

TO-220 Power 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 _{CBO} (μA)	V _{CB} (V)	I _{CES} (μA)	V _{CE} (V)	h _{FE}	β	I _C (A)	V _{CE} (V)	V _{CE(SAT)} (V)	V _{BE(SAT)} (V)	I _C (A)	C _{ob} (pF)	f _t (MHz)	I _C (mA)		
	Min	Min	Min	@Tc=25°C		Max	@ (V)	Max	@ (V)	Min	Max	& (A)	(V)	Max	Min	Max	Max	Typ	Min	Typ	Max
2SC2335R	500	400	7	40	7	10	400			20	80	0.1	5	1		1.2	3				
										20	40	1	5								
										10		3	5								
2SC2335Y	500	400	7	40	7	10	400			20	80	0.1	5	1		1.2	3				
										40	80	1	5								
										10		3	5								
2SC3039	500	400	7	50	7	10	400			15		0.8	5	1		1.5	4	80	20		800
										8		4	5								
2SD1163	300	120		40	7	5000	300			25		5	5	2		1.2	5				
2SD1163A	350	150		40	7	5000	350			25		5	5	1		1.2	5				
2SD288	80	55	5	25	3	50	50			40	240	0.5	5	1			1				
2SD288O	80	55	5	25	3	50	50			70	140	0.5	5	1			1				
2SD288R	80	55	5	25	3	50	50			40	80	0.5	5	1			1				
2SD288Y	80	55	5	25	3	50	50	120	240	0.5	5	1	1								
2SD362	150	70	8	40	5	20	100			20	140	5	5	1		1.5	5				
2SD880	60	60	7	30	3	100	60			60	300	0.5	5	1			3	70	3		500
2SD880GR	60	60	7	30	3	100	60			150	300	0.5	5	1			3	70	3		500
2SD880O	60	60	7	30	3	100	60			60	120	0.5	5	1			3	70	3		500
2SD880Y	60	60	7	30	3	100	60			100	200	0.5	5	1			3	70	3		500
BD239	55	45	5	30	2			200	45	40		0.2	4	0.7			1		3		200
										15		1	4								
BD239A	70	60	5	30	2			200	60	40		0.2	4	0.7			1		3		200
										15		1	4								
BD239B	90	80	5	30	2			200	80	40		0.2	4	0.7			1		3		200
										15		1	4								
BD239C	115	100	5	30	2			200	100	40		0.2	4	0.7			1		3		200
										15		1	4								
BD241	## 55	45	5	40	3			200	45	25		1	4	1.2			3		3		500
										10		3	4								
BD241A	## 70	60	5	40	3			200	60	25		1	4	1.2			3		3		500
										10		3	4								
BD241B	## 90	80	5	40	3			200	80	25		1	4	1.2			3		3		500
										10		3	4								
BD241C	## 115	100	5	40	3			200	100	25		1	4	1.2			3		3		500
										10		3	4								
BD243	45	45	5	65	6			400	45	30		0.3	4	1.5			6		3		500
										15		3	4								
BD243A	60	60	5	65	6			400	60	30		0.3	4	1.5			6		3		500
										15		3	4								

NOTE : V_{CES}

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