

# SEMICONDUCTOR DIODES

Summary of characteristics of silicon and germanium crystal diodes, with dimensions and terminal data. Since some ratings are affected by pulse shape, pulse duration and duty cycle, manufacturers should be consulted when working near rated limits in pulse circuits

Table I—Characteristics of Silicon Diodes

Type No.	Design Freq (mc)	Total Energy (ergs)	Peak Pulsed Power (watts)	Max Conversion Loss (db)	Min Fig. of Merit	Max Output Noise Ratio	I-F Impedance (ohms)	Mfr	Shape	Remarks
1N21	3,000	0.3		8.5		4.0	200-800	Sylv	1	First detector
1N21A	3,000	0.3		7.5		3.0	200-800	Sylv	1	First detector
1N21B	3,000	2.0		6.5		2.0	200-800	Sylv	1	First detector
1N21C	3,000	2.0		5.5		1.5	200-800	Sylv	1	First detector
1N22	9,000	0.3					200-800	Sylv	1	Instruments, probes
1N23	10,000	0.3		10.0		3.0	150-600	Sylv	1	First detector
1N23A	10,000	1.0		8.0		2.7	150-600	Sylv	1	First detector
1N23B	10,000	0.3		6.5		2.7	150-600	Sylv	1	First detector
1N25	1,000		6.5	8.0		2.5	100-400	Sylv	1	First detector
1N26	25,000	0.1		8.5		2.5	300-600	Sylv	2	First detector
1N28	3,000	5.0		7.0		2.0	250	WE	1	Mixer, high burnout
1N31	10,000		0.02		55			Sylv	2	High level video detector: 500 cps-5 mc; Z=6,000-23,000 ohms for 1N31, 5,000-20,000 for 1N32. Use 1N31 instead of 1N30.
1N32	3,000		0.36		100			Sylv	1	

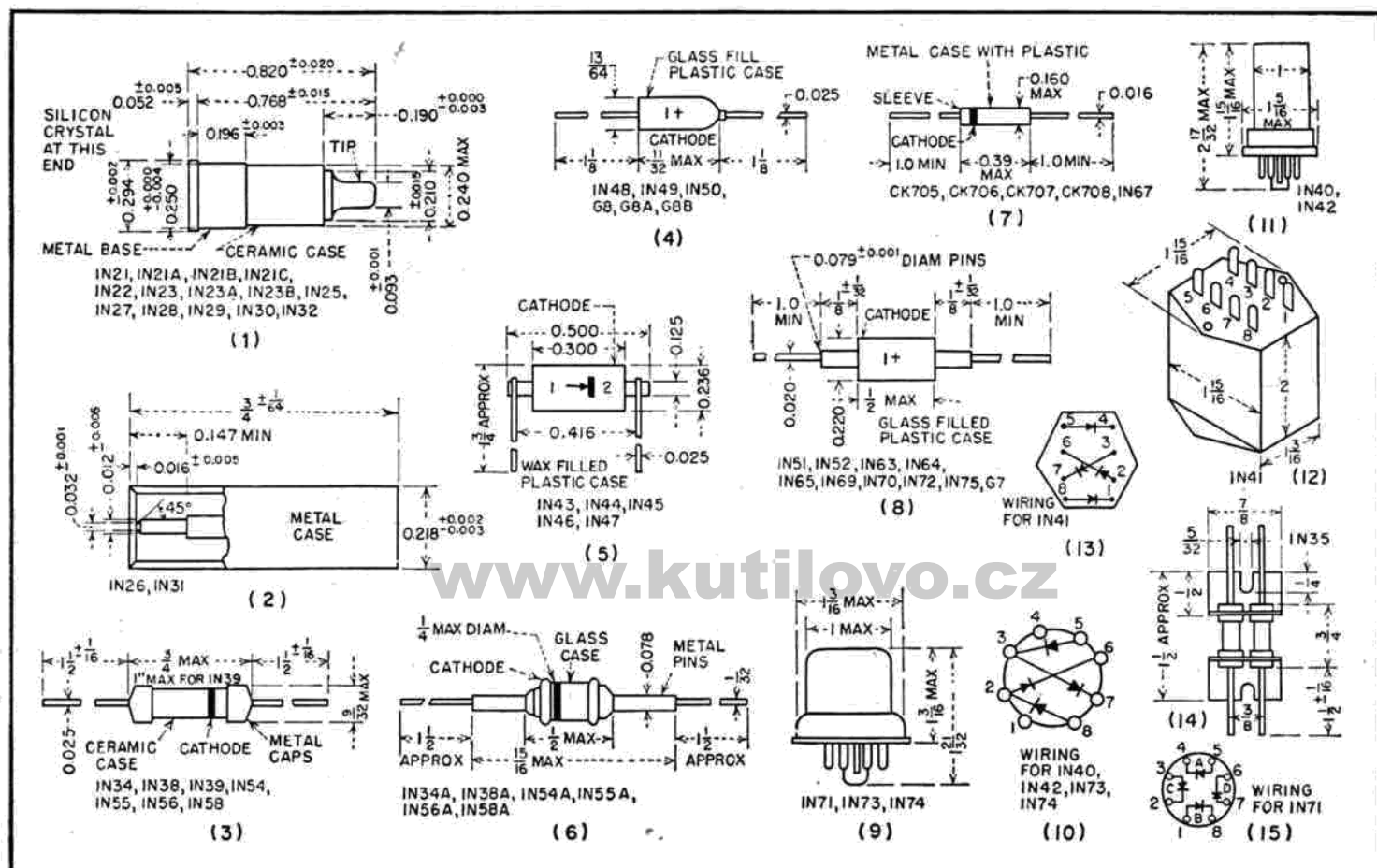


Table II—Characteristics of Germanium Diodes

Type No.	Max Reverse Working Voltage (volts)	Min Reverse Volts for Zero Dynamic Res	Min Forward Current at +1v (ma)	Average Anode Current (ma)	Max Recurrent Peak Anode I (ma)	Max Forward Surge Current (ma)	Max Reverse Current ( $\mu$ a)	Key		Remarks
								Sylv—Sylvania WE—Western Electric GE—General Electric	Rayth—Raytheon Obs—Obsolete	
								Mfr	Shape	
1N34	60	75	5.0	50	150	500	50 at -10v 800 at -50v	Sylv	3	General-purpose diode
1N34A	60	75	5.0	50	150	500	30 at -10v 500 at -50v	Sylv	6	Glass-sealed general-purpose diode
1N35	50	75	7.5	22.5	60	100	10 at -10v	Sylv	14	Matched duo-diode. Ratings are for one diode. Currents match within 10% at forward +1v
1N38	100	120	3.0	50	150	500	6 at -3v 625 at -100v	Sylv	3	100-volt diode
1N38A	100	120	4.0	50	150	500	5 at -3v 500 at -100v	Sylv	6	100-volt diode
1N39	200	225	1.5	50	150	500	200 at -100v 800 at -200v	Sylv	3	200-volt diode
1N40	25	60	12.75 at +1.5v	22.5	60	100	40 at -10v	Sylv	10, 11	Plug-in varistors having four diodes whose resistances are balanced within 2.5% in forward direction at 1.5 volts. Forward resistances of each pair are matched within 3 ohms. Ratings are for single diodes
1N41	25	60	12.75 at +1.5v	22.5	60	100	40 at -10v	Sylv	12, 13	
1N42	50	120	12.75 at +1.5v	22.5	60	100	6 at -3v 625 at -100v	Sylv	10, 11	
1N43		60	5	40	125	500	20 at -5v 850 at -50v	WE	5	
1N44		115	3	40	100	400	1,000 at -50v	WE	5	WE 400B
1N45		75	3	40	100	400	410 at -50v	WE	5	WE 400C
1N46		60	3	40	125	500	1,500 at -50v	WE	5	WE 400D
1N47		115	3	30	90	350	4 at -3v 410 at -50v	WE	5	Tested for min rect eff of 35% at 100 mc, 2 v rms input and 5,000-ohm, 20 $\mu$ f load
1N48	85		4	50	150	500	833 at -50v	GE	4	
1N49			4		50		200 at -20v	Obs	4	
1N50			4	25	100	300	80 at -20v	Obs	4	
1N51	50		2.5	50	150	500	1,667 at -50v	GE	8	Utility grade
1N52	85		4.0	50	150	500	150 at -50v	GE	8	High grade
1N54	35	75	5.0	50	150	500	10 at -10v	Sylv	3	High-back-resistance diode
1N54A	50	75	5.0	50	150	500	7 at -10v 100 at -50v	Sylv	6	High-back-resistance diode
1N55	150	170	3.0	50	150	500	300 at -100v 800 at -150v	Sylv	3	150-volt diode
1N55A	150	170	4.0	50	150	500	500 at -150v	Sylv	6	150-volt diode
1N56	40	50	15.0	60	200	1,000	300 at -30v	Sylv	3	High-conductivity diode
1N56A	40	50	15.0	60	200	1,000	300 at -30v	Sylv	6	High-conductivity diode
1N58	100	120	4.0	50	150	500	800 at -100v	Sylv	3	100-volt diode
1N58A	100	120	5.0	50	150	500	600 at -100v	Sylv	6	Glass-sealed 100-volt diode
1N60	25	30		40	150	500	30 at -1.5v	Sylv	3	Video detector diode
1N63	125		4.0	50	150	500	50 at -50v	GE	8	High back resistance and voltage
1N64	20							GE	8	Second detector diode
1N65	85		2.5	50		150		GE	8	D-C restorer diode, 1-sec surge current = 150 ma
1N67	80	100	4	35	100	500	5 at -5v 50 at -50v	Rayth	7	50-volt d-c restorer
1N69	60		5	40	125	400	0.05 at -10v 0.85 at -50v	GE	8	Max temp 70 C. Min rect curr at 40v 60 cps with 500-ohm load is 30 ma. Min rect eff of 1N70 is 35% at 2v rms, 100 mc, 5,000-ohm load and 20 $\mu$ f
1N70	100		3	30	90	350	0.01 at -10v 0.41 at -50v	GE	8	
1N71	40	50	15	60	200	1,000	300 at -30v	Sylv	9, 15	Low-imp varistor matched to pass currents equal within 1 ma at forward +1v. Ratings are for single diode
1N72	5			25	75			GE	8	UHF diode. Noise figure at 500 mc is 14 to 19 db
1N73		75	15 at 1.2-1.7v	22.5	60	100	0.05 at -10v	GE	9, 10	Plug-in varistor with four closely matched diodes
1N74		75	15 at 1.3-1.8v	22.5	60	100	0.05 at -10v	GE	9, 10	Plug-in varistor like 1N73 but wider matching tolerances
1N75	125		2.5	50	150	500	0.05 at -10v	GE	8	High back resistance and voltage. Max shunt C is 0.8 $\mu$ f
CK705	60	70	5	50	150	500	50 at -10v 800 at -50v	Rayth	7	General-purpose
CK706	40	50		35	125	300	200 at -10v	Rayth	7	Video detector. Rect eff approx. 60% at 54 mc
CK707	80	100	3.5	35	100	500	8 at -5v 100 at -50v	Rayth	7	50-volt d-c restorer
CK708	100	120	3	35	100	500	625 at -100v	Rayth	7	100-volt d-c restorer
G7								GE	8	UHF, design freq 500 mc, max op freq 3,000 mc, noise figure 14-19 db
G8								GE	4	Matched 1N48. Currents match within 10%
G8A								GE	4	Matched 1N52. Currents match within 10%
G8B								GE	4	Matched 1N63. Currents match within 10%