

# NPN TO-63

Case 807

$I_{C(MAX)} = 20 \text{ to } 60 \text{ A}$   
 $V_{CEO(SUS)} = 40 \text{ to } 300 \text{ V}$   
 $f_T = 0.6 \text{ to } 30 \text{ MHz}$

Type No.	V <sub>CEO</sub> (SUS) (V)	I <sub>C</sub> (MAX) (A)	h <sub>FE</sub> @ I <sub>C</sub> /V <sub>CE</sub> (min-max @ A/V)	V <sub>CE</sub> (SAT) @ I <sub>C</sub> /I <sub>B</sub> (V @ A/A)	V <sub>BE</sub> @ I <sub>C</sub> /V <sub>CE</sub> (V @ A/V)	V <sub>BE</sub> (SAT) @ I <sub>C</sub> /I <sub>B</sub> (V @ A/A)	I <sub>CEV</sub> @ V <sub>CE</sub> (mA @ V)	P <sub>D</sub> @ T <sub>C</sub> = 100 °C (Watts)	I <sub>s</sub> /b @ V <sub>CE</sub> t = 1 sec (A @ V)	f <sub>T</sub> (MHz)	t <sub>ON</sub> @ I <sub>C</sub> /I <sub>B</sub> (μs @ A/A)	t <sub>OFF</sub> @ I <sub>C</sub> /I <sub>B</sub> (μs @ A/A)
2N1936	60	20	10-50@10/10	.75@10/1.6	1.25@10/3		10@120	150	5@30	4	5.5@15/1.2	1.5@15/1.2
2N1937	80	20	10-50@10/10	.75@10/1.6	1.25@10/3		10@120	150	5@30	4	5.5@15/1.2	1.5@15/1.2
2N3265	90	20	25-55@15/2	1@20/2		1.8@20/2	20@150	100	.35@75	20	5@15/1.2	2@15/1.2
2N3266	60	20	20-80@15/3	1.6@20/2		2.2@20/2	20@120	100	.70@50	20	5@15/1.2	2@15/1.2
2N3846	200	20	40-200@5/3	.75@10/1.6	1.2@10/3		2 <sup>g</sup> @300	150	7.5@20	10	4@10/2	7@10/2
2N3847	300	20	40-200@5/3	.75@10/1.6	1.2@10/3		2 <sup>g</sup> @400	150	7.5@20	10	4@10/2	7@10/2
2N3848	200	20	40-200@5/4	1@15/2	1.4@15/4		2 <sup>g</sup> @300	150	7.5@20	10	4@10/2	7@10/2
2N3849	300	20	40-200@5/4	1@15/2	1.4@15/4		2 <sup>g</sup> @400	150	7.5@20	10	4@10/2	7@10/2
2N4002	80	30	20-80@15/4	1.2@30/4	1.8@30/4		1 <sup>g</sup> @90	100	8@12.5	30	1@15/1.5	3@15/1.5
2N4003	100	30	20-80@15/4	1.2@30/4	1.8@30/4		1 <sup>g</sup> @110	100	8@12.5	30	1@15/1.5	3@15/1.5
2N4210	60	20	20-100@10/6	1@10/1	1.6@10/6		5 <sup>g</sup> @80	100	3.3@30	10	5.5@15/1.2	1.5@15/1.2
2N4211	80	20	20-100@10/6	1@10/1	1.6@10/6		5 <sup>g</sup> @100	100	3.3@30	10	5.5@15/1.2	1.5@15/1.2
2N5539	130	20	20-75@10/5	.8@15/1.5		1.5@15/1.5	2@175	100	3.3@30	20	5@10/1	2@10/1
2N5733	80	30	30-300@10/2	1.2@20/2	1.5 <sup>g</sup> @20/2		1 <sup>g</sup> @100	100	6 <sup>g</sup> @25	30	.7@10/1	4@10/1
2N5968	100	30	30-120@10/10	.8@10/1			5 <sup>g</sup> @100	125	5@25	10	5@30/3	1@30/3
2N6046	60	20	20-100@20/4	2@20/1.33			5@70	114	5.2@22	30	6@20/1.33	9@20/1.33
2N6047	100	20	20-100@20/4	2@20/1.33			5@110	114	5.2@22	30	6@20/1.33	9@20/1.33
2N6048	140	20	20-100@20/4	2@20/1.33			5@150	114	5.2@22	30	6@20/1.33	9@20/1.33
2N6062	100	50	20-120@20/10	1@20/2			2.5@60/6	150	6@25	10	5@40/4	1@40/4
2N6215	80	50	25-150@25/2	1.5@50/5			1.5@25/1.25	125	.7@18	20	1@25/1.25	1.25@25/1.25
2N6278	100	50	30-120@20/4	1.2@20/2			1.8@20/2	143	30@8.3	30	.35@20/2	1.05@20/2
2N6279	120	50	30-120@20/4	1.2@20/2			1.8@20/2	143	30@8.3	30	.35@20/2	1.05@20/2
2N6280	140	50	30-120@20/4	1.2@20/2			1.8@20/2	143	30@8.3	30	.35@20/2	1.05@20/2
2N6281	150	50	30-120@20/4	1.2@20/2			1.8@20/2	143	30@8.3	30	.35@20/2	1.05@20/2
2N6324	200	30	40-150@5/5	1.5@20/2	2.5@30/5		2 <sup>g</sup> @300	200	4.5@44	10	6.5@20/2	3@20/2
2N6325	300	30	30-150@5/5	1.5@20/2	2.5@30/5		2 <sup>g</sup> @400	200	4.5@44	10	6.5@20/2	3@20/2

NOTES: b) I<sub>CEO</sub> @ V<sub>CE</sub> (mA @ V) g) I<sub>CEV</sub> @ V<sub>CE</sub> (mA @ V) t) (typical)

# NPN TO-114

Case 808

$I_{C(MAX)} = 40 \text{ to } 100 \text{ A}$   
 $V_{CEO(SUS)} = 40 \text{ to } 160 \text{ V}$   
 $f_T = 0.1 \text{ to } 20 \text{ MHz}$

Type No.	V <sub>CEO</sub> (SUS) (V)	I <sub>C</sub> (MAX) (A)	h <sub>FE</sub> @ I <sub>C</sub> /V <sub>CE</sub> (min-max @ A/V)	V <sub>CE</sub> (SAT) @ I <sub>C</sub> /I <sub>B</sub> (V @ A/A)	V <sub>BE</sub> @ I <sub>C</sub> /V <sub>CE</sub> (V @ A/V)	V <sub>BE</sub> (SAT) @ I <sub>C</sub> /I <sub>B</sub> (V @ A/A)	I <sub>CEV</sub> @ V <sub>CE</sub> (mA @ V)	P <sub>D</sub> @ T <sub>C</sub> = 100 °C (Watts)	I <sub>s</sub> /b @ V <sub>CE</sub> t = 1 sec (A @ V)	f <sub>T</sub> (MHz)	t <sub>ON</sub> @ I <sub>C</sub> /I <sub>B</sub> (μs @ A/A)	t <sub>OFF</sub> @ I <sub>C</sub> /I <sub>B</sub> (μs @ A/A)
2N3149	80	70	>10@50/3	1.5@50/10		2.5@10/10	2@80	200		.1	1@50/10	20@50/10
2N3150	100	70	>10@50/3	1.5@50/10		2.5@50/10	2@100	200		.1	1@50/10	20@50/10
2N3151	150	70	>10@50/3	1.5@50/10		2.5@50/10	2@150	200		.1	1@50/10	20@50/10
2N4865	80	90	10-40@70/5	2.5@70/7		2.5@70/7	5@100	200	10@20	10	2@70/7	2@70/7
2N4866	120	90	10-40@70/5	2.5@70/7		2.5@70/7	5@140	200	10@20	10	2@70/7	2@70/7
2N4950	60	70	>10@50/3	1.5@50/10		2.5@50/10	2@60	200		.1	1@50/10	20@50/10
2N5250	100	90	10-40@70/5	2.5@70/7		2.5@70/7	5@125	200	10@20	10	2@70/7	2@70/7
2N5251	150	90	10-40@70/5	2.5@70/7		2.5@70/7	5@180	200	10@20	10	2@70/7	2@70/7
2N5489	100	40	15-60@40/6	1.5@40/8		2.5@40/6	2 <sup>g</sup> @125	200		.5	2@70/7	2@70/7
2N5587	120	80	10-30@80/2	2@80/8		2.5@80/8	2 <sup>g</sup> @160	200		.5	2@70/7	2@70/7
2N5588	160	80	10-30@80/2	2@80/8		2.5@80/8	2 <sup>g</sup> @160	200		.5	2@70/7	2@70/7
2N5927	120	100	10-40@70/2	75@70/7		1.5@70/2	2@150	200		1	2.5@50/10	5.5@50/10

NOTES: g) I<sub>CEV</sub> @ V<sub>CE</sub> (mA @ V) k) V<sub>BE</sub> @ I<sub>C</sub>/V<sub>CE</sub> (V @ A/V) t) (typical)



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