

NPN Transistors



Low Level Amplifiers

Type No.	Case Style	V _{CE0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CBO} (nA) Max	V _{CB} (V) Max	h _{FE} Min	I _C @ V _{CE} (mA) & (V) Max	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	I _C (mA) Max	NF (dB) Max	Test Conditions	Process No.	
																		Max
2N929	TO-18	45	45	5	10	45	60	350	1.0	0.6	10	8	30	0.5	4	(Note 1)	07	
2N929A	TO-18	60	45	6	2	45	60	350	0.5	0.7	10	6	45	0.5	4		07	
2N930 Avail. JAN/TX/V Versions	TO-18	45	45	5	10	45	150	600	1.0	0.6	10	8	30	0.5	3	(Note 1)	07	
2N2484	TO-18	60	60	6	10	45	250	1	0.35		1	10	15	0.05	3	(Note 1)	07	
2N3117	TO-18	60	60	6	10	45	400	1	0.35		1	4.5	60	0.5	1.5	(Note 2)	07	
2N3246	TO-18	60	40	10	1	40	800	10	0.5	0.7	5	5	60	180	2	(Note 1)	07	
2N3565		Same as PN3565																11
2N3707	TO-92 (94)	30	30	6	100	20	100	400	1.0		10				5	(Note 1)	11	
2N3708	TO-92 (94)	30	30	6	100	20	45	660	1.0		10						11	

Low Level Amplifiers (Continued)

Type No.	Case Style	V _{CE0} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CB0} (nA) Max	V _{CB} (V)	I _{FE} Min	I _{FE} Max	I _C @ V _{CE} & V _{CE} (mA) (V)	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	I _C (mA) Max	NF (dB) Max	Test Conditions	Process No.
2N3709	TO-92 (94)	30	30		100	20	45	165	1 5	1.0		10						11
2N3710	TO-92 (94)	30	30	6	100	20	90	330	1 5	1.0		10						11
2N3711	TO-92 (94)	30	30	6	100	20	180	660	1 5	1.0		10						11
2N3858A	TO-92 (94)	60	60	6	500	18	60	120	10 1				4	90	250	2		11
2N3859A	TO-92 (94)	60	60	6	500	18	100	200	10 1				4	90	250	2		11
2N3877	TO-92 (94)	70	70	4	500	70	20	250	2 4.5		0.5	0.9	10					11
2N3877A	TO-92 (94)	85	85	4	500	70	20	250	2 4.5		0.5	0.9	10					11
2N3900A	TO-92 (94)	18	18	5	100	18	250	500	2 4.5				12			5	(Note 4)	11
2N3901	TO-92 (94)	18	18	5	100	15	350	700	2 4.5				5			5	(Note 4)	11
2N4286	TO-92 (94)	30	25	6	50	25	150	600	1 5	0.35	0.8	1	6	40	1			11
2N4287	TO-92 (94)	45	45	7	10	30	150	600	1 5	0.35	0.8	1	6	40	1	5	(Note 1)	11
2N4409	TO-92 (92)	80	50	5	10	60	60	400	10 1	0.2	0.8	1	12	60	300	10		11
2N4410	TO-92 (92)	120	80	5	10	100	60	400	10 1	0.2	0.8	1	12	60	300	10		11
2N4966	TO-92 (92)	50	40	6	25	25	40	200	0.01 5	0.4		10	6	40	1			11
2N4967	TO-92 (92)	50	40	6	25	25	100	600	0.01 5	0.4		10	6	40	1			11
2N4968	TO-92 (92)	30	25	6	50	25	40	200	0.01 5	0.4		10	6	40	1			11

T-29-01

PNP Transistors



Low Level Amplifiers (Continued)

Type No.	Case Style	V _{CE0} (V) Min	V _{CE0} (V) Max	V _{BE0} (V) Min	I _{CBO} (nA) Max	V _{CB} (V)	I _{FE} (mA) Min	I _{FE} (mA) Max	I _C (mA) & V _{CE} (V)	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	f _T (MHz) Max	I _C (mA) Max	NF (dB) Max	Test Conditions	Process No.	
																				35
2N5088	TO-92 (92)				50	20	300	10	5	0.5		10	4				3	(Note 3)	11	
2N5089	TO-92 (92)				50	15	400	10	5	0.5		10	4				2	(Note 3)	11	
2N5133		Same as PN5133																		
2N5209	TO-92 (92)				50	35	150	10	5	0.7		10	4	30	0.5		4	(Note 5)	11	
2N5210	TO-92 (92)				50	35	250	10	5	0.7		10	4	30	0.5		3	(Note 4)	11	
2N5232	TO-92 (94)				30	50	250	2	5	0.125		10	4						11	
2N5961	TO-92 (92)				2	45	100	0.01	5	0.2		10	4	100	10		6	(Notes 7 & 11)	11	
2N5962	TO-92 (92)				2	30	450	0.01	5	0.2		10	4	100	10		6	(Note 7)	11	
							500	0.1	5								4	(Note 8)	11	
							550	1	5								8	(Note 9)	11	
							600	1400	10	5							3	(Note 10)	11	
																	3	(Note 12)	11	
2N5232A	TO-92 (94)				30	50	250	2	5	0.125		10	4				5	(Note 2)	11	
MPS3707	TO-92 (92)				100	20	100	400	100 μA	1.0		10					5	(Note 4)	11	
MPS3708	TO-92 (92)				100	20	45	660	1	1.0		10							11	
MPS3709	TO-92 (92)				100	20	45	165	1	1.0		10							11	
MPS3710	TO-92 (92)				100	20	90	330	1	1.0		10							11	

T-29-01

Low Level Amplifiers (Continued)

Type No.	Case Style	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CBO} (mA) @ V _{CE0} Max	I _{CBO} (mA) @ V _{CE0} Max	h _{FE} Min	h _{FE} Max	I _C @ V _{CE} & V _{BE} (V)		V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) & V _{BE} (V) Min		I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	f _T (MHz) Max	I _C (mA) Max	NF (dB) Max	Test Conditions	Process No.					
								I _C (mA)	V _{CE} (V)		V _{BE(SAT)} (V) Max	V _{BE} (V) Min													
MPS3711	TO-92 (92)	30		100	20	180	660	1	5	1.0			10							11					
MPS6571	TO-92 (92)	25	3	50	20	250	1000	100	5	0.5			10	4.5	50		0.5			11					
MPSA09	TO-92 (92)	50		100	25	100	600	100	5	0.9			10	5	600		0.5			11					
MPSA18	TO-92 (92)	45	6.5	50	30	400		0.01	5	0.3			50	3	100		1	1.5	(Note 4)	11					
PE4020	TO-92 (92)	60	8	2	45	150	950	10	5	0.3			50	4	100	800	10		6	(Note 9)	11				
						135	1	5					3									(Note 7)			
						120	0.1	5																	
PN930	TO-92 (92)	45	5	10	45	600	10	5	5	1.0	0.6	1.0	10	8	30	0.5		3	(Note 1)	11					
						150	500	5																	
PN2484	TO-92 (92)	60	6	10	45	600	10	5	5	0.35			10	6					3	1	11				
						250	1	5																	
						200	500	5																	
						175	100	5																	
PN3565	TO-92 (92)	30	6	50	25	150	600	1	10	0.35			1	4	40	240	1			11					
						30	1	5																	
PN5133	TO-92 (92)	20	3	50	15	60	1000	1	5	0.4			1	5	40	240	1			11					

TEST CONDITIONS:

Note 1: I_C = 10 μA, V_{CE} = 5V, f = 10 Hz - 15.7 kHz.
 Note 2: I_C = 10 μA, V_{CE} = 5V, f = 1 kHz.
 Note 3: I_C = 5 μA, V_{CE} = 5V, f = 1 kHz.
 Note 4: I_C = 100 μA, V_{CE} = 5V, f = 10 Hz - 15.7 kHz.

Note 5: I_C = 10 μA, V_{CE} = 5V, f = 10 kHz.
 Note 6: I_C = 100 μA, V_{CE} = 5V, f = 5 kHz.
 Note 7: I_C = 100 μA, V_{CE} = 5V, f = 1 kHz, R_S = 1 kΩ.
 Note 8: I_C = 100 μA, V_{CE} = 5V, f = 1 kHz, R_S = 10 kΩ.

Note 9: I_C = 100 μA, V_{CE} = 5V, f = 1 kHz, R_S = 100 kΩ.
 Note 10: I_C = 10 μA, V_{CE} = 5V, f = 1 kHz, R_S = 10 kΩ.
 Note 11: I_C/I_B = 20.
 Note 12: I_C = 10 μA, V_{CE} = 5V, f = 10 Hz - 10 kHz, R_S = 10 kΩ.

PNP Transistors

