

General-Purpose Amplifiers

Complementary transistors designed for dc to VHF amplifier and general-purpose switching applications, listed in decreasing order of $V_{(BR)CEO}$ within each package group.

Package	Device	$V_{(BR)CEO}$ Volts Min	f_T MHz Min	@ I_C mA	I_C mA Max	Min	h_{FE} Max	@ I_C mA
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NPN

TO-18	2N2896	90	120	50	1000	60	200	150
	2N3700#	80	80	1.0	1000	50		500
	2N2895	65	120	50	1000	40	120	150
	2N956	50	70	50		40	120	150
	2N2897	45	100	50	1000	50	200	150
	2N718,A	40	50	50		40	120	150
	2N2221A#	40	250	20	800	40	120	150
	2N2222A†	40	300	20	800	100	300	150
	2N3946	40	300	10	200	50	150	10
	2N3947	40	300	10	200	100	300	10
	2N2222#	30	250	20	800	100	300	150
	2N3302	30	250	50	500	100	300	150
	2N916*	25	300	10		50	200	10
TO-39	2N1711	80	70	50		100	300	150
	2N3019#	80	100	50	1000	100	300	150
	2N3020	80	80	50	1000	40	120	150
	2N1613#	50	60	50	500	40	120	150
	2N2193A	50	50	50	1000	40	120	150
	2N2270	45	100	50	1000	50	200	150
	2N697	40	50	50		40	120	150
	2N2218A#	40	250	20	800	40	120	150
	2N2219A†	40	300	20	800	100	300	150
	2N3053	40	100	50	700	50	250	150
	2N2218#	30	250	20	800	40	120	150
	2N2219#	30	250	20	800	100	300	150
	2N3300	30	250	50	500	100	300	150
TO-46	2N5581**	40	250	20	800	40	120	150
	2N5582**	40	300	20	800	100	300	150
TO-52	MM3903	40	250	10	200	50	150	10
	MM3904	40	300	10	200	100	300	10

PNP

TO-18	2N4026	80	100	50	1000	15	—	100
	2N4027	80	100	50	1000	10	—	100
	2N4028	80	150	50	1000	40	—	100
	2N4029	80	150	50	1000	25	—	100
	2N2906A#	60	200	50	600	40	120	150
	2N2907A†	60	200	50	600	100	300	150
	2N3250A#	60	250	10	200	50	150	10
	2N3251A#	60	300	10	200	100	300	10
	2N2906#	40	200	50	600	40	120	150
	2N2907#	40	200	50	600	100	300	150
	2N3250	40	250	10	200	50	150	10
	2N3251	40	300	10	200	100	300	10
TO-39	MM5007	100	30	50	2000	50	250	250
	MM5006	80	30	50	2000	50	250	200
	2N4031	80	100	50	1000	10	—	100
	2N4033#	80	150	50	1000	25	—	100
	2N4404	80	200	50	1000	40	120	150
	2N4405**	80	200	50	1000	100	300	150

(continued)

*JAN available

**JAN/JANTX available

#JAN/JANTX/JANTXV available

†JAN/JANTX/JANTXV/JANS available

General-Purpose Amplifiers (continued)

Package	Device	V _{(BR)CEO} Volts Min	f _T MHz Min	@ I _C mA	I _C mA Max	h _{FE} Min	h _{FE} Max	@ I _C mA
NPN (continued)								
TO-39 (cont.)	MM4036	65	60	50	1000	20	140	150
	2N4036	65	60	50	1000	40	140	150
	2N4037	65	60	50	1000	40	—	150
	MM5005	60	30	50	2000	50	250	150
	2N2904A#	60	200	50	600	40	120	150
	2N2905A†	60	200	50	600	100	300	150
	2N4030	60	100	50	1000	15	—	100
	2N4032	60	150	50	1000	40	—	100
	MM4037	40	60	50	1000	50	250	150
	2N1131A	40	50	50	600	30	90	150
	2N1132A	40	60	50	600	30	90	150
	2N2904#	40	200	50	600	40	120	150
	2N2905#	40	200	50	600	100	300	150
	2N1132*	35	60	50	600	30	90	150
TO-46	2N3485A**	60	200	50	600	40	120	150
	2N3486A**	60	200	50	600	100	300	150
	2N3673	50	200	50	600	75	225	150
	2N3486	40	200	50	600	100	300	150
TO-52	MM3906	40	250	10	200	100	300	10
	MM3905	40	200	10	200	50	150	10

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Choppers

Devices are listed in decreasing V_{(BR)EBO}.

Package	Device	V _{(BR)EBO} Min	V _{(BR)ECO}	Min h _{FE(inv)}	Offset Voltage V _{EC(ofs)} Max (mV)	On-State Resistance r _{ec(on)} Max (Ω)
PNP						
TO-46	2N2946	40	35	3.0	2.0	45
	2N2946A	40	35	20	2.0	8.0
	2N5230	30	20	15	0.5	8.0
	2N5231	30	20	15	0.8	10
	2N2945A	25	20	30	1.0	6.0
	2N2945	25	20	4.0	1.0	35
	2N2944A	15	10	50	0.3	4.0
	2N2944	15	10	6.0	0.6	20
	2N5229	15	10	15	0.5	6.0

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Darlington

Package	Device	V _{(BR)CEO} Volts Min	I _C mA Max	h _{FE} @ I _C mA	f _T MHz Min	@ I _C mA
NPN						
TO-18	MM6427	40	300	5.0 k	10	125
						100