

2N903-2N991

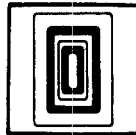
TYPE	MATERIAL	POLARITY	REPLACE- MENT	PAGE NUMBER	USE	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								
						P _D @ 25°C	Ref Point	T _J °C	V _{CB} (volts)	V _{CE-} (volts)	Subscript	h _{FE} @ I _C		V _{CE(SAT)} @ I _C		h _{FE}	Subscript	f _T	Subscript	
						(min)	(max)	Units	Units	Units	Units	Units	Units	Units	Units					
2N903	G	N			AFA	150M	A	175	45	30	O			1.0	5.0M	18	E	2.0M	T	
2N904	G	N			AFA	150M	A	175	45	30	O			1.0	5.0M	18	E	8.0M	T	
2N905	G	N			AFA	150M	A	175	45	30	O			1.0	5.0M	36	E	2.0M	T	
2N906	G	N			AFA	150M	A	175	45	30	O			1.0	5.0M	76	E	2.0M	T	
2N907	S	N			RFA	0.15W	A	175	45	30	O	20	55	10M		19	E	12M	T	
2N908	S	N			RFA	0.15W	A	175	45	30	O	45	150	10M		39	E	25M	T	
2N909	S	N	2N2222	8-108	RFA	400M	A	175	60	30	R	110	350	50M	0.5	40	E	50M	T	
2N910	S	N			AFA	500M	A	200	100	80	R	75		10M	0.4	76	E	60M	T	
2N911	S	N			AFA	500M	A	200	100	80	R	35		10M	0.4	36	E	50M	T	
2N912	S	N			AFA	500M	A	200	100	80	R	15		10M	0.4	18	E	40M	T	
2N914	S	N		8-67	HSS	360M	A	200	40	20	R	30	120	10M	0.7		E	300M	T	
2N914A	S	N			HSS	360M	A	200	40	20	R	30	120	10M	0.4		E	300M	T	
2N915	S	N		8-69	RFA	360M	A	200	70	50	O	50	200	10M	1.0	50	E	250M	T	
2N916	S	N		8-71	RFA	360M	A	200	45	25	O	50	200	10M	0.5	50	E	300M	T	
2N916A	S	N			RFA	360M	A	200	45	25	O	50	200	10M	0.5	50	E	300M	T	
2N917	S	N			RFA	200M	A	200	30	15	O	20	200	3.0M	0.5		E	500M	T	
2N917A	S	N			RFA	200M	A	200	30	15	O	20	200	3.0M	0.4		E	600M	T	
2N918	S	N		9-15	RFA	200M	A	200	30	15	O	20		3.0M	0.4		E	600M	T	
2N919	S	N	2N834	8-54	HSS	0.36W	A	200	25	15	O	20	60	10M	0.2		E	200M	T	
2N920	S	N	2N834	8-54	HSS	0.36W	A	200	25	15	O	40	120	10M	0.2		E	200M	T	
2N921	S	N	2N834	8-54	HSS	0.36W	A	200	50	20	O	20	60	10M	0.3		E	200M	T	
2N922	S	N	2N834	8-54	HSS	0.36W	A	200	50	20	O	40	120	10M	0.3		E	200M	T	
2N923	S	P			AFA	0.25W	A	200	40	25	O			0.5	5.0M		E	0.8M	B	
2N924	S	P			AFA	0.25W	A	200	40	25	O			0.5	5.0M		E	0.8M	B	
2N925	S	P			AFA	0.25W	A	200	50	40	O			0.5	5.0M	10	E	0.8M	B	
2N926	S	P			AFA	0.25W	A	200	50	40	O			0.5	5.0M	20	E	0.8M	B	
2N927	S	P			AFA	0.25W	A	200	70	60	O			0.5	5.0M	8.0	E	0.8M	B	
2N928	S	P			AFA	0.25W	A	200	70	60	O			0.5	5.0M	18	E	0.8M	B	
2N929	S	N		8-72	AFA	600M	C	175	45	45	O			1.0	10M	150	E	1.0M	E	
2N929A	S	N			AFA	0.5W	A	200	60	45	O	40	120	10M	0.5	60	E	45M	T	
2N930	S	N		8-72	AFA	600M	C	175	45	45	O	100	300	10M	1.0	150	E	1.0M	E	
2N930A	S	N			AFA	0.5W	A	200	60	45	O	100	300	10M	0.5	150	E	45M	T	
2N934	G	P	2N965	8-74	HSS	150M	A	85	13	12	O			0.3	40M		E	35M	T	
2N935	S	P			AFA	0.25W	A	160	50	40	O	9.0	22	0.3	5.0M		E			
2N936	S	P			AFA	0.25W	A	160	50	35	O	18	44	0.5	5.0M		E			
2N937	S	P			AFA	0.25W	A	160	50	30	O	36	88	0.6	5.0M		E			
2N938	S	P			AFA	0.25W	A	175	40	35	O			0.3	5.0M	9.0	E	1.0M	B	
2N939	S	P			AFA	0.25W	A	175	40	35	O			0.3	5.0M	18	E	2.0M	B	
2N940	S	P			AFA	0.25W	A	175	40	35	O			0.3	5.0M	36	E	2.0M	B	
2N941	S	P			CHP	0.25W	A	175	25	8	U	10		1.0M		25	E	10M	T	
2N942	S	P			CHP	0.25W	A	175	25	8	U	10		1.0M		25	E	10M	T	
2N943	S	P			CHP	0.25W	A	175	40	18	O	10		0.003		25	E	1.0M	B	
2N944	S	P			CHP	0.25W	A	175	40	18	O	10		0.004		25	E	1.0M	B	
2N945	S	P			CHP	0.25W	A	175	50	50	O	10		0.005		25	E	1.0M	B	
2N946	S	P			CHP	0.25W	A	175	80	80	O	10		0.005		25	E	1.0M	B	
2N947	S	N	2N834	8-54	MSA	360M	A	150	20	15	R	20		10M	0.4		E	200M	T	
2N948																				
chru																				
Thyristors, see Table on Page 1-154																				
2N951	G	N			HSS	150M	A	100	12	8.0	O	30		30M	0.5	30M				
2N955	G	N			HSS	150M	A	100	12	8.0	O	30		30M	0.3	30M				
2N955A	G	N	2N2222	8-108	RFA	500M	A	200	75	50	R	100	300	150M	1.5	150M	50	E	70M	T
2N956	G	N	2N2501	8-148	RFA	250M	A	150	40	20	O	45		10M	1.5	10M			200M	T
2N957	G	N			HSS	0.25W	C	150	25	15	O	20		10M	0.2	10M			200M	T
2N958	S	N			HSS	0.25W	C	150	25	15	O	40		10M	0.2	10M			200M	T
2N959	S	N			HSS	150M	A	100	15	15	S	20		10M	0.2	10M			300M	T
2N960	G	P		8-74	HSS	150M	A	100	12	12	S	20		10M	0.2	10M			300M	T
2N961	G	P		8-74	HSS	150M	A	100	12	12	S	20		10M	0.2	10M			300M	T
2N962	G	P		8-74	HSS	150M	A	100	12	12	S	20		10M	0.2	10M			300M	T
2N963	G	P		8-76	HSS	150M	A	100	12	12	S	20		10M	0.2	10M			250M	T
2N964	G	P		8-74	HSS	150M	A	100	15	15	S	40		10M	0.18	10M			300M	T
2N964A	G	P		8-74	HSS	150M	A	100	15	15	S	40		10M	0.18	10M			300M	T
2N965	G	P		8-74	HSS	150M	A	100	12	12	S	40		10M	0.18	10M			300M	T
2N966	G	P		8-74	HSS	150M	A	100	12	12	S	40		10M	0.18	10M			300M	T
2N967	G	P		8-76	HSS	150M	A	100	12	12	S	40		10M	0.2	10M			250M	T
2N968	G	P		8-85	HSS	150M	A	100	15	15	S	17		10M	0.25	10M			300M	T
2N969	G	P		8-85	HSS	150M	A	100	12	12	S	17		10M	0.25	10M			300M	T
2N970	G	P		8-85	HSS	150M	A	100	12	12	S	17		10M	0.25	10M			300M	T
2N971	G	P		8-85	HSS	150M	A	100	7.0	7.0	S	17		10M	0.25	10M			300M	T
2N972	G	P		8-85	HSS	150M	A	100	15	15	S	40		10M	0.25	10M			300M	T
2N973	G	P		8-85	HSS	150M	A	100	12	12	S	40		10M	0.25	10M			300M	T
2N974	G	P		8-85	HSS	150M	A	100	12	12	S	40		10M	0.25	10M			300M	T
2N975	G	P		8-85	HSS	150M	A	100	7.0	7.0	S	40		10M	0.25	10M			300M	T
2N976	G	P	2N964	8-74	HSS	100M	A	100	15	10	O	30		20M	0.17	20M			24M	T
2N977	G	P	2N964	8-74	HSS	150M	A	100	15	10	O	50		40M	0.2	40M			40M	T
2N978	S	N	2N2837	8-161	RFA	330M	A	150	30	20	O	15	60	150M	1.5	150M			40M	T
2N979	G	P			HSS	60M	A	100	20	15	O	30		10M	0.25	10M			100M	T
2N980	G	P			HSS	60M	A	100	20	12	O	30		10M	0.25	10M			100M	T
2N981	S	N			AFA	0.5W	A	200	80	80	O			3.0	10M			50M	B	
2N982	G	P			HSS	60M	A	100	20	15	O	50		10M	0.125	10M				
2N983	G	P			HSS	60M	A	100	15	15	O	40		10M	0.15	10M				
2N984	G	P			HSS	60M	A	100	15	10	O	50		10M	0.18	10M				
2N985	G	P		8-88	HSS	150M	A	100	15	7.0	O	40		10M	0.15	10M			300M	T
2N986	S	N			SPP	500M	A	200	100	80	R									
2N987	G	P			RFA	0.1W	A	100	40	40	O	40	250	1.0M		40	E			
2N988	S	N	2N2221	8-108	RFA	0.3W	A	175	20	10	O	20	120	10M	0.5	10M			300M	T
2N989	S	N	2N2221	8-108	RFA	0.3W	A	175	20	10	O	20	120	10M	0.5	10M			300M	T
2N990	G	P			RFC	67M	A	75	20	20</										

GENERAL PURPOSE SWITCHING AND AMPLIFIER TRANSISTORS (SILICON)

Current versus Voltage

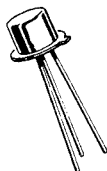
BV _{CEO} Min Volts	OPTIMUM COLLECTOR CURRENT									
	0 to 10 mA		10 mA to 100 mA		100 mA to 500 mA		500 mA to 1.0 A		1.0 A to 3.0 A	
	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
15 ↓ 29	2N916 2N2330 2N2331		2N916 2N1983 2N1984		2N696 2N697 2N718 2N1420 2N2195	2N1991				
30 ↓ 39			2N2218 2N2219 2N2221 2N2222	2N3133 2N3134 2N3135 2N3136	2N2218 2N2219 2N2221 2N2222 2N3299 2N3300 2N3301 2N3302	2N2800 2N2801 2N2837 2N2838 2N3133 2N3134 2N3135 2N3136				
49 ↓ 59	2N758 2N795 2N760 2N915 2N929 2N930 2N3946 2N3947	2N3250 2N3251 MM4048	2N2218A 2N2219A 2N2221A 2N2222A 2N2224 2N3946 2N3947	2N3250 2N3251	2N2194 2N2218A 2N2219A 2N2221A 2N2222A	2N2904 2N2905 2N2906 2N2907 2N3485 2N3486 2N4890	2N3192 2N3193	2N3244 2N3245	2N3506 2N3507	
60 ↓ 79	2N758A 2N759A 2N760A 2N929A 2N930A MM2483 MM2484	2N3798 2N3799 2N3250A 2N3251A	2N910 2N911 2N1990	2N3250A 2N3251A	2N656 2N699	2N2904A 2N2905A 2N2906A 2N2907A 2N3485A 2N3486A				
80 ↓ 99	2N739 2N740	2N3494 2N3496	2N720A 2N1893 2N2405	2N3494 2N3496	2N720A 2N3019 2N3020		2N3019 2N3020			
100 ↓ 149	2N4924	2N3495 2N3497 2N4928	2N3498 2N3499 2N4924	2N3495 2N3497 2N3634 2N3635 2N4928	2N3498 2N3499 2N4924	2N3634 2N3635				
150 ↓ 249	2N3114 2N4925 2N4926	2N4929 2N4930	2N3500 2N3501 2N4925 2N4926	2N3635 2N3637 2N4929 2N4930	2N3500 2N3501 2N4925	2N3636 2N3637				
250 UP	2N3742 2N4927	2N3743 2N4931	2N3742 2N4927	2N3743 2N4931						

2N915 (SILICON)



$V_{CEO} = 50 \text{ V}$
 $h_{FE} = 50$

CASE 22
(TO-18)



NPN silicon annular transistor for high-frequency amplifier, oscillator and switching applications.

Collector connected to case

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Base Voltage	V_{CB}	70	Vdc
Collector-Emitter Voltage	V_{CEO}	50	Vdc
Emitter-Base Voltage	V_{EB}	5	Vdc
Total Device Dissipation @ 25°C Case Temperature Derating Factor Above 25°C	P_D	1.2 6.9	W mW/°C
Total Device Dissipation @ 25°C Ambient Temperature Derating Factor Above 25°C	P_D	.36 2.06	W mW/°C
Junction Temperature, Operating	T_J	+200	°C
Storage Temperature Range	T_{stg}	-65 to + 200	°C

2N915 (continued)

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Collector Cutoff Current $I_E = 0 \quad V_{CB} = 60V$	I_{CBO}		10	nA
Collector Cutoff Current @ 150°C $I_E = 0 \quad V_{CB} = 60V$	I_{CBO}		30	μA
Collector Breakdown Voltage $I_C = 100 \mu A \quad I_E = 0$	BV_{CBO}	70		Volts
Collector to Emitter Sustaining Voltage $I_C = 10mA \quad I_B = 0$	$*V_{CEO}$	50		Volts
Emitter Breakdown Voltage $I_C = 0 \quad I_E = 100 \mu A$	BV_{EBO}	5.0		Volts
Base Saturation Voltage $I_C = 10mA \quad I_B = 1.0mA$	$V_{BE(sat)}$		0.9	Volts
Collector Saturation Voltage $I_C = 10mA \quad I_B = 1.0mA$	$V_{CE(sat)}$		1.0	Volts
DC Pulse Current Gain $I_C = 10mA \quad V_{CE} = 5.0V$	h_{FE}	50	200	
Output Capacitance $I_E = 0 \quad V_{CB} = 10V$	C_{ob}		3.5	pF
Emitter Transition Capacitance $I_C = 0 \quad V_{EB} = 0.5V$	C_{TE}		10	pF
High Frequency Current Gain $f = 100 \text{ MHz}$ $I_C = 10mA \quad V_{CE} = 15V$	h_{fe}	2.5		
Small Signal Current Gain $f = 1 \text{ kHz}$ $I_C = 1.0mA \quad V_{CE} = 5.0V$ $I_C = 5.0mA \quad V_{CE} = 5.0V$	h_{fe}	40	200	
		50	250	
Input Resistance $f = 1 \text{ kHz}$ $I_C = 1.0mA \quad V_{CE} = 5.0V$ $I_C = 5.0mA \quad V_{CE} = 5.0V$	h_{ie}		6000	ohms
			2000	ohms
Output Conductance $f = 1 \text{ kHz}$ $I_C = 1.0mA \quad V_{CE} = 5.0V$ $I_C = 5.0mA \quad V_{CE} = 5.0V$	h_{oe}		75	μmho
			125	μmho

*pw = 300 μs
duty cycle $\leq 1\%$