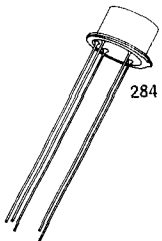


SPECIAL SILICON PRODUCTS DIFFERENTIAL AMPLIFIERS

GE Type	V _{CEO} Min. (V)	h _{FE} @ 100μA		h _{FE1} /h _{FE2} Match @ 100μA	h _{FE} @ 1mA		h _{FE1} /h _{FE2} Match @ 1mA	ΔV _{BE}		I _{CBO} V _{CB} (V) Max.		Package Outline No.	Specification Sheet No.
		Min.	Max.		Min.	Max.		@ 10μA (mV)	@ 1mA (mV)	(nA)	(V)		
		Differential Amplifiers—NPN											
2N2060 ⁴	60 ¹	30	—	0.9-1.0	40	—	—	—	5	2	80	283	35.42
2N2223	60	25	—	0.8-1.0	50 ²	200	—	—	15 ³	10	80	283	35.14
2N2223A	60	25	150	.9-1.0	50 ²	200	—	—	5 ³	10	80	283	35.14
2N2453 ⁵	30	80 ¹	—	—	150	600	0.9-1.0	3	5	5	50	283	35.20
2N2453A ⁵	50	—	—	—	150	600	.8-1.0	3	5	5	60	283	35.20
2N2480	40	20	—	0.8-1.0	30	350	0.8-1.0	—	10	50	60	283	35.25
2N2480A	40	35	—	0.8-1.0	50	200	0.8-1.0	—	5	20	60	283	35.25
2N2639 ⁵	45	55	—	—	65	—	.9-1.0 ¹	5	—	10	45	283	35.61
2N2640 ⁵	45	55	—	—	65	—	.8-1.0 ¹	10	—	10	45	283	35.61
2N2641 ⁵	45	55	—	—	—	—	—	—	—	10	45	283	35.61
2N2642 ⁵	45	110	—	—	130	—	.9-1.0 ¹	5	—	10	45	283	35.61
2N2643 ⁵	45	110	—	—	130	—	.8-1.0 ¹	10	—	10	45	283	35.61
2N2644 ⁵	45	110	—	—	—	—	—	—	—	10	45	283	35.61
2N2652	60	35	—	.85-1.0	50	200	0.85-1.0	—	3	10	50	283	35.32
2N2652A	60	35	—	0.9-1.0	50	200	0.9-1.0	—	3	2	50	283	35.32
2N2903	30	60 ¹	—	—	125	625	.8-1.0	10	—	—	—	283	—
2N2910	25	70	—	0.8-1.0	80	—	0.8-1.0	—	10	10	20	283	35.34
2N2913 ⁵	45	100	—	—	150	—	—	—	—	10	45	283	35.36
2N2914 ⁵	45	225	—	—	300	—	—	—	—	10	45	283	35.36
2N2915 ⁵	45	100	—	0.9-1.0	150	—	—	5	5	10	45	283	35.36
2N2916 ⁵	45	225	—	0.9-1.0	300	—	—	5	5	10	45	283	35.36
2N2917 ⁵	45	100	—	0.8-1.0	150	—	—	10	10	10	45	283	35.36
2N2918 ⁵	45	225	—	0.8-1.0	300	—	—	10	10	10	45	283	35.36
2N2919 ⁵	60	100	—	0.9-1.0	150	—	—	5	5	2	45	283	35.36
2N2920 ⁵	60	225	—	0.9-1.0	300	—	—	5	5	2	45	283	35.36
2N3521 ⁵	45	155 ⁶	500	0.8-1.0 ¹	200	600 ²	0.8-1.0	5	10	5	50	283	35.31
2N3522	45	155 ⁶	500	0.8-1.0 ¹	200	600 ²	.8-1.0	5	10	10	50	285	35.31
D12A8	30	30	—	0.6-1.0	—	—	—	—	15 ³	25	30	283	35.27
D12E026	30	40	—	.6-1.0	60	—	—	—	—	25	20	283	35.24
D12E109	30	80 ¹	—	—	150	600	0.9-1.0	3	5	5	30	283	35.20
D12E126	30	40	—	0.6-1.0	60	—	—	—	—	25	20	285	35.24

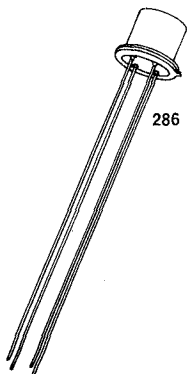
¹ I_C = 10μA ⁴ JAN & JANTX types available
² I_C = 10mA ⁵ TO-18 packages available
³ I_C = 100μA ⁶ I_C = 5mA

CHOPPERS



GE Type	V _{CEO} Min. (V)	Offset Voltage @ I _{B1} = I _{B2} = 1mA, I _{E1} = I _{E2} = 0 (μV)	V _{CEO} @ I _{E1E2} = 1mA, I _{B1} = I _{B2} (V)	R _s @ I _{B1} = 1mA, I _{EE} = 0.1mA (Ω)	I _{CBO1} or I _{CBO2} @ 25V Max (nA)	Package Outline No.	Specification Sheet No.
Choppers NPN	2N2356	300 @ -55°C to +125°C	20	40	10	284	35.10
	2N2356A	50 @ -55°C to +125°C	20	40	10	284	35.10

DARLINGTONS



GE Type	V _{CEO} @ 30mA Min. (V)	h _{FE} @ 100mA		h _{FE} @ 10mA		h _{FE} @ 1mA Min.	I _{CBO} V _{CB} (V) Max.		Package Outline No.	Specification Sheet No.
		Min.	Max.	Min.	Max.		(nA)	(V)		
Darlington ² NPN	2N997	40	7000	70,000	4000	—	10	60	286	35.11
	2N998	60	2000	—	1600	800	10	90	286	35.12
	2N999	60	7000	70,000	4000	—	10	60	286	35.11
	2N2785	40 ¹	2000	20,000	1200	600	50	30	286	35.33

¹ Measured at 20mA

² For Plastic Encapsulated Darlington types see Silicon Signal Transistor Section Page 18.