

PNP Transistor

6501130 NATL SEMICOND, (DISCRETE)

28C 35443

D

T-29-01

GENERAL PURPOSE AMPS AND SWITCHES



Type No.	Case Style	V _{CEO} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	ICES* ICBO (mA) Max	hFE Min Max	IC (mA) @ VCE & VBE (V)	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min	IC (mA) @ V _{CE(SAT)} & V _{BE(SAT)} Max	Cob (pF) Max	f _T (MHz) Min Max	IC (mA) @ f _T Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N722	TO-18	50	35	5	100	30 90	150 5	1.5	1.3	150	45	60	50				63
2N1132	TO-5	50	35	2	100	30 90	150 5	1.5	1.3	150	45	60	50				63
2N2696	TO-18	25	25		25	20 30	300 2	0.25	1.1	50	20	100	50	170		1	63
2N2904	TO-5	60	40	5	20	20 500	10 1	0.4	1.3	150	8	200	50	100		2	63
2N2904A	TO-5	60	60	5	10	40 40	500 10	0.4	1.3	150	8	200	50	100		2	63
2N2905	TO-5	60	40	5	20	30 100	500 10	0.4	1.3	150	8	200	50	100		2	63
2N2905A	TO-5	60	60	5	10	75 50	10 1	1.6	2.6	500	8	200	50	100		2	63
2N2906	TO-18	60	40	5	20	20 40	500 0.1	0.4	1.3	150	8	200	50	100		2	63
2N2906A	TO-18	60	60	5	10	40 40	150 10	0.4	1.3	150	8	200	50	100		2	63
2N2907	TO-18	60	40	5	20	35 100	500 10	0.4	1.3	150	8	200	50	100		2	63

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)



Type No.	Case Style	V _{CEO} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CEO} (mA) Max	I _{CB0} (mA) Max	h _{FE}		I _C & V _{CE} (V)	V _{CE(SAT)} V _{BE(SAT)} (V)		I _C (mA)	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA)	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
							Min	Max		Max	Min								
2N2907A	TO-18	60	60	5	10	50	500	10	10	0.4	1.3	150	8	200	50	100		2	63
2N3072	TO-5	60	60	4	10*	15	300	2	1	0.25	1.2	50	10	130	50	100		3	63
2N3073	TO-18	60	60	4	10*	15	300	2	2	0.25	1.2	50	10	130	50	100		3	63
2N3120	TO-5	45	45	4	10*	30	130	50	1	1.0	2.0	300	10	130	50	100		4	63
2N3121	TO-18	45	45	4	10*	15	300	2	2	0.25	1.2	50	10	130	50	100		4	63
2N3133	TO-5	50	35	4	50	10	150	1	10	0.6	1.5	150	10	200	50	150		2	63
2N3134	TO-5	50	35	4	50	50	150	1	10	0.6	1.5	150	10	200	50	150		2	63
2N3135	TO-18	50	35	4	50	25	150	1	10	0.6	1.5	150	10	200	50	150		2	63
2N3136	TO-18	50	35	4	50	25	150	1	10	0.6	1.5	150	10	200	50	157		2	63
2N3502	TO-5	45	45	5	10	50	500	10	10	0.25	1.0	50	8	200	50	100	4	4/7	63

TEST CONDITIONS:
 (1) I_C = 300 mA, V_{CC} = 10V, I_B¹ = I_B² = 30 mA, (2) I_C = 150 mA, V_{CC} = 6V, I_B¹ = I_B² = 15 mA, (3) I_C = 300 mA, V_{CC} = 15V, I_B¹ = I_B² = 30 mA, (4) I_C = 300 mA, V_{CC} = 30V, I_B¹ = I_B² = 30 mA,
 (5) I_C = 10 mA, V_{CC} = 3V, I_B¹ = I_B² = 1 mA, (6) I_C = 100 μA, V_{CE} = 5V, f = 100 Hz, (7) I_C = 30 μA, V_{CE} = 5V, f = 1 kHz, (8) I_C = 100 μA, V_{CE} = 5V, f = 1 kHz, (9) I_C = 250 μA, V_{CE} = 5V, f = 1 kHz,
 (10) I_C = 10 μA, V_{CE} = 5V, f = 1 kHz, (11) I_C = 50 mA, V_{CC} = 30V, I_B¹ = I_B² = 5 mA, (12) I_C = 150 mA, V_{CC} = 30V, I_B¹ = I_B² = 15 mA, (13) I_C = 50 mA, V_{CC} = 10V, I_B¹ = I_B² = 5 mA.

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PNP Transistors

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PNP Transistors

6501130 NATL SEMICOND, (DISCRETE)

28C 35445 D

GENERAL PURPOSE AMPS AND SWITCHES (Continued)



Type No.	Case Style	V _{CEO} (V)		V _{BEBO} (V)		I _{CB0} @ V _{CB} (mA)		h _{FE} @ I _C & V _{CE}		V _{CE(SAT)} & V _{BE(SAT)} (V)		I _C (mA)		C _{ob} (pF) Max	f _T (MHz)		τ _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max					
2N3503	TO-5	60	60	5	50	10	500	50	10	0.25	1	50	8	200	100	4	63				
								100	150	0.4	1.3	150									
								140	10	1	2	300									
2N3504	TO-18	45	45	5	30	10	50	10	0.25	1	50	8	200	100	4	63					
							100	150	0.4	1.3	150										
							140	10	1	2	500										
2N3505	TO-18	60	60	5	50	10	100	150	0.25	1	50	8	200	100	4	63					
							115	300	0.4	1.3	150										
							140	10	1	2	300										
2N3638	TO-92 (92)	Same as PN3638, see page 2-13 for explanation																			
2N3638A	TO-92 (92)	Same as PN3638A, see page 2-13 for explanation																			
2N3644	TO-92 (92)	Same as PN3644, see page 2-13 for explanation																			
2N3645	TO-92 (92)	60	60	5	40	10	40	10	0.4	0.8	150	8	200	20	63						
							80	1	1.3	300											
							100	10	2	300											
2N3702	TO-92 (94)	40	25	5	20	5	60	5	0.25	50	12	100	50	63							
							30	150	0.25	50											
							30	150	0.25	50											
2N4142	TO-92 (92)	Same as PN4142, see page 2-13 for explanation																			
2N4143	TO-92 (92)	Same as PN4143, see page 2-13 for explanation																			
2N4290	TO-92 (94)	30	20	5	20	10	50	100	0.4	1.5	100	10	100	10	63						
							40	10	10	10											
							20	0.1	10	10											

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6501130 NATL SEMICOND, (DISCRETE)

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	V _{CEO} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CBO} (mA) Max	I _{CS} * (mA) Max	V _{CB} (V) Max	h _{FE} Min	I _C (mA) Max	V _{CE} (V) Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) @ I _C (mA)		f _T (MHz) Min	f _T (MHz) Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
											Max	Min								
2N4291	TO-92 (94)	40	30	6	200	30	30	100	100	10	10	1.5	100	10	10					63
2N4402	TO-92 (94)	40	40	5 *				20	500	2	0.4	0.7	150	10	150	255			4	63
2N4403	TO-92 (92)	40	40	5				100	150	2	0.4	0.75	150	10	200	255			4	63
2N4971	TO-92 (92)	Same as PN2906, see page 2-12 for explanation																		
2N4972	TO-92 (92)	Same as PN2907, see page 2-12 for explanation																		
2N5142	TO-92 (92)	Same as PN5142, see page 2-14 for explanation																		
2N5143	TO-92 (92)	Same as PN5143, see page 2-14 for explanation																		
2N5221	TO-92 (92)	15	15	3	100	10	30	600	50	10	0.5	1.1	150	15	100					63
2N5226	TO-92 (92)	25	25	4	300	15	30	600	50	10	0.8	1.0	100	20	50					63
2N5354	TO-92 (94)	25	25	4	100	25	40	120	50	1	0.25		50	8						63
2N5355	TO-92 (94)	25	25	4	100	25	100	300	50	1	0.25		50	8						63
2N5365	TO-92 (94)	40	40	4	100	40	20	120	300	5	0.25	1.1	50	8						63
2N5366	TO-92 (94)	40	40	4	100	40	40	300	50	1	0.25	2.0	200	8						63

TEST CONDITIONS:

(1) I_C = 300 mA, V_{CC} = 10V, I_B¹ = I_B² = 30 mA. (2) I_C = 150 mA, V_{CC} = 6V, I_B¹ = I_B² = 15 mA. (3) I_C = 300 mA, V_{CC} = 15V, I_B¹ = I_B² = 30 mA. (4) I_C = 300 mA, V_{CC} = 30V, I_B¹ = I_B² = 30 mA. (5) I_C = 10 mA, V_{CC} = 3V, I_B¹ = I_B² = 1 mA. (6) I_C = 100 μA, V_{CE} = 5V, f = 100 Hz. (7) I_C = 30 μA, V_{CE} = 5V, f = 1 kHz. (8) I_C = 100 μA, V_{CE} = 5V, f = 1 kHz. (9) I_C = 250 μA, V_{CE} = 5V, f = 1 kHz. (10) I_C = 10 μA, V_{CE} = 5V, f = 1 kHz. (11) I_C = 50 mA, V_{CC} = 30V, I_B¹ = I_B² = 5 mA. (12) I_C = 150 mA, V_{CC} = 30V, I_B¹ = I_B² = 15 mA. (13) I_C = 50 mA, V_{CC} = 10V, I_B¹ = I_B² = 5 mA.

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PNP Transistors

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6501130 NATL SEMICOND, (DISCRETE)

28C 35447 D

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	V _{CEO} (V) Min	V _{CEO} (V) Max	V _{ESD} (V) Min	V _{ESD} (V) Max	I _{CB0} * (mA) Min	I _{CB0} * (mA) Max	V _{CB} (V)	h _{FE} Min	h _{FE} Max	I _C (mA) Min	I _C (mA) Max	V _{CE(SAT)} (V) Min	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min	V _{BE(SAT)} (V) Max	I _C (mA) Min	I _C (mA) Max	f _T (MHz) Min	f _T (MHz) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N5447	TO-92 (97)	40	25	5					60	300	50	50	0.25				100	50	100					63
2N5817	TO-92 (97)	50	40	5		100	25	25	25	500	500	2	0.75		1.2		100	50	100					63
MPS3638	TO-92 (92)	Same as PN3638, see page 2-13 for explanation																						
MPS3638A	TO-92 (92)	Same as PN3638A, see page 2-13 for explanation																						
MPS3644	TO-92 (92)	Same as PN3644, see page 2-13 for explanation																						
MPS3645	TO-92 (92)	Same as PN3645, see page 2-13 for explanation																						
MPS3702	TO-92 (92)	40	25	5		100	20	20	60	300	50	50	0.25				100	50	100					63
MPS3703	TO-92 (92)	50	30	5		100	20	20	30	150	50	50	0.25				100	50	100					63
MPS6533	TO-92 (92)	40	40	4		50	30	30	25	500	10	10	0.5		1.0									63
MPS6534	TO-92 (92)	40	40	4		50	30	30	90	270	100	100	0.3		1.0									63
MPS6535	TO-92 (92)	30	30	4		100	20	20	30	100	100	1	0.5		1.2									63
PN2906	TO-92 (92)	60	40	5		20	50	50	20	400	150	10	0.4		1.3		200	50	200		100		2	63
PN2906A	TO-92 (92)	60	60	5		10	50	50	40	120	150	10	0.4		1.3		200	50	200		100		2	63
PN2907	TO-92 (92)	60	40	5		20	50	50	30	300	150	10	0.4		1.3		200	50	200		100		2	63

6501130 NATL SEMICOND, (DISCRETE)

28C 35448

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	VCBO (V) Min	VCEO (V) Min	VEBO (V) Min	ICES* ICBO @ (mA) Max	VCE @ IC & VCE (V)	hFE @ IC (mA) Min Max	VCE(SAT) VBE(SAT) (V) & Min Max	IC (mA) @ Min Max	Cob (pF) Max	ft (MHz) Min Max	IC (mA) @ Min Max	toff (ns) Max	NF (dB) Max	Test Conditions	Process No.
PN2907A	TO-92 (92)	60	60	5	20	50	100 300	0.4	1.3 150	8	200	50	100		2	63
PN3638	TO-92 (92)	25	25	4	35*	15	20 300	0.25	1.1 50	20	100	50	170		1	63
PN3638A	TO-92 (92)	25	25	4	25*	15	20 300	0.25	1.1 50	10	150	50	170		1	63
PN3644	TO-92 (92)	45	45	5	35*	30	20 300	0.25	1.0 50	8	200	20	100		4	63
PN3645	TO-92 (92)	60	60	5	35*	50	20 300	0.25	1.0 50	8	200	20	100		4	63
PN4142	TO-92 (92)	60	40	5			20 500	0.4	1.3 150	8	200	50	100		12	63
PN4143	TO-92 (92)	60	40	5			20 500	0.4	1.3 150	8	200	50	100		12	63

TEST CONDITIONS:
 (1) IC = 300 mA, VCC = 10V, IB1 = IB2 = 30 mA, VCE = 30V, IB1 = IB2 = 30 mA, VCC = 30V, IB1 = IB2 = 30 mA.
 (2) IC = 150 mA, VCC = 10V, IB1 = IB2 = 15 mA, VCE = 30V, IB1 = IB2 = 15 mA, VCC = 30V, IB1 = IB2 = 15 mA.
 (3) IC = 300 mA, VCC = 15V, IB1 = IB2 = 30 mA, VCE = 30V, IB1 = IB2 = 30 mA, VCC = 30V, IB1 = IB2 = 30 mA.
 (4) IC = 300 mA, VCC = 15V, IB1 = IB2 = 30 mA, VCE = 30V, IB1 = IB2 = 30 mA, VCC = 30V, IB1 = IB2 = 30 mA.
 (5) IC = 10 mA, VCC = 3V, IB1 = IB2 = 1 mA, VCE = 5V, f = 1 kHz, (7) IC = 30 mA, VCE = 5V, f = 1 kHz, (8) IC = 100 mA, VCE = 5V, f = 1 kHz, (9) IC = 250 mA, VCE = 5V, f = 1 kHz.
 (10) IC = 10 mA, VCE = 5V, f = 1 kHz, (11) IC = 50 mA, VCC = 30V, IB1 = IB2 = 5 mA, (12) IC = 150 mA, VCC = 30V, IB1 = IB2 = 5 mA, (13) IC = 50 mA, VCC = 10V, IB1 = IB2 = 5 mA.

PNP Transistors

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6501130 NATL SEMICOND, (DISCRETE)

28C 35449 D

T-29-01

PNP Transistors

GENERAL PURPOSE AMPS AND SWITCHES (Continued)



Type No.	Case Style	V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} (mA) Max	I _{CE0} (mA) Max	I _{FE} (mA) Min	I _{CE} (mA) Max	V _{CE} (V) Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V)		I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
										Max	Min								
PN5142	TO-92 (92)	20	20	4	50*	12	15	300	10	0.5	1.5	50	10	100	50	200		1	63
PN5143	TO-92 (92)	20	20	4	50*	12	30	300	10	0.2	0.8	2.5	10	100	50	200		1	63
TIS91	TO-92 (94)	40	40	5	100	20	30	50	2	0.2	0.8	2.5							63
TIS93	TO-92 (97)	40	40	5	100	20	100	300	2	0.25	0.6	1.0							63
TIS93	TO-92 (97)	40	40	5	100	20	100	300	2	0.25	0.6	1.0							63
TN2904A	TO-237 (91)	60	60	5	10	50	40	0.1	10	0.4	1.3	150	8	200	50	100		2	63
TN2905	TO-237 (91)	60	40	5	20	50	30	500	10	0.4	1.3	150	8	200	50	100		2	63
TN2905A	TO-237 (91)	60	60	5	10	50	75	150	10	1.6	2.6	500							63
2N3250	TO-18	50	40	5			35	0.1	10	0.4	1.3	150	8	200	50	100		2	63
2N3251	TO-18	50	40	5			50	500	10	0.4	1.3	150	6	250	10	225	6	5/6	66
2N3905	TO-92 (92)	40	40	5			15	50	1	0.25	0.6	0.9	10	300	20	250	6	5/6	66
							50	10	1	0.5	1.2	50							66
							45	1	1	0.5	1.2	50							66
							40	0.1	1	0.5	1.2	50							66
							30	50	1	0.25	0.65	0.85	10	200	10	260	5	5/8	66
							100	300	1	0.25	0.65	0.85	10	200	10	260	5	5/8	66
							80	1	1	0.5	1.2	50							66
							80	0.1	1	0.5	1.2	50							66
							15	100	1	0.25	0.65	0.85	10	200	10	260	5	5/8	66
							30	50	1	0.4	0.95	50							66
							50	10	1	0.4	0.95	50							66
							40	1	1	0.4	0.95	50							66
							30	0.1	1	0.4	0.95	50							66

6501130 NATL SEMICOND, (DISCRETE)

28C 35450

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	VCBO (V) Min	VCEO (V) Min	VEBO (V) Min	ICES [*] ICBO @ (mA) Max	VCE (V)	hFE @ IC & VCE (V)		VCE(SAT) (V) & VBE(SAT) (V)		IC (mA) @ IC Max	Cob (pF) Max	fT (MHz) Min	fT (MHz) Max	IC (mA) Max	toff (ns) Max	NF (dB) Max	Test Conditions	Process No.	
							Min	Max	Max	Min										Max
2N3906	TO-92 (92)	40	40	5			30 60 100 80	100 50 300 1	0.25 0.4	0.65 0.85 0.95	10 50	4.5	250	10	300		4	5/8	66	
2N4121	TO-92 (92)	Same as PN4121, see page 2-16 for explanation																		
2N4122	TO-92 (92)	Same as PN4122, see page 2-16 for explanation																		
2N4125	TO-92 (92)	30	30	4	50	20	25 50	50 150	0.4	0.95	50	4.5	200	10			5	8	66	
2N4126	TO-92 (92)	25	25	4	50	20	60	50	0.4	0.95	50	4.5	250	10			4	8	66	
2N4916	TO-92 (92)	Same as PN4916, see page 2-16 for explanation																		
2N4917	TO-92 (92)	Same as PN4917, see page 2-16 for explanation																		
2N5138	TO-92 (92)	Same as PN5138, see page 2-16 for explanation																		
2N5139	TO-92 (92)	Same as PN5139, see page 2-16 for explanation																		
MPS3905	TO-92 (92)	40	40	5			30 40 50 30	0.1 1 10 50	0.25	0.65 0.85	10	4.5	200	10			5	8	66	
MPS3906	TO-92 (92)	40	40	5			60 80 100 30	1 1 10 100	0.4	0.95	50	4.5	250	10			4	8	66	
MPS6516	TO-92 (92)	40	40	4	50	30	30 50	100 2	0.5	0.95	50	4							66	
MPS6517	TO-92 (92)	40	40	4	50	30	60 90	100 2	0.5	0.95	50	4							66	

TEST CONDITIONS:
 (1) IC = 300 mA, VCC = 10V, IB¹ = IB² = 30 mA, VCE = 6V, IB¹ = IB² = 15 mA, VCC = 15V, IB¹ = IB² = 30 mA, VCC = 30V, IB¹ = IB² = 30 mA.
 (2) IC = 10 mA, VCC = 3V, IB¹ = IB² = 1 mA, VCE = 5V, f = 1 kHz. (3) IC = 100 μA, VCE = 5V, f = 100 Hz. (4) IC = 300 mA, VCC = 30V, IB¹ = IB² = 30 mA.
 (5) IC = 10 mA, VCC = 3V, IB¹ = IB² = 1 mA, VCE = 5V, f = 1 kHz. (6) IC = 100 μA, VCE = 5V, f = 1 kHz. (7) IC = 30 μA, VCE = 5V, f = 1 kHz. (8) IC = 100 μA, VCE = 5V, f = 1 kHz. (9) IC = 250 μA, VCE = 5V, f = 1 kHz.
 (10) IC = 10 μA, VCE = 5V, f = 1 kHz. (11) IC = 50 mA, VCC = 30V, IB¹ = IB² = 5 mA, VCC = 150 mA, VCC = 30V, IB¹ = IB² = 15 mA. (12) IC = 150 mA, VCC = 30V, IB¹ = IB² = 5 mA. (13) IC = 50 mA, VCC = 10V, IB¹ = IB² = 5 mA.

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PNP Transistors

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PNP Transistors

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28C 35451 D

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GENERAL PURPOSE AMPS AND SWITCHES (Continued)



Type No.	Case Style	V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} (mA) Max	I _{CE0} (mA) Max	h _{FE} Min	I _C (mA) Max	V _{CE} (V) Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V)		I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	f _T (MHz) Max	f _{off} (Incl) Max	NF (dB) Max	Test Conditions	Process No.
										Max	Min								
MPS6518	TO-92 (92)		40	4	500	30	90 150 300	2	10	0.5	0.25	50	4	200					66
NS3905	TO-18	40	40	5			15 30 50 150	100 10 10 10	10	0.25	0.65 0.85	10	4.5	200		200	5	5/8	66
NS3906	TO-18	40	40	5			30 60 100 300	100 10 10 10	1	0.25	0.65 0.85	10	4.5	250		300	4	5/8	66
PN4121	TO-92 (92)	40	40	5	25*	30	15 70 200	50 10 10	1	0.13	0.75 0.7	1	4.5	400		150	4	11/8	66
PN4122	TO-92 (92)	40	40	5	25*	30	60 40	1 0.1	1	0.14	0.9 1.1	10 50	4.5	450		150	4	11/8	66
PN4916	TO-92 (92)	30	30	5	25*	15	15 70	50 10	1	0.13	0.75 0.9	1 10	4.5	400		150	4	13/8	66
PN4917	TO-92 (92)	30	30	5	25*	15	60 40	1 0.1	1	0.14	0.75 1.1	10 50	4.5	450		150	4	13/8	66
PN5138	TO-92 (92)	30	30	5	50	20	50 10	10 10	10	0.3	1.0	10	7	30					66
PN5139	TO-92 (92)	20	20	5	50*	15	50 800	0.1 10	10	0.2	0.7 1.0	10	5	300		200		13	66
ST3906	TO-92 (92)	40	40	5			60 80 100 300	0.1 1 10 100	1 1 1 1	0.5	0.75 1.25	50	4.5	250					66

6501130 NATL SEMICOND, (DISCRETE)

28C 35452

D

GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	V _{CEO} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} @ (mA) Max	I _{CB0} @ (mA) Max	V _{CB} (V)	I _{CE} @ (mA) Min	I _{CE} @ (mA) Max	V _{CE} (V)	V _{CE(SAT)} & V _{BE(SAT)} (V) Min	V _{CE(SAT)} & V _{BE(SAT)} (V) Max	I _C (mA) Min	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min	f _T (MHz) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N4354	TO-92 (92)																				67
Same as PN4354, see below for explanation																					
2N4355	TO-92 (92)																				67
Same as PN4355, see below for explanation																					
2N4356	TO-92 (92)																				67
Same as PN4356, see page 2-18 for explanation																					
2N5448	TO-92 (97)	50	30	5	100	20	30	150	50	5	0.25		50	12	100	50					67
MPSA55	TO-92 (92)		60	4	100	60	50	100	10	1	0.25		100		50	100					67
MPSA56	TO-92 (92)		80	4	100	80	50	100	10	1	0.25		100		50	100					67
Same as PN4354, see below for explanation																					
MPS4354	TO-92 (92)																				67
Same as PN4355, see below for explanation																					
MPS4355	TO-92 (92)																				67
Same as PN4356, see page 2-18 for explanation																					
MPS4356	TO-92 (92)																				67
MPS6562	TO-92 (92)			5	100	20	50	200	500	1	0.5		500	30	60	10					67
NS4234	TO-39		40		100 μA	40	40	150	250	1	0.6	1.5	1A	100	300	100					67
PN4354	TO-92 (92)	60	60	5	50	50	30	500	100	10	0.15	0.9	150	30	100	500	50	400		14/15	67
PN4355	TO-92 (92)	60	60	5	50	50	75	500	100	10	0.15	0.9	150	30	100	500	50	400		14/15	67

TEST CONDITIONS:

(1) I_C = 300 mA, V_{CC} = 10V, I_B¹ = I_B² = 30 mA, (2) I_C = 150 mA, V_{CC} = 6V, I_B¹ = I_B² = 15 mA, (3) I_C = 300 mA, V_{CC} = 15V, I_B¹ = I_B² = 30 mA, (4) I_C = 300 mA, V_{CC} = 30V, I_B¹ = I_B² = 30 mA, (5) I_C = 10 mA, V_{CC} = 3V, I_B¹ = I_B² = 1 mA, (6) I_C = 100 μA, V_{CE} = 5V, f = 100 Hz, (7) I_C = 30 μA, V_{CE} = 5V, f = 1 kHz, (8) I_C = 100 μA, V_{CE} = 5V, f = 1 kHz, (9) I_C = 250 μA, V_{CE} = 5V, f = 1 kHz, (10) I_C = 10 μA, V_{CE} = 5V, f = 1 kHz, (11) I_C = 50 mA, V_{CC} = 30V, I_B¹ = I_B² = 5 mA, (12) I_C = 150 mA, V_{CC} = 30V, I_B¹ = I_B² = 15 mA, (13) I_C = 50 mA, V_{CC} = 10V, I_B¹ = I_B² = 5 mA, (14) I_C = 500 mA, V_{CC} = 30V, I_B¹ = I_B² = 50 mA, (15) I_C = 100 μA, V_{CC} = 10V, f = 1 kHz.

T-29-01

PNP Transistors

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6501130 NATL SEMICOND, (DISCRETE)

28C 35453 D

PNP Transistors

GENERAL PURPOSE AMPS AND SWITCHES (Continued)

Type No.	Case Style	VCBO (V) Min	VCEO (V) Min	VEBO (V) Min	ICES* ICBO (mA) Max	VCB (V)	hFE @ IC (mA) & VCE (V)		VBE(SAT) (V) & VCE(SAT) (V)		IC (mA) @ IC (mA) Max	Cob (pF) Max	fT (MHz) @ IC (mA)		toff (ns) Max	NF (dB) Max	Test Conditions	Process No.	
							Min	Max	Min	Max			Min	Max					Min
PN4356	TO-92 (92)	80	80	5	50	50	30	500	10	0.15	0.9	150	30	100	500	400	3	14/15	67
PN5447	TO-92 (92)	40	25	5	100	20	60	300	5	0.25	1.1	500	12	100	50				67
TN4036	TO-237 (91)	90	65	7	20	60	20	140	10	0.65	1.4	150	30	60	50				67
TN4037	TO-237 (91)	60	40	7	250	60	15	250	10	1.4		150	30	60	200	50			67
MPS6563	TO-92 (92)			5	100	20	50	200	1	0.5		350	30	60	10				68
2N6076	TO-92 (94)	25	25	5	100	25	100	500	10	0.25	0.8	10							71
2N5400	TO-92 (92)	130	120	5	100	100	40	180	5	0.2	1.0	10	6	100	400	10	8	9	74
2N5401	TO-92 (92)	160	150	5	50	120	30	50	5	0.5	1.0	50	6	100	300	10	8	9	74
MPSL51	TO-92 (92)	100	100	4	1 μA	50	40	250	5	0.25	1.2	10	8	60	10				74

TEST CONDITIONS:
 (1) IC = 300 mA, VCC = 10V, IB1 = IB2 = 30 mA. (2) IC = 150 mA, VCC = 6V, IB1 = IB2 = 15 mA. (3) IC = 300 mA, VCC = 15V, IB1 = IB2 = 30 mA. (4) IC = 300 mA, VCC = 30V, IB1 = IB2 = 30 mA.
 (5) IC = 10 mA, VCC = 3V, IB1 = IB2 = 1 mA. (6) IC = 100 μA, VCE = 5V, f = 100 Hz. (7) IC = 30 μA, VCE = 5V, f = 1 kHz. (8) IC = 100 μA, VCE = 5V, f = 1 kHz. (9) IC = 250 μA, VCE = 5V, f = 1 kHz.
 (10) IC = 10 μA, VCE = 5V, f = 1 kHz. (11) IC = 50 mA, VCC = 30V, IB1 = IB2 = 5 mA. (12) IC = 150 mA, VCC = 30V, IB1 = IB2 = 15 mA. (13) IC = 50 mA, VCC = 10V, IB1 = IB2 = 5 mA. (14) IC = 500 mA, VCC = 30V, IB1 = IB2 = 50 mA. (15) IC = 100 μA, VCC = 10V, f = 1 kHz.

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