

# TO-220 Power Package Transistors (NPN)

Maximum Ratings						Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)													
Type No.	V <sub>CB0</sub> (V)	V <sub>CEO</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CB</sub> (V)	I <sub>CES</sub> (μA)	V <sub>CE</sub> (V)	h <sub>FE</sub>	I <sub>C</sub> (A)	V <sub>CE</sub> (V)	V <sub>CE(SAT)</sub> (V)	V <sub>BE(SAT)</sub> (V)	I <sub>C</sub> (A)	C <sub>ob</sub> (pF)	f <sub>i</sub> (MHz)	I <sub>C</sub> (mA)	
	Min	Min	Min	@Tc=25°C		Max	⊖	Max	⊖	Min	Max	⊖	Max	Min	Max	Max	Typ	Min	Max
TIP120	60	60	5	65	5	200	60			1000	0.5	3	2		3	200			
										1000	3	3	4		5				
TIP121	80	80	5	65	5	200	80			1000	3	3	2		3	200			
										1000	0.5	3	4		5				
TIP122	100	100	5	65	5	200	100			1000	3	3	2		3	200			
										1000	0.5	3	4		5				
TIP29	40	40	5	30	1			200	40	40	0.2	4	0.7		1		3		200
										15	1	4							
TIP29A	60	60	5	30	1			200	60	40	0.2	4	0.7		1		3		200
										15	1	4							
TIP29B	80	80	5	30	1			200	80	40	0.2	4	0.7		1		3		200
										15	1	4							
TIP29C	100	100	5	30	1			200	100	40	0.2	4	0.7		1		3		200
										15	1	4							
TIP31	40	40	5	40	3			200	40	10	50	3	4	1.2	3		3		500
										25	1	4							
TIP31A	60	60	5	40	3			200	60	10	50	3	4	1.2	3		3		500
										25	1	4							
TIP31B	80	80	5	40	3			200	80	10	50	3	4	1.2	3		3		500
										25	1	4							
TIP31C	100	100	5	40	3			200	100	10	50	3	4	1.2	3		3		500
										25	1	4							
TIP41	40	40	5	65	6			400	40	15	75	3	4	1.5	6		3		500
										30	0.3	4							
TIP41A	60	60	5	65	6			400	60	15	75	3	4	1.5	6		3		500
										30	0.3	4							
TIP41B	80	80	5	65	6			400	80	15	75	3	4	1.5	6		3		500
										30	0.3	4							
TIP41C	100	100	5	65	6			400	100	15	75	3	4	1.5	6		3		500
										30	0.3	4							
TIP47	350	250	5	40	1			1000	350	30	150	0.3	10	1	1		10		200
										10	1	10							
TIP48	400	300	5	40	1			1000	400	30	150	0.3	10	1	1		10		200
										10	1	10							
TIP49	450	350	5	40	1			1000	450	30	150	0.3	10	1	1		10		200
										10	1	10							
TIP50	500	400	5	40	1			1000	500	30	150	0.3	10	1	1		10		200
										10	1	10							