.0		TO-92 — ECB
BC169B	20	150 (TYP)	@ 0.01	180-460	@ 2.0	4	@ 1.0		TO-92 — ECB
BC169C	20	270 (TYP)	@ 0.01	380-800	@ 2.0	4	@ 1.0		TO-92 — ECB
BC238	20			120-800	@ 2.0	10	@ 1.0		TO-92 — CBE
BC238A	20	90 (TYP)	@ 0.01	120-220	@ 2.0	10	@ 1.0		TO-92 — CBE
BC238B	20	150 (TYP)	@ 0.01	180-460	@ 2.0	10	@ 1.0		TO-92 — CBE
BC238C	20	270 (TYP)	@ 0.01	380-800	@ 2.0	10	@ 1.0		TO-92 — CBE
BC239	20			180-800	@ 2.0	4	@ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC239B	20	150 (TYP)	@ 0.01	180-460	@ 2.0	4	@ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC239C	20	270 (TYP)	@ 0.01	380-800	@ 2.0	4	@ 1.0	4.0 @ WIDEBAND	TO-92 — CBE

SMALL SIGNAL LOW LEVEL, LOW NOISE AMPLIFIER TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} MIN-MAX	@ I_C mA	h_{FE} MIN-MAX	@ I_C mA	NF dB MAX	@ f kHz	NF dB @ f MAX kHz	PACKAGE TYPE
BC319	20	150 (TYP)	@ 0.01	200-800	@ 2.0	4.0	@ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC319B	20	150 (TYP)	@ 0.01	200-450	@ 2.0	4.0	@ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC319C	20	270 (TYP)	@ 0.01	420-800	@ 2.0	4.0	@ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC522	20			400-2000	@ 2.0	3.0	@ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC522C	20			400-800	@ 2.0	3.0	@ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC522D	20			750-1550	@ 2.0	3.0	@ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC522E	20			1200-2200	@ 2.0	3.0	@ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC548	20			120-800	@ 2.0	10	@ 1.0		TO-92 — CBE
BC548A	20	90 (TYP)	@ 0.01	120-220	@ 2.0	10	@ 1.0		TO-92 — CBE
BC548B	20	150 (TYP)	@ 0.01	180-450	@ 2.0	10	@ 1.0		TO-92 — CBE
BC548C	20	270 (TYP)	@ 0.01	380-800	@ 2.0	10	@ 1.0		TO-92 — CBE
BC549	20			180-800	@ 2.0			4.0 @ WIDEBAND	TO-92 — CBE
BC549B	20	150 (TYP)	@ 0.01	180-460	@ 2.0			4.0 @ WIDEBAND	TO-92 — CBE
BC549C	20	270 (TYP)	@ 0.01	380-800	@ 2.0			4.0 @ WIDEBAND	TO-92 — CBE
PN3565	25	70	@ 0.1	150-600	@ 1.0			4.0 @ WIDEBAND	TO-92 — EBC
BC183	30			110-800	@ 2.0	6	@ 1.0		TO-92 — CBE
BC183A	30	90 (TYP)	@ 0.01	110-220	@ 2.0	6	@ 1.0		TO-92 — CBE
BC183B	30	150 (TYP)	@ 0.01	200-450	@ 2.0	6	@ 1.0		TO-92 — CBE
BC183C	30	270 (TYP)	@ 0.01	420-800	@ 2.0	6	@ 1.0		TO-92 — CBE
BC184	30			200-800	@ 2.0	4	@ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC184B	30	150 (TYP)	@ 0.01		@ 2.0	4	@ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC184C	30	270 (TYP)	@ 0.01	420-800	@ 2.0	4	@ 10	4.0 @ WIDEBAND	TO-92 — CBE
BC318	30	90 (TYP)	@ 0.01	110-800	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC318A	30	90 (TYP)	@ 0.01	110-220	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC318B	30	150 (TYP)	@ 0.01	200-450	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC318C	30	270 (TYP)	@ 0.01	420-800	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC167A	45	90 (TYP)	@ 0.01	120-220	@ 2.0	10	@ 1.0		TO-92 — ECB
BC167B	45	150 (TYP)	@ 0.01	180-460	@ 2.0	10	@ 1.0		TO-92 — ECB
BC237	45			120-460	@ 2.0	10	@ 1.0		TO-92 — CBE
BC237A	45	90 (TYP)	@ 0.01	120-270	@ 2.0	10	@ 1.0		TO-92 — CBE
BC237B	45	150 (TYP)	@ 0.01	180-460	@ 2.0	10	@ 1.0		TO-92 — CBE
BC317	45	90 (TYP)	@ 0.01	110-450	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC317A	45	90 (TYP)	@ 0.01	110-220	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC317B	45	150 (TYP)	@ 0.01	200-450	@ 2.0	6.0	@ 1.0		TO-92 — EBC
BC330	45			220-450	@ 2.0			2.0 @ WIDEBAND	TO-92 — CBE
2N930	45	100-300	@ 0.01	600	@ 10			3.0 @ WIDEBAND	TO-18

SMALL SIGNAL LOW LEVEL, LOW NOISE AMPLIFIER TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} @ I_C MIN-MAX mA	h_{FE} @ I_C MIN-MAX mA	NF dB @ f MAX kHz	NF dB @ f MAX kHz	PACKAGE TYPE
BC547	45		120-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC547A	45	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — CBE
BC547B	45	150 (TYP)	180-450 @ 2.0	10 @ 1.0		TO-92 — CBE
BC547C	45	270 (TYP) @ 0.01	380-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC550	45		200-800 @ 2.0		3.0 @ WIDEBAND	TO-92 — CBE
BC550B	45	150 (TYP) @ 0.01	200-450 @ 2.0		3.0 @ WIDEBAND	TO-92 — CBE
BC550C	45	270 (TYP) @ 0.01	420-800 @ 2.0		3.0 @ WIDEBAND	TO-92 — CBE
BC521	45	600-1400 @ 10	350 @ 0.01	3.0 @ 1.0		TO-92 — EBC
BC521C	45	380-800 @ 2.0	350 @ 0.01	3.0 @ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC521D	45	750-1500 @ 2.0	350 @ 0.01	3.0 @ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC182	50		120-460 @ 2.0	10 @ 1.0		TO-92 — CBE
BC182A	50	170 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — CBE
BC182B	50	290 (TYP) @ 0.01	180-460 @ 2.0	10 @ 1.0		TO-92 — CBE
BC182L	50	170 (TYP) @ 0.01	120-460 @ 2.0	10 @ 1.0		TO-92 — ECB
2N2464	60	100-500 @ 0.01	250 @ 1.0	2.0 @ 10	3.0 @ WIDEBAND	TO-18
BC520	60	150-700 @ 10	100 @ 0.01	3.0 @ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC520B	60	180-460 @ 2.0	100 @ 0.01	3.0 @ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
BC520C	60	380-800 @ 2.0	100 @ 0.01	3.0 @ 1.0	3.0 @ WIDEBAND	TO-92 — EBC
2N3117	60	250-500 @ 0.01	400 @ 1.0	1.0 @ 1.0	1.0 @ 1.0	TO-18

PNP

BC309	20	90 (TYP) @ 0.01	120-460 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC309B	20	90 (TYP) @ 0.01	120-220 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC309C	20	270 (TYP) @ 0.01	180-460 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — CBE
BC259B	20	150 (TYP)	180-460 @ 2.0	4.0 @ 1.0	2.0 @ WIDEBAND	TO-92 — CBE
BC259C	20	270 (TYP) @ 0.01	380-800 @ 2.0	4.0 @ 1.0	2.0 @ WIDEBAND	TO-92 — ECB
BC322	20	150 (TYP) @ 0.01	200-800 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC322B	20	150 (TYP) @ 0.01	200-450 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC322C	20	150 (TYP) @ 0.01	400-800 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC308	25	90 (TYP) @ 0.01	70-460 @ 2.0	10 @ 1.0		TO-92 — CBE
BC308A	25	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — CBE
BC308B	25	270 (TYP) @ 0.01	180-460 @ 2.0	10 @ 1.0		TO-92 — CBE
BC308C	25	270 (TYP) @ 0.01	380-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC258A	25	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — ECB
BC258B	25	150 (TYP) @ 0.01	180-460 @ 2.0	10 @ 1.0		TO-92 — ECB
BC258C	25	270 (TYP) @ 0.01	380-800 @ 2.0	10 @ 1.0		TO-92 — ECB
BC558	25		120-800 @ 2.0	10 @ 1.0		TO-92 — CBE

SMALL SIGNAL LOW LEVEL, LOW NOISE AMPLIFIER TRANSISTORS
BY ASCENDING V_{CEO}

PNP

DEVICE TYPE	V_{CEO} V MIN	h_{FE} @ I_C MIN-MAX mA	h_{FE} @ I_C MIN-MAX mA	NF dB @ f MAX kHz	NF dB @ f MAX kHz	PACKAGE TYPE
BC558A	25	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — CBE
BC558B	25	150 (TYP) @ 0.01	180-450 @ 2.0	10 @ 1.0		TO-92 — CBE
BC558C	25	270 (TYP) @ 0.01	380-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC559	25		200-800 @ 2.0		4.0 @ WIDEBAND	TO-92 — CBE
BC559B	25	150 (TYP) @ 0.01	200-450 @ 2.0		4.0 @ WIDEBAND	TO-92 — CBE
BC559C	25	270 (TYP) @ 0.01	420-800 @ 2.0		4.0 @ WIDEBAND	TO-92 — CBE
BC321	30	80 (TYP) @ 0.01	110-800 @ 2.0	6.0 @ 1.0		TO-92 — EBC
BC321A	30	80 (TYP) @ 0.01	400-800 @ 2.0	6.0 @ 1.0		TO-92 — EBC
BC321B	30	150 (TYP) @ 0.01	200-450 @ 2.0	6.0 @ 1.0		TO-92 — EBC
BC478	40		100-450 @ 2.0			TO-18
BC479	40		200-450 @ 2.0			TO-18
BC257A	45	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — ECB
BC257B	45	150 (TYP) @ 0.01	180-460 @ 2.0	10 @ 1.0		TO-92 — ECB
BC307	45	90 (TYP) @ 0.01	70-460 @ 2.0			TO-92 — CBE
BC307A	45	90 (TYP) @ 0.01	120-220 @ 2.0			TO-92 — CBE
BC307B	45	270 (TYP) @ 0.01	180-460 @ 2.0			TO-92 — CBE
BC320	45	80 (TYP) @ 0.01	110-450 @ 2.0	6.0 @ 1.0		TO-92 — EBC
BC320A	45	80 (TYP) @ 0.01	110-220 @ 2.0	6.0 @ 1.0		TO-92 — EBC
BC320B	45	150 (TYP) @ 0.01	200-450 @ 2.0	6.0 @ 1.0		TO-92 — EBC
2N3964	45	180 @ 0.001	250-500 @ 0.01	2.0 @ 1.0	4.0 @ 0.1	TO-18
BC557	45		120-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC557A	45	90 (TYP) @ 0.01	120-220 @ 2.0	10 @ 1.0		TO-92 — CBE
BC557B	45	150 (TYP) @ 0.01	180-450 @ 2.0	10 @ 1.0		TO-92 — CBE
BC557C	45	270 (TYP) @ 0.01	380-800 @ 2.0	10 @ 1.0		TO-92 — CBE
BC560	45		200-800 @ 2.0		2.0 @ WIDEBAND	TO-92 — CBE
BC560B	45	150 (TYP) @ 0.01	200-450 @ 2.0		2.0 @ WIDEBAND	TO-92 — CBE
BC560C	45	270 (TYP) @ 0.01	420-800 @ 2.0		2.0 @ WIDEBAND	TO-92 — CBE
BC212L	50	170 (TYP) @ 0.01	120-460 @ 2.0	10 @ 1.0		TO-92 — ECB
BC526	50	40 @ 0.01	100-600 @ 2.0			TO-92 — EBC
BC526A	50	40 @ 0.01	100-300 @ 2.0		10 @ WIDEBAND	TO-92 — EBC
BC526B	50	40 @ 0.01	200-400 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
BC526C	50	40 @ 0.01	350-600 @ 2.0	4.0 @ 1.0	4.0 @ WIDEBAND	TO-92 — EBC
2N3965	60	180 @ 0.001	250-500 @ 0.01	2.0 @ 1.0	4.0 @ 0.1	TO-18
BFX37	60	70-300 @ 0.01	100 @ 1.0	3.0 @ 1.0	3.0 @ WIDEBAND	TO-18
2N3962	60	60 @ 0.001	100-300 @ 0.01	3.0 @ 1.0	10 @ 0.1	TO-18
BC477	80	50-220 @ 2.0				TO-18

SMALL SIGNAL HIGH SPEED SATURATED SWITCHING TRANSISTORS BY ASCENDING V_{CEO} (cont'd)

NPN

DEVICE TYPE	V_{CEO} (V_{CER}) V MIN	t_s (t_{off}) ns @ I_C MAX mA	h_{FE} MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V @ I_C MAX mA	f_T MHz MIN	C_{ob} pF MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
BSX28	12	13 @ 10	30-120	@ 10	0.20 @ 10	400	4.0	360	1.2	TO-18
2N3011	12	13 @ 10	30-120	@ 10	0.20 @ 10	400	4.0	360	1.2	TO-18
2N2368	15	10 @ 10	20-60	@ 10	0.25 @ 10	400	4.0	360	1.2	TO-18
2N2369	15	13 @ 10	40-120	@ 10	0.25 @ 10	500	4.0	360	1.2	TO-18
2N2369A	15	13 @ 10	40-120	@ 10	0.20 @ 10	500	4.0	360	1.2	TO-18
BSX26	15	13 @ 10	40-120	@ 10	0.25 @ 10	500	4.0	360	1.2	TO-18
2N3009	15	18 @ 10	30-120	@ 30	0.18 @ 30	350	5.0	360	1.2	TO-52
2N3013	15	18 @ 10	30-120	@ 30	0.18 @ 30	350	5.0	360	1.2	TO-52
PN3646	15	18 @ 10	30-120	@ 30	0.20 @ 30	350	5.0	200	0.5	TO-92 — EBC
BSX20	15	18 @ 10	30-120	@ 30	0.18 @ 30	350	5.0	360	1.2	TO-18
2N914	15	20 @ 20	30-120	@ 10	0.25 @ 20	300	6.0	360	1.2	TO-18
2N708	15	25 @ 10	30-120	@ 10	0.40 @ 10	300	6.0	360	1.2	TO-18
2N3014	20	18 @ 10	30-120	@ 30	0.18 @ 30	350	5.0	360	1.2	TO-52
BSX39	20	18 @ 10	40-120	@ 30	0.18 @ 30	350	6.0	360	1.2	TO-18
2N4046	30	(60) @ 500	40-150	@ 100	0.20 @ 100	250	12.0	800	3.5	TO-39
2N3724	30	(60) @ 500	60-150	@ 100	0.20 @ 100	300	12.0	800	3.5	TO-39
2N4013	30	(60) @ 500	60-150	@ 100	0.20 @ 100	300	12.0	360	1.2	TO-18
BSX32	40	(60) @ 500	60-150	@ 100	0.25 @ 100	300	10.0	800	3.5	TO-39
2N3253	40	(70) @ 500	25	@ 150	0.35 @ 150	175	12.0	1000	5.0	TO-39
2N4047	50	(60) @ 500	40-150	@ 100	0.26 @ 100	250	10.0	800	3.5	TO-39
2N3725	50	(60) @ 500	60-150	@ 100	0.26 @ 100	300	10.0	800	3.5	TO-39
2N4014	50	(60) @ 500	60-150	@ 100	0.26 @ 100	300	10.0	360	1.2	TO-18

PNP

2N2894	12	(90) @ 30	30-150	@ 30	0.20 @ 30	400	6.0	360	1.2	TO-18
BSX29	12	(90) @ 30	30-120	@ 30	0.20 @ 30	400	6.0	360	1.2	TO-18
2N4209	15	20 @ 10	50-120	@ 10	0.18 @ 10	850	3.0	350	0.7	TO-18
2N3209	20	(90) @ 30	30-120	@ 30	0.20 @ 30	400	5.0	360	1.2	TO-18
2N5023	30	(90) @ 500	40-100	@ 500	0.35 @ 500	200	25.0	1000	4.0	TO-39
2N3467	40	(90) @ 500	40-120	@ 500	0.50 @ 500	175	25.0	1000	5.0	TO-39
2N5022	50	(90) @ 500	25-100	@ 500	0.40 @ 500	170	25.0	1000	4.0	TO-39
2N3468	50	(90) @ 500	25-75	@ 500	0.60 @ 500	150	25.0	1000	5.0	TO-39

SMALL SIGNAL HIGH VOLTAGE AMPLIFIER TRANSISTORS
BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} MIN-MAX	@ I_C mA	f_T MHz MIN	C_{ob} pF MAX	P_D T_A 25°C mW	P_D T_C 25°C W	PACKAGE TYPE
BC532	140	60-250	@ 10	100	6.0	814	1.79	TO-92—EBC
2N3114	150	30-120	@ 30	40	9.0	800	5.0	TO-39
BC533	160	80-250	@ 10	100	6.0	814	1.79	TO-92—EBC
MPSA43	200	50-200	@ 30	50	4.0	878	2.08	TO-92—EBC
MPSA42	300	40-200	@ 30	50	3.0	878	2.08	TO-92—EBC

PNP

BC530	120	40-180	@ 10	100	6.0	625	1.0	TO-92—EBC
BC531	150	60-240	@ 10	100	6.0	625	1.0	TO-92—EBC
MPSA93	200	30-150	@ 50	50	8.0	625	1.0	TO-92—EBC
MPSA92	300	25	@ 30	50	6.0	625	1.0	TO-92—EBC

SMALL SIGNAL DARLINGTON TRANSISTORS
BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} V_{MIN}	h_{FE} MIN	@ I_C mA	$V_{CE(sat)}$ V MAX	@ I_C mA	PACKAGE TYPE
MPSA12	20	20,000	@ 10	1.0	@ 10	TO-92—EBC
MPSA13	30	5,000	@ 10	1.5	@ 100	TO-92—EBC
MPSA14	30	10,000	@ 10	1.5	@ 100	TO-92—EBC
2N6426	40	20,000	@ 10	1.5	@ 500	TO-92—EBC
2N6427	40	10,000	@ 10	1.5	@ 500	TO-92—EBC

PNP

MPSA62	20	20,000	@ 10	1.0	@ 10	TO-92—EBC
MPSA63	30	5,000	@ 10	1.5	@ 100	TO-92—EBC
MPSA64	30	10,000	@ 10	1.5	@ 100	TO-92—EBC
MPSA65	30	50,000	@ 10	1.5	@ 100	TO-92—EBC
MPSA66	30	75,000	@ 10	1.5	@ 100	TO-92—EBC

SMALL SIGNAL DUAL TRANSISTORS
BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} @ I_C MIN-MAX mA	MATCHING h_{FE} %	MATCHING V_{BE} mV	PACKAGE TYPE
MD2369A	15	40-120 @ 10	10	5.0	TO-78
MD2369B	15	40-120 @ 10	20	10	TO-78
MD918A	15	50 @ 1.0	10	5.0	TO-78
MD918B	15	50 @ 1.0	20	5.0	TO-78
MD2218A	40	40-120 @ 150			TO-78
MD2219A	40	100-300 @ 150			TO-78
2N913	45	60-240 @ 0.01			TO-78
2N2916	45	150-600 @ 0.01	10	5.0	TO-78
2N2917	45	60-240 @ 0.01	20	10	TO-78
2N2915	45	60-240 @ 0.01	10	3.0	TO-78
2N3726	45	135-350 @ 1.0	10	5.0	TO-78
2N2914	45	150-300 @ 0.01			TO-78
2N2918	45	150-300 @ 0.01	20	5.0	TO-78
2N2919A	60	60-240 @ 0.01	10	1.5	TO-78
2N2920	60	150-300 @ 0.01	10	3.0	TO-78
2N2920A	60	150-300 @ 0.01	10	1.5	TO-78

PNP

2N4020	45	250-600 @ 0.01	20	5.0	TO-78
2N4023	45	250-600 @ 0.1	10	3.0	TO-78
2N4024	60	100-350 @ 0.1	10	3.0	TO-78
2N3800	60	150-450 @ 0.1			TO-71
2N3806	60	150-450 @ 0.1			TO-78
2N3802	60	150-450 @ 0.1	20	8.0	TO-71
2N3808	60	150-450 @ 0.1	20	8.0	TO-78
2N3804	60	150-450 @ 0.1	10	5.0	TO-71
2N3810	60	150-450 @ 0.1	10	5.0	TO-78
2N4025	60	250-600 @ 0.1	10	3.0	TO-78
2N3805	60	300-900 @ 0.1	10	5.0	TO-71
2N3811	60	300-900 @ 0.1	10	5.0	TO-78
2N4017	80	100-350 @ 0.01			TO-78

SMALL SIGNAL QUAD TRANSISTORS
BY ASCENDING V_{CEO}

NPN

DEVICE TYPE	V_{CEO} V MIN	h_{FE} MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V MAX	@ I_C mA	PACKAGE TYPE
FPQ3724	40	30	@ 500	0.5	@ 500	TO-116
FPQ2222	40	100	@ 150	0.4	@ 150	TO-116
FPQ3725	50	20	@ 500	0.5	@ 500	TO-116

PNP

DEVICE TYPE	V_{CEO} V MIN	h_{FE} MIN-MAX	@ I_C mA	$V_{CE(sat)}$ V MAX	@ I_C mA	PACKAGE TYPE
FPQ3467	40	30	@ 500	0.5	@ 500	TO-116
FPQ2907	40	100	@ 150	0.4	@ 150	TO-116
FPQ3468	50	20	@ 500	0.5	@ 500	TO-116

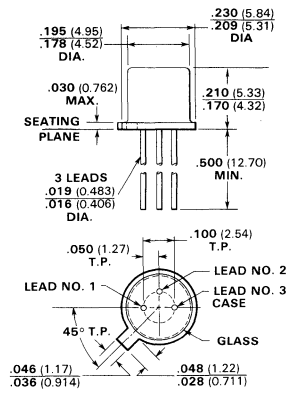
SMALL SIGNAL MICROWAVE TRANSISTORS
BY ASCENDING f_T

NPN

DEVICE TYPE	f_T MHz MIN	PG [GMA] (OSC. P_o) dB MIN	@ f MHz	V_{CEO} V MIN	C_{ob} [C_{ce}] (C_{cb}) pF MAX	NF dB MAX	@ f MHz	P_D T_A 25°C mW	PACKAGE TYPE
2N918	600	15	@ 200	15	1.7	6.0	@ 60	200	TO-72
2N5179	900	15	@ 200	12	(1.0)	4.5	@ 200	250	TO-72
FMT1061	1000			14	(1.0)	3.5	@ 450	250	TO-72
2N2857	1000	12.5	@ 450	15	(1.0)	4.5	@ 450	250	TO-72
2N3572	1000			13	(.85)	6.0	@ 450	250	TO-72
2N3683	1000			12	(2.0)	4.0	@ 200	250	TO-72
2N3839	1000	12.5	@ 450	15	(1.0)	3.4	@ 450	250	TO-72
2N5031	1000	14	@ 450	10	(1.5)	2.5	@ 450	250	TO-72
2N3880	1200	14	@ 450	15	(.75)	3.5	@ 450	250	TO-72
FMT1061A	1300	[13.8] (TYP)	@ 1000	14	(1.0)	3.0	@ 450	250	TO-72
FMT1090	1400 (TYP)	[14] (TYP)	@ 450	14	(1.2)	4.0	@ 450	600	TO-92 — EBC
FMT1091	1400 (TYP)	[15] (TYP)	@ 450	14	(1.2)	3.5	@ 450	600	TO-92 — EBC
FMT1190	1400 (TYP)	[12.5] (TYP)	@ 450	12	(1.2)	5.0	@ 450	600	TO-92 — EBC
FMT2080	1400 (TYP)	13.0 (TYP)	@ 450	14	(0.9)	2.0 (TYP)	@ 450	200	TO-72
FMT2085	1400 (TYP)	13.0 (TYP)	@ 450	14	(1.0)	2.0 (TYP)	@ 450	400	TO-92 — EBC
FMT2090	1400 (TYP)	13.0 (TYP)	@ 450	14	(0.8)	2.0 (TYP)	@ 450	240	TO-120
2N3570	1500			15	(.75)	7.0	@ 1000	250	TO-72
FMT2060	1500 (TYP)	15 (TYP)	@ 50	14	(1.0)	2.8 (TYP)	@ 450	240	TO-120

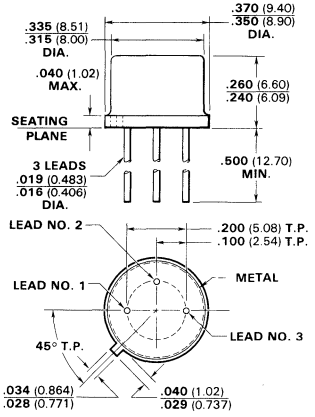
SMALL SIGNAL TRANSISTOR PACKAGE OUTLINES

JEDEC TO-18 Outline



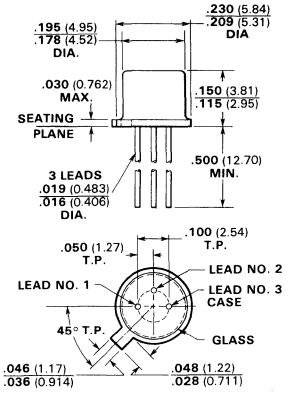
NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Lead No. 3 connected to case
Package weight is 0.44 gram

JEDEC TO-39 Outline



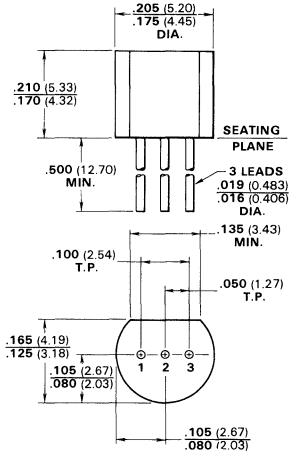
NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Lead No. 3 connected to case
Package weight is 0.76 gram

JEDEC TO-52 Outline



NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Lead No. 3 connected to case
Package weight is 0.31 gram

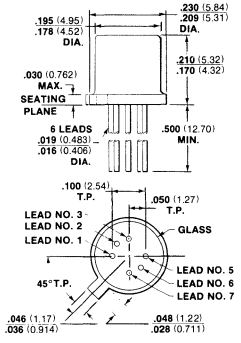
JEDEC TO-92 Outline



TO-92 PIN CONFIGURATION		
PIN 1	**PIN 2**	**PIN 3**
E	B	C
C	B	E
E	C	B

NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Package material is transfer molded thermosetting plastic
Package weight is 0.25 gram

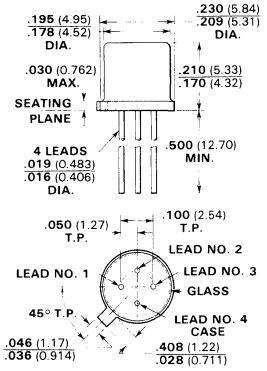
JEDEC TO-71 Outline



NOTES:
All dimensions in inches (bold) and milimeters (parentheses)
Leads are gold-plated kovar
Package weight is 0.60 gram

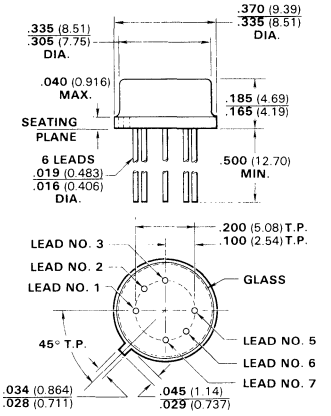
SMALL SIGNAL TRANSISTOR PACKAGE OUTLINES

JEDEC TO-72 Outline



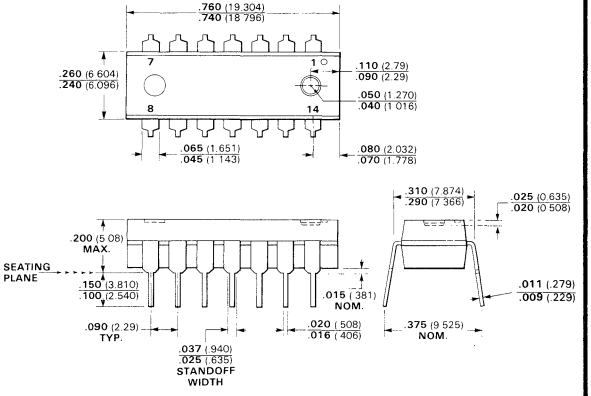
NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Lead No. 4 connected to case
Collector electrically isolated from case
Package weight is 0.36 gram

JEDEC TO-78 Outline



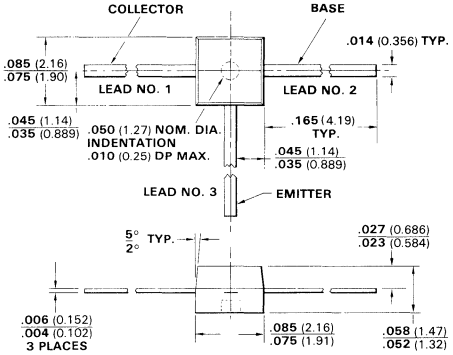
NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Lead No. 1 internally connected to one island
Lead No. 7 internally connected to other island
Leads 4 and 8 omitted
Kovar island thickness = 15 mils
Package weight is 1.08 grams

JEDEC TO-116 Outline
Plastic 14-Lead Dual In-line



NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Leads are intended for insertion in hole rows on .300" centers
They are purposely shipped with "positive" misalignment to facilitate insertion
Board-drilling dimensions should equal your practice for .030" diameter lead
Package weight is 0.9 gram

JEDEC TO-120 Outline



NOTES:
All dimensions in inches (bold) and millimeters (parentheses)
Package material is plastic
Package weight is 0.015 gram

FAIRCHILD

Printed in U.S.A./243-61-0002-097-10M