

V354 - Gedämpfte und erzwungene Schwingung

© muss nicht gemacht werden

5a) $T = 50 \mu s$
 $U = 2 V$

5b) $T = 50 \mu s$; $T = 20 \mu s$
 $U = 2 V$; $U = 0,5 V$
 $R = 2,95 \Omega$; $R = 2,95 \cdot \frac{5 k\Omega}{10}$

5c) Erregerspannung: $U = 1 V$
 $T = 50 \mu s$
 $R = 0$

Messung: $U = 1 V$
 $T = 50 \mu s$
 $R = R_2$

2te-Messung
verändern

Als Alternative Rechteck:

Erreger:

$U = 1 V$
 $T = 50 \mu s$
 $R = 0$

Mess:

$U = 1 V$
 $T = 50 \mu s$
 $R = R_2$

Frequenzabh:

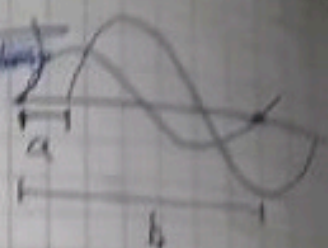
f/kHz	U/V
36,2	4,6
37,0	
35,00	4,4
34,00	4,2
33,00	4,0
32,00	3,9
31,00	3,7
30,00	3,6
29,00	3,4
28,00	3,2

10 μs

f/kHz	U/V
36,0	4,4
37,0	4,3
38,0	4,1
39	4,0
40	3,8
41	3,6
(42)	2,8) ?
42	3,2

5d)

f	(0.5V/D ₁)	(0.5V/D ₂)	2πν/L = 2πs	
	U/V	V/V	a/λ _m	b/λ _m
42.9	1.3		1.6	4.2
42.5	1.35		1.65	4.4
41	1.4		1.7	4.65
41.5	1.45		1.74	4.8
40	1.5		1.8	5.0
40.5	1.55		1.84	5.1
39	1.6		1.9	5.3
39.5	1.65		1.95	5.4
38.1	1.7		2.0	5.5
38.5	1.75		2.05	5.6
37	1.8	1.2	2.1	5.7
37.5	1.85	1.2	2.15	5.8
36	1.9		2.2	5.9
36.5	1.95		2.25	6.0
35	2.0		2.3	6.1
35.5	2.05		2.35	6.2
34	2.1		2.4	6.3
34.5	2.15		2.45	6.4
33	2.2		2.5	6.5
33.5	2.25		2.55	6.6
32	2.3		2.6	6.7
32.5	2.35		2.65	6.8
31	2.4		2.7	6.9
31.5	2.45		2.75	7.0
30	2.5		2.8	7.1
30.5	2.55		2.85	7.2
29	2.6		2.9	7.3
29.5	2.65		2.95	7.4
28	2.7		3.0	7.5
28.5	2.75		3.05	7.6



$$R_1 = (20.3 \pm 0.1) \Omega$$

$$R_2 = (221.6 \pm 0.2) \Omega$$

$$L = (3.5 \pm 0.01) \text{ mH}$$

$$C = (5.00 \pm 0.2) \text{ nF}$$

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