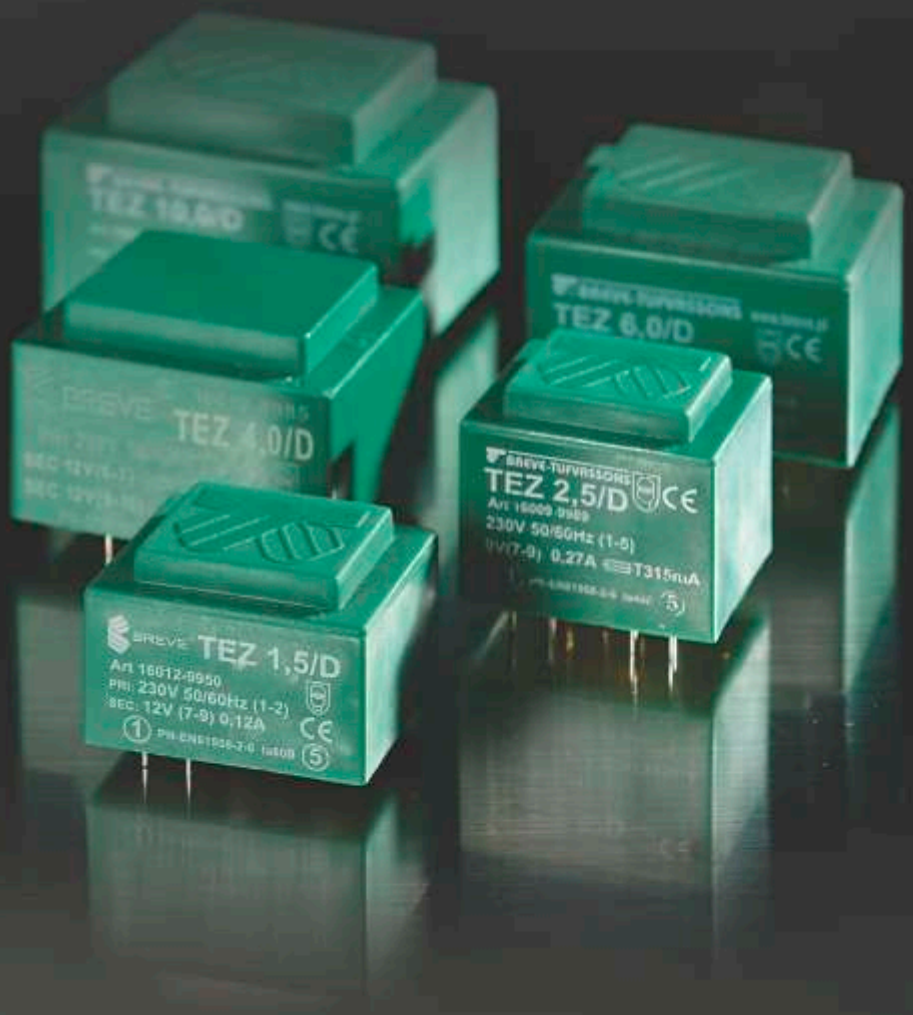
Electronic Components

BREVE®

TEZ

high quality
transformers
for PCBs



BREVE transformers are made in Łódź, under the supervision of experienced technologists. Their quality is appreciated by Polish and foreign companies.

Key features of TEZ transformers by BREVE:

- encased in resin in a vacuum, three-stage process
- polyurethane resin that maintains thermal microplasticity throughout the product's lifetime
- high heat dissipation from the windings to the environment
- three-stage quality control of each transformer-
- short lead times

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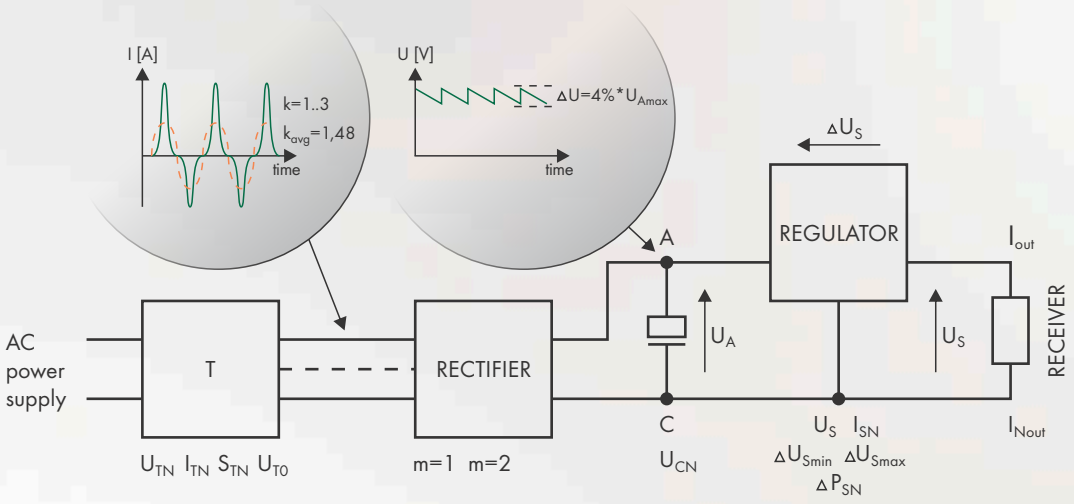
GUIDE

An example of a simplified algorithm to select a transformer for a circuit with a linear regulator:

T - transformer
0 - no-load state
S - regulator
N – nominal value
△ - rise, fall, range
out - output
U - voltage [V]
I - current [A]
S - apparent power [VA]
P - active power [W]



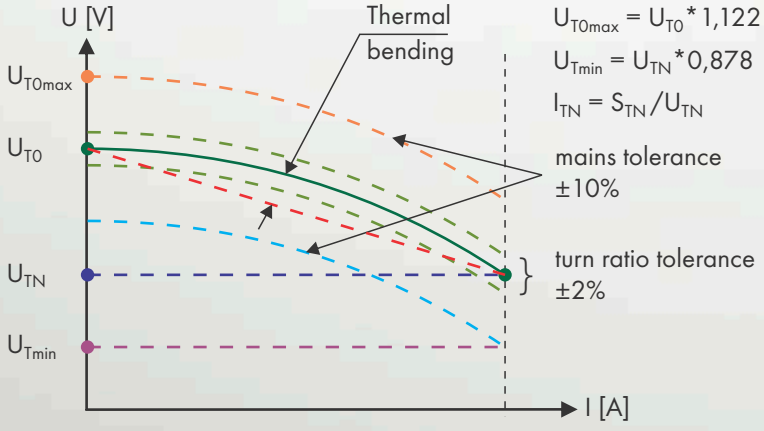
Choosing a low voltage power supply transformer.

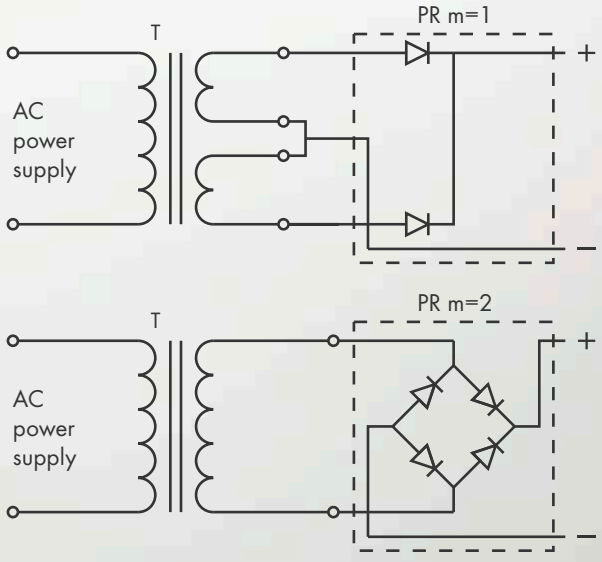
1. Determine U_S, I_{Nout}
2. Select a regulator, read its I_{SN} ($I_{SN} \geq I_{Nout}$)
3. Read its ΔU_{Smin} , ΔP_{SN}
4. Calculate $U_{Amin} = U_S + \Delta U_{Smin}$
5. Calculate $U_{TNmin} = \dfrac{\frac{U_{Amin}}{1,41} + m*0,65}{0,878}$
6. Select U_{TN} voltage from the catalogue ($U_{TN} \geq U_{TNmin}$)
7. Calc. the power of the transformer $S_T = k_{avg}*(U_{TN} - m*0,65)*1,41*I_{Nout}$
8. Select the transformer power from the catalogue $S_{TN} \geq S_T$
9. Determine the U_{T0} voltage (see table) $U_{T0} = U_{TN}*x$ (x from the table for S_{TN})
10. Calculate the U_{Amax} voltage at A $U_{Amax} = (1,122*U_{T0} - m*0,65)*1,41$
11. Check whether the regulator meets the requirements:
    $\Delta U_{Smax} > U_{Amax} - U_S$
    $\Delta P_{SN} > (U_{Amax} - U_S)*I_{Nout}$
12. If it does not meet the requirements, choose a stronger regulator.
13. If it meets the requirements of capacitance C, determine the capacitor voltage.
    $U_{CN} > 1,2*U_{Amax}$ $\quad C[\mu F] \approx \dfrac{10^4}{\Delta U_{Amax}[V]}$
14. Build the circuit and proceed to the actual tests with the specified temperature rise of the windings.

NOTE! Remember that calculations are always an approximation of real values. In the case of an endless algorithm loop, select the most reasonable set of elements and proceed to actual testing.

TYPE	S_{TN}	ta [°C]	x
TEZ 0,5	0,5	60B	1,7
TEZ 0,6	0,6	60B	1,6
TEZ 1,5	1,5	60B	1,6
TEZ 2,0	2,0	60B	1,5
TEZ 2,6	2,5	60B	1,8
TEZ 3,0	3,0	60B	1,7
TEZ 4,0	4,0	60B	1,4
TEZ 6,0	6,0	60B	1,4
TEZ 10,0	10,0	60B	1,3
TEZ 16,0	16,0	60B	1,3
TEZ 20,0	20,0	60B	1.2
TEZ 25,0	25,0	60B	1,2
TEZ 30,0	30,0	60B	1,2

$x = \dfrac{U_{T0}}{U_{TN}}$





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