

TO-18 Metal-Can Package Transistors (NPN)

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)																	
Type No.	V _{CBO} (V)	V _{CEO} (V)	V _{EBO} (V)	P _D (W)	I _C (A)	I _{CM} (A)	I _{CBO} (μA)	V _{CB} (V)	I _{CES} (μA)	V _{CE} (V)	h _{FE}	I _C & (mA)	V _{CE} (V)	V _{CE(SAT)} (V)	V _{BE(SAT)} (V)	I _C (mA)	C _{ob} (pF)	f _t (MHz)	t _{off} (ns)	NF (dB)	Freq (MHz)			
	Min	Min	Min	@ T _C =25°C			Max	@ (V)	Max	@ (V)	Min	Max	Max	Max	Min	Max	Min	Max	Typ	Min	Typ	Max		
2N1987	50	25	5	0.6	1		5	30			20	30	10	0.6	0.9	30	20	35						
											20	80	150	10	1.5	1.3	150							
2N1988	100	45	5	0.6		1	5	50			35	120	30	10	2	1	30	20						
2N1989	100	45	5	0.6		1	5	50			20	60	30	10	2	1	30	20						
2N1990	100		3	0.6							20		30	10	0.5	1	2							
2N2049	75	50	7	0.8	0.5		0.01	60			100	300	150	10	0.4		10	25		50				
2N2102	120	65	7	1	1		0.002	60			10		1000	10	0.5	1.1	150	15	60		50	6	0.001	
											25		500	10										
											40	120	150	10										
											35		10	10										
											20		0.1	10										
2N2192	60	40	5	0.8	1		0.01	30			15		0.1	10	0.35	1.3	150	20	50		50			
											75		10	10										
											100	300	150	10										
											35		500	10										
											15		1000	10										
											70		150	1										
2N2193	80	50	8	0.8	1		0.01	60			15		0.1	10	0.35	1.3	150	20	50		50			
											30		10	10										
											40	120	150	10										
											20		500	10										
											15		1000	10										
											30		150	1										
2N2194	60	40	5	0.8	1		0.01	30			15		10	10	0.35	1.3	150	20	50		50			
											20	60	150	10										
											12		500	10										
											15		150	1										
2N2195	45	25	5	0.6		1	0.1	30			20		150	10	0.35	1.3	150	20	50		50			
											10		150	1										
2N2218	60	30	5	0.8	0.8		0.01	50			20		500	10	0.4	0.6	1.3	150	8	250		20		
											20		150	1	1.6	2.6	500							
											40	120	150	10										
											35		10	10										
											25		1	10										
											20		0.1	10										
2N2218A	75	40	6	0.8	0.8		0.01	60	* 0.01	60	20		0.1	10	0.3	0.6	1.2	150	8	300		20		
											25		1	10	1		2	500						
											35		10	10										
											40	120	150	10										
											20		150	1										
											25		500	1										
2N2219	60	30	5	0.8	0.8		0.01	50			35		0.1	10	0.4	0.6	1.3	150	8	250		20		
											50		1	10	1.6	2.6	500							
											75		10	10										
											100	300	150	10										
											50		150	1										
											30		500	1										
2N2219A	75	40	6	0.8	0.8		0.01	60	* 0.01	60	35		0.1	10	0.3	0.6	1.2	150	8	300		20		
											50		1	10	1		2	500						
											75		10	10										
											100	300	150	10										
											50		150	1										
											40		500	1										

* NOTE: I_{CEX}