

NPN Transistors



Medium Power

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} * V _{CEO} (V) Min	V _{EBO} (V) Min	ICES* I _{CB0} (mA) Max	V _{CB} (V) Max	h _{FE} @ I _C & V _{CE} (mA) & (V)	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) @ I _C (mA)	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N699	TO-39	120	60	5	2	60	40 120 150 10	5.0 1.3 150 10	20	50	50				12
2N1613 also Avail. JAN/TX/V Versions	TO-5	75	35	7	10	60	20 500 10 10 40 120 150 10 35 10 10 20 100 μA 10	1.5 1.3 150 10	25	60	50		12	(Note 1)	12
2N1711	TO-5	75	35	7	10	60	40 500 10 10 100 300 150 10 75 10 10 35 100 μA 10 20 10 μA 10	1.5 1.3 150 10	25	70	50		8	(Note 1)	12
2N1890	TO-39	100	60	7	10	75	100 300 150 10	1.2 0.9 50 10 5.0 1.3 150	15	60	50				12
2N1893 also Avail. JAN/TX/V Versions	TO-39	100	80	7	10	90	40 120 150 10 35 10 10 20 0.1 10	1.2 0.9 50 10 5.0 1.3 150	15	50	50				12
2N2102	TO-39	120	65	7	2	60	10 0.01 10 20 0.1 10 35 10 10 40 120 150 10 25 500 10 10 1A 10	0.5 1.1 150 10	15	60	50				12
2N2192	TO-39	60	40	5	10	30	15 0.01 10 75 0.1 10 100 300 10 10 70 150 10 10 35 500 10 15 1A 10	0.35 1.3 150 10	10	50	50				12

Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} * V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} * I _{CB0} (mA) Max	h _{FE} @ I _C & 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) @ I _C (mA)		t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
											Min	Max				
2N2192A	TO-39	60	40	5	10	15	0.01	10	0.25	1.3	150	20	50			12
						75	0.1	10								
						100	300	10								
2N2193	TO-39	80	50	8	10	15	0.01	10	0.35	1.3	150	20	50			12
						30	0.1	10								
						40	120	10								
2N2193A	TO-39	80	50	8	10	15	0.1	10	0.25	1.3	150	20	50			12
						30	10	10								
						40	120	150	1							
2N2243	TO-39	120	80	7	10	15	0.1	10	0.35	1.3	150	15	50			12
						30	10	10								
						40	120	150	10							
2N2243A	TO-39	120	80	7	10	15	0.1	10	0.25	1.3	150	15	50			12
						30	10	10								
						40	120	150	1							
2N3019 also Avail. JAN/TX/V Versions	TO-39	140	80	7	10	15	0.1	10	0.2	1.1	150	12	100			12
						30	10	10								
						100	300	150	10							

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Type No.	Case Style	V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	I _{CB0} (mA) Max	h _{FE} Min	I _C (mA) Max	V _{CE} (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	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N3020	TO-39	140	80	7	10	90	30	100	0.1	10	0.2	1.1	150	12	80	50			12
							40	120	10	10		500							
							40	120	150	10	0.5								
							30	100	500	10									
							15	1A	10										
2N3053	TO-39	60	40	5	250	30	25	150	2.5	10	1.4	1.7	150	15	100	50			12
							50	250	150	10									
2N3107	TO-39	100	60	7	10	60	35	0.1	10		0.25	1.1	150	20	70	50	1000	7	(Notes 5 & 6)
							100	300	150	10		2.0	1A						
							40	500	10		1.0								
2N3108	TO-39	100	60	7	10	60	20	0.1	10		0.25	1.1	150	20	60	50	600	7	(Notes 5 & 6)
							40	120	150	10		2.0	1A						
							25	500	10		1.0								
2N3109	TO-39	80	40	7	10*	60	35	0.1	10		0.25	1.1	150	25	70	50	1000	7	(Notes 5 & 6)
							100	300	150	10		2.0	1A						
							40	500	10		1.0								
2N3110	TO-39	80	40	7	10*	60	20	0.1	10		0.25	1.1	150	25	60	50	600	7	(Notes 5 & 6)
							40	120	150	10		2.0	1A						
							25	500	10		1.0								
2N3568		Same as PN3568																	
2N3665	TO-39	120	80	10	50*	60	30	10	10		0.5	1.2	150	12	60	50			
							40	120	150	10		1.8	500						
							25	500	10		1.2								
2N3666	TO-39	120	80	10	50*	60	70	10	10		0.5	1.2	150	12	60	50			
							100	300	150	10		1.8	500						
							50	500	10		1.2								
2N3700	TO-18	140	80	7	10	90	50	1	10		0.2	1.1	150	12	100	200	5		T-27-01
							90	10	10		0.5		500						
							100	300	150	10									
							50	500	10		1.2								
							15	1A	10										

Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} [*] V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	V _{CB} (V) Max	h _{FE} Min	I _C (mA) Max	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	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N3701	TO-18	140	80	7	10	90	40	120	0.2	1.1	150	12	80	50				12
2N3945	TO-39	70	50	8	40	60	25	10	0.5	1.2	150	12	60	50				12
2N4945	TO-92 (92)	80	80	5	50	40	40	120	0.25	1.8	150		60	900				12
MPSA05	TO-92 (92)		60	4	100	60	50	10	0.25		100		100	100				12
MPSA06	TO-92 (92)		80	4	100	80	50	10	0.25		100		100	100				12
PN3568	TO-92 (92)	80	60	5	50	40	40	120	0.25		150	20	60	600				12
TN1711	TO-237 (91)	75		7	10	60	20	0.01	1.5		150	25						12
TN2102	TO-237 (91)	120	65	7	10	60	35	0.1	1.3		150							12
TN3019	TO-237 (91)	140	80	7	10	90	75	10	0.5	1.1	150	15	60	50			T-27-01	12
							100	300	0.5		500		100	50				
							50	500										
							10	1A										
							50	1	0.2	1.1	150	12	100	50				
							90	10										
							100	300										
							50	500										
							15	1A										

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} [*] V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	I _{CB0} (mA) Max	I _{CB0} (mA) Max	h _{FE} @ I _C & V _{CE} (V) Min Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Min Max	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min Max	I _C (mA) Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.	
																		h _{FE} Min
TN3020	TO-237 (91)	140	80	7	10	90	30	100	0.2	1.1	150	12	80	50			12	
TN3053	TO-237 (91)	60	40	5	250	30	25	150	1.4	1.7	150	15	100	50			12	
PN3566	TO-92 (92)	40	30	5	50	20	150	600	1.0		100	25	4	100			13	
PN3567	TO-92 (92)	80	40	5	50	40	40	120	0.25		150	20	60	50			13	
PN3569	TO-92 (92)	80	40	5	50	40	100	300	0.25		150	20	60	50			13	
2N3566		Same as PN3566																
2N3567		Same as PN3567																
2N3569		Same as PN3569																
2N2657	TO-39	80	50	8	100	60	15	5A	0.5	1.5	1A	150	20	200	15		2	34
2N2658	TO-39	100	80	8	100	60	15	5A	0.5	1.5	1A		20	200	15		2	34
2N2890	TO-39	100	80	5	50 μA	60	25	2A	0.5	1.2	1A	70	30	200	15		3	34
2N2891	TO-39	100	80	5	50 μA	60	50	300	0.5	1.2	1A	70	30	200	15		3	34

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} * V _{CEO} (V) Min	V _{EBO} (V) Min	I _{CS} * I _{CB0} (mA) Max	V _{CB} (V)	h _{FE} Min	I _C (mA) Max	V _{CE} (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	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
2N5148	TO-39		80		1 μA	60	20	50	5	0.46	1.2	100	70	60	200				34
2N5150	TO-39		80		1 μA	60	60	50	5	0.46	1.2	100	70	60	200				34
2N5336	TO-39		80		10 μA	80	30	600	2	0.7	1.2	2A		30	500	2200		7	34
2N5338	TO-39		100		10 μA	100	30	120	2	0.7	1.2	2A		30	500	2200		7	34
2N3439	TO-39	450	350	7	20 μA	360	40	160	20	0.5	1.3	50	10	15	10			10	36
2N3440	TO-39		250		20 μA*	300	40	160	20										36
2N6591	TO-202 (55)	150	150	5	200	100	40	250	10	0.8		200							36
2N6592	TO-202 (55)	200	200	5	200	150	30	250	10	0.8		200							36
2N6593	TO-202 (55)	250	250	5	200	200	30	250	10	0.8		200							36
2N6720	TO-237 (91)	175	150	6	1 μA	150	25	50	10	0.5		100		30	300			T-27-01	36
2N6721	TO-237 (91)	225	200	6	1 μA	200	25	50	10	0.5		100		30	300			T-27-01	36

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Medium Power (Continued)																		
Type No.	Case Style	V _{CE0} (V) Min	V _{CE0} (V) Min	V _{BE0} (V) Min	I _{CS} [*] I _{CS0} (μ A) Max	h _{FE} Min	I _C (mA) Max	V _{CE} (V) Max	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Max	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.
2N6722	TO-237 (91)	275	250	6	1 μ A	25 30	50 100	10 10	0.5		100		30	300				36
2N6723	TO-237 (91)	325	300	6	1 μ A	25 15 10	50 100 250	10 10	0.5		100		30	300				36
92PU36	TO-237 (91)	175	150	6	1 μ A	25 30 15	50 100 250	10 10	0.5		100							36
92PU36A	TO-237 (91)	225	200	6	1 μ A	25 30 15	50 100 250	10 10	0.5		100							36
92PU36B	TO-237 (91)	275	250	6	1 μ A	25 30 15 10	50 100 250 500	10 10	0.5		100							36
92PU36C	TO-237 (91)	325	300	6	1 μ A	25 30 15 10	50 100 250 500	10 10	0.5		100							36
D40P1	TO-202 (55)		120		10 μ A	20 40	2 80	10 10	1.0		100	15	10					36
D40P3	TO-202 (55)		180		10 μ A	20 40	2 80	10 10	1.0	1.5	100	15	10					36
D40P5	TO-202 (55)		225		10 μ A	20 40	2 80	10 10	1.0	1.5	100	15	10					36

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} (mA) Max	V _{CB} (V)	I _{CB0} (mA) Max	I _{CE0} (mA) Min	I _{CE0} (mA) Max	I _{CE0} (mA) Max	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	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
NSD36	TO-202 (55)	175	150	6	1 μA	150	1	25	50	10	0.5		15	10	50					36
NSD36A	TO-202 (55)	225	200	6	1 μA	200	1	25	50	10	0.5		15	10	50					36
NSD36B	TO-202 (55)	275	250	6	1 μA	250	1	25	50	10	0.5		15	10	50					36
NSD36C	TO-202 (55)	325	300	6	1 μA	300	1	25	50	10	0.5		15	10	50					36
NSD3439	TO-202 (55)		350		20 μA	300	20	30	2	10	0.5	1.3	50	20	10					36
NSD3440	TO-202 (55)		250		500 μA	200	500	30	2	10	0.5	1.3	50	20	10					36*
TN3440	TO-237 (91)		250		20 μA	250	20	30	2	10	0.5	1.3	50		15					36
2N6714	TO-237 (91)	40	30	5	100	40	100	55	10	1	0.5		100		50	500				37
92PU01	TO-237 (91)		30	5	100	40	100	55	10	1	0.5		1A	30	100					37
D40D1	TO-202 (55)		30		100*	45	100*	50	150	100	0.5	1.5	500							37

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Type No.	Case Style	V _{CB0} (V) Min	V _{CER} * V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CB0} * (mA) Max	V _{CB} (V)	I _{CB0} * (mA) Max	I _{CE} & V _{CE} (V)	V _{CE(SAT)} (V) & 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.	
D40D2	TO-202 (55)		30		100*	45	100*	120 360 100 20 1A	0.5	1.5	500								37
D40D3	TO-202 (55)		30		100*	45	100*	290 100 10 1A	1.5	500									37
D40E1	TO-202 (55)		30		100*	40	100*	50 100 2 10 1A 2	1.0	1.3	1A								37
D42C1	TO-202 (56)		30		1 μA	30	1 μA	25 200 1 10 1A 1	0.5	1.3	1A	30							37
D42C2	TO-202 (56)		30		1 μA	30	1 μA	40 120 200 1 20 1A 1	0.5	1.3	1A	30							37
D42C3	TO-202 (56)		30		1 μA	30	1 μA	40 200 1 20 2A 1	0.5	1.3	1A	30							37
NSDU01	TO-202 (55)	40	30	5	100	30	100	55 10 1 60 100 1 50 1A 1	0.5	1.2	1A	30	50	50					37
92PU01A	TO-237 (91)		40	5	100	50	100	55 10 1 60 100 1 50 1A 1	0.5	1A	50	30	100	50					38 *
92PU05	TO-237 (91)	60	100	4	100	80	100	80 50 1 50 250 1 20 500 1	0.35	250	200	30	50	200					38
D40D4	TO-202 (55)		45		100*	60	100*	50 150 100 10 1A	0.5	1.5	500								38
D40D5	TO-202 (55)		45		100*	60	100*	120 360 100 10 1A	0.5	1.5	500								38
D40D6	TO-202 (55)		45		100*	60	100*	50 150 100 10 1A	1.0	1.5	500								38
D40D7	TO-202 (55)		60		100*	60	100*	50 150 100 10 1A	1.0	1.5	500								38
D40D8	TO-202 (55)		60		100*	75	100*	120 360 100 2 10 1A 2	1.0	1.5	500								38

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} [*] V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	V _{CB} (V)	h _{FE} @ I _C & V _{CE} (mA) (V)	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) @ I _C (mA)	C _{ob} (pF) Max	f _T (MHz) @ I _C (mA)	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
D40E5	TO-202 (55)		60		100*	70	50 10	1.0 1.3						38
D42C4	TO-202 (56)		45		1 μA	45	25 10	0.5 1.3	30					38
D42C5	TO-202 (56)		45		1 μA	45	40 20	0.5 1.3	30					38
D42C6	TO-202 (56)		45		1 μA	45	40 20	0.5 1.3	30					38
MPS6715	TO-237 TO-226 (99)		40	5	100	50	55 60 50	0.5 1A	30	50				38
MPS6717	TO-226 (99)	80	80	5	100	60	80 50 20	0.35 250 500		50 500	200			38
MPSW01	TO-226 (99)		40	5	100	50	55 60 50	0.5 1A	30	100	50			38
NSD102	TO-202 (55)	60	45	5	100	60	40 50 40 25	0.2 0.9 0.4 1.2	30	60	50			38
NSD103	TO-202 (55)	60	45	5	100	60	50 120 50 30	0.2 0.9 0.4 1.2	30	60	50			38
NSD6179	TO-202 (55)		50		500 μA	60	30 40 10	0.5 1.2					T-27-01	38
NSDU01A	TO-202 (55)	50	40	5	100	40	55 60 50	0.5 1.2	30	50	50			38

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Type No.	Case Style	V _{CB0} (V) Min	V _{CE} [*] V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	I _{FE} @ I _C & V _{CE} (mA) Min Max	V _{CE(SAT)} (V) Max	V _{BE(SAT)} (V) Min Max	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
NSDU05	TO-202 (55)	60	60	4	100	80 50 1 50 250 1 20 500 1	0.35	250	30	50	200				38
NSE181	TO-202 (56)		60		100	50 250 10 1 30 500 1 12 1A 1.5	0.3	500		50	200				38
2N6553	TO-202 (55)	100	100	5	100	60 10 1 80 250 50 1 60 250 1 25 500 1	1.0	1A		75	250 100				39
2N6717	TO-237 (91)	80	80	5	100	80 50 1 50 250 250 1 20 500 1	0.35	250		50	500 200				39
2N6718	TO-237 (91)	100	100	5	100	80 50 1 50 250 250 1 20 500 1	0.35	350		50	500 200				39
2N6731	TO-237 (91)	100	80	5	100	100 10 2 100 300 350 2	0.35	350		50	500 200				39
92PU06	TO-237 (91)	80	80	4	100	20 500 500 1 50 250 250 1 80 50 50 1	0.35	250	30	50	200				39
92PU07	TO-237 (91)	100	100	4	100	80 50 1 50 250 1 20 500 1	0.35	250	30	50	200				39
92PU100	TO-237 (91)	100	80		100	20 10 5 50 150 100 5 10 1A 5	0.35	350	20	50	100				39
D40D10	TO-202 (55)		75		100*	50 150 100 2 10 1A 2	1.0	500							39
D40D11	TO-202 (55)		75		100*	120 360 100 2 10 1A 2	1.0	500							39

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Medium Power (Continued)

Type No.	Case Style	VCBO (V) Min	VCER* VCEO (V) Min	VEBO (V) Min	ICES* ICBO (mA) Max	V _{CB} (V)	I _{FE} @ I _C & V _{CE} (mA) Min Max	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Max Min	I _C (mA) Max	C _{ob} (pF) Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
D40D13	TO-202 (55)		75		100*	90	50 150 100 2	1.0	1.5 500						39
D40D14	TO-202 (55)		75		100*	90	120 360 100 2	1.0	1.5 500						39
D40E7	TO-202 (55)		80		100*	90	50 100 2 1A 2	1.0	1.3 1A						39
MPSW06	TO-226 (99)	80	80	4	100	80	80 50 1 250 1 20 500 1	0.35	250 30	30	50 200				39
NSD104	TO-202 (55)	100	80	7	100	100	20 10 5 50 150 100 5 10 1A 5	0.2 0.5	0.9 100 1.2 500	30	60 50				39
NSD105	TO-202 (55)	100	80	7	100	100	10 10 5 120 360 100 5 10 1A 5	0.2 0.5	0.9 100 1.2 500	30	60 50				39
NSD106	TO-202 (55)	140	100	7	100	140	20 10 5 50 150 100 5 25 500 5	0.2 0.5	0.9 100 1.2 500	30	60 50				39
NSD6178	TO-202 (55)		75		500 μA	80	30 50 2 40 250 500 2 10 1A 2	0.5	1.2 500						39
NSDU06	TO-202 (55)	80	80	4	100	80	80 50 1 50 250 1 20 500 1	0.35	250 30	30	50 200				39
NSDU07	TO-202 (55)	100	100	4	100	100	80 50 1 50 250 1 20 500 1	0.35	250 30	30	50 200				39
2N6711	TO-237 (90)	160	160	7	50	100	15 1 10 15 10 10 30 200 30 10				40 200 10				48

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Type No.	Case Style	V _{CB0} (V)		V _{CE0} (V)		V _{EB0} (V)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		I _{CB0} (mA)		Process No.
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
2N6712	TO-237 (90)	250	300	250	300	7	7	50	200	15	15	30	200	10	10	40	200	10	10	40	200	10	10	48
2N6713	TO-237 (90)	300	300	300	300	7	7	50	250	15	15	30	200	10	10	40	200	10	10	40	200	10	10	48
2N6719	TO-237 (91)	300	300	300	300	7	7	100	200	25	40	40	200	10	10	30	300	15	15	30	300	15	15	48
2N6733	TO-237 (91)	200	200	200	200	6	6	100	160	25	40	40	200	10	10	50	200	10	10	50	200	10	10	48
2N6734	TO-237 (91)	250	250	250	250	6	6	100	200	25	40	40	200	10	10	50	200	10	10	50	200	10	10	48
2N6735	TO-237 (91)	300	300	300	300	6	6	100	260	25	40	40	200	10	10	50	200	10	10	50	200	10	10	48
92PE487	TO-237 (90)	160	160	160	160	7	7	50	100	15	15	30	200	10	10	40	200	10	10	40	200	10	10	48
92PE488	TO-237 (90)	250	250	250	250	7	7	50	100	15	15	30	200	10	10	40	200	10	10	40	200	10	10	48
92PE489	TO-237 (90)	300	300	300	300	7	7	50	200	15	15	30	200	10	10	40	200	10	10	40	200	10	10	48
92PU10	TO-237 (91)		300		300			100	200	25	40	40	200	10	10	40	200	10	10	40	200	10	10	48
92PU391	TO-237 (91)	200	200	200	200	6	6	100	160	25	40	40	200	10	10	50	200	10	10	50	200	10	10	48
92PU392	TO-237 (91)	250	250	250	250	6	6	100	200	25	40	40	200	10	10	50	200	10	10	50	200	10	10	48

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V) Min	V _{CER} [*] V _{CE0} (V) Min	V _{EB0} (V) Min	I _{CB0} [*] (mA) Max	V _{CB} (V)	I _{CE} [*] (mA) Min	I _{CE} (mA) Max	V _{CE} (V) Min	V _{CE} (V) Max	V _{BE(SAT)} (V) Min	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.
92PU393	TO-237 (91)	300	300	6	100	260	25	1	10	2.0	2.0	2.0	10	50	2.5	50					48
D40N1	TO-202 (55)		250		10	250	20	4	10				20	50							48
D40N2	TO-202 (55)		250		10	250	30	4	10				20	50							48
D40N3	TO-202 (55)		300		10	300	20	4	10				20	50							48
D40N4	TO-202 (55)		300		10	300	30	4	10				20	50							48
MPS6733	TO-226 (99)	200	200	6	100	160	25	1	10	2.0	2.0	2.0	10	50		50	200	10			48
MPS6734	TO-226 (99)	250	250	6	100	200	25	1	10	2.0	2.0	2.0	10	50		50	200	10			48
MPS6735	TO-226 (99)	300	300	6	100	260	25	1	10				10	50		50	200	10			48
MPSA42	TO-92 (92)	300	300	6	100	200	25	1	10	0.5	0.5	0.5	10	50	3	50					48
MPSA43	TO-92 (92)	200	200	6	100	160	25	1	10	0.4	0.4	0.4	10	50	4	50					48
92PU10 MPSW10	TO-226 (99)		300		100	200	25	1	10	0.75	0.75	0.75	30		3.5						48
MPSA42 MPSW42	TO-226 (99)	300	300	6	100	200	25	1	10	0.5	0.5	0.5	20	50	3	50					48

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Medium Power (Continued)														
Type No.	Case Style	V _{CSO} (V) Min	V _{CEr} [*] V _{CEO} (V) Min	V _{EB0} (V) Min	I _{CS} [*] I _{CB0} (mA) Max	I _{CB} (V)	h _{FE} @ I _C & V _{CE} (mA) (V)	V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Min Max	I _C (mA) Min Max	f _T (MHz) Min Max	t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
MPSA43	TO-226 (99)	200	200	6	100	160	25 40 5	0.4 0.9	20	50				48
MPSW43							10 10 2000							48
NSD131	TO-202 (55)	250	250	7	100	150	15 15 30	1.0 0.85	20					48
NSD132	TO-202 (55)	250	250	7	100	150	15 30 60	1.0 0.85	20					48
NSD133	TO-202 (55)	300	300	7	100	150	15 15 30	1.0 0.85	20					48
NSD134	TO-202 (55)	300	300	7	100	150	15 30 60	1.0 0.85	20					48
NSD135	TO-202 (55)	375	375	7	100	150	15 30 30	1.0 0.85	20					48
NSD457	TO-202 (55)	160	160	5	50	100	25 30 30	1.0	30					48
NSD458	TO-202 (55)	250	250	5	50	200	25	1.0	30					48
NSD459	TO-202 (55)	300	300	5	50	250	25	1.0	30					48
NSDU10	TO-202 (55)	300	300	8	200	200	25 40 40	1.5 0.8	20	60				48
NSE457	TO-202 (55)	160	160	5	50	100	25	1.0	30					48
NSE458	TO-202 (55)	250	250	5	50	200	25	1.0	30					48

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Medium Power (Continued)

Type No.	Case Style	V _{CB0} (V)		V _{CER} [*] (V)		V _{EB0} (V)		I _{CB0} [*] (mA)		I _{CE} [*] (mA)		I _C & V _{CE} (V)		V _{CE(SAT)} (V) & V _{BE(SAT)} (V)		f _T (MHz)		t _{off} (ns) Max	NF (dB) Max	Test Conditions	Process No.
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max				
NSE459	TO-202 (55)	300	300	300	5	50	250	25	30	10	1.0	30	30	1.0	30	30	10				48
TN3742	TO-237 (91)	300	300	300	7	100	200	10	3	10	0.75	10	10	1.0	10	30	10				48

TEST CONDITIONS:

- Note 1: I_C = 50 mA, V_{CE} = 100V, I_B¹ = I_B² = 5 mA.
- Note 2: I_C = 500 μA, V_{CE} = 10V, f = 1 kHz.
- Note 3: I_C = 500 mA, V_{CE} = 30V, I_B¹ = I_B² = 50 mA.
- Note 4: I_C = 150 mA, V_{CE} = 30V, I_B¹ = I_B² = 15 mA.
- Note 5: I_C = 100 μA, V_{CE} = 10V, f = 1 kHz.
- Note 6: I_C = 500 mA, V_{CE} = 30V, I_B¹ = I_B² = 50 mA.
- Note 7: I_C = 2A, V_{CE} = 40V, I_B¹ = I_B² = 200 mA.
- Note 8: I_C = 1 mA, V_{CE} = 6V, f = 60 kHz.
- Note 9: I_C/I_B = 8.
- Note 10: I_C/I_B = 12.5.

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