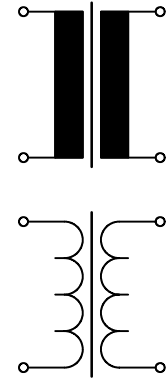
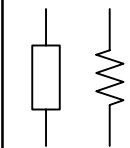


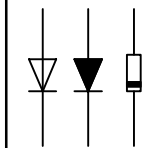
SINGLE-PHASE TRANSFORMER:



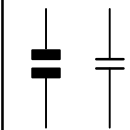
RESISTOR:



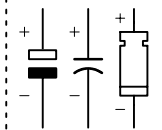
DIODE:



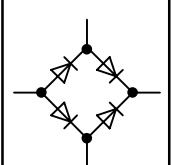
CAPACITOR:



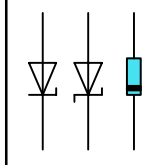
(POLARIZED)



BRIDGE RECTIF.:



Z - DIODE:



1N47xx SERIES

Ptot 1.3 W - Z-DIODE ELECTRICAL CHARACTERISTICS (Tamb = 25°C)

P/N	Vz V	Iz_min mA	Iz_max mA	P/N	Vz V	Iz_min mA	Iz_max mA	P/N	Vz V	Iz_min mA	Iz_max mA
1N4728	3.3	76	276	1N4741	11	23	83	1N4754	39	6.5	23
1N4729	3.6	69	252	1N4742	12	21	76	1N4755	43	6	22
1N4730	3.9	64	234	1N4743	13	19	69	1N4756	47	5.5	19
1N4731	4.3	58	217	1N4744	15	17	61	1N4757	51	5	18
1N4732	4.7	53	193	1N4745	16	15.5	57	1N4758	56	4.5	16
1N4733	5.1	49	178	1N4746	18	14	50	1N4759	62	4	14
1N4734	5.6	45	162	1N4747	20	12.5	45	1N4760	68	3.7	13
1N4735	6.2	41	146	1N4748	22	11.5	41	1N4761	75	3.3	12
1N4736	6.8	37	133	1N4749	24	10.5	38	1N4762	82	3	11
1N4737	7.5	34	121	1N4750	27	9.5	34	1N4763	91	2.8	10
1N4738	8.2	31	110	1N4751	30	8.5	30	1N4764	100	2.5	9
1N4739	9.1	28	100	1N4752	33	7.5	27				
1N4740	10	25	91	1N4753	36	7	25				

C = smoothing capacitor
...approx. 2 µF per I = 1 mA

$$V_{dc} = \text{approx. } V_{ac} \times 1.3$$

$$V_s = V_{dc} \quad I_s = I = I_L + I_z$$

$$R_s > \frac{V_{s_{max}} - V_z}{I_{z_{max}} + I_{L_{max}}}$$

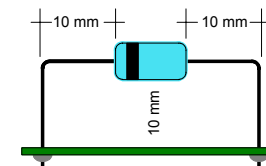
$$R_s < \frac{V_{s_{min}} - V_z}{I_{z_{min}} + I_{L_{max}}}$$

$$P_{R_s} = (V_s - V_z) \times I_s$$

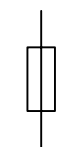
"Z-Diodes are used as voltage reference to regulate the voltage across small circuits"

Further Z-Diode Series are: 1N47xx, BZX55, BZX79, BZX85, TZx, ZPD and more...
...for fully information see OEM datasheets...

Required for cooling if operating close to Iz_max



FUSE:



FOR FULLY COMPONENT SPECS. SEE
MANUFACTURER DATASHEETS

PS	A4	udo@elgers.com	ue-ERT20200905-03	05-SEP-2020
019	A	Z-DIODE REGULATOR BASIC CIRCUIT & CALC.		