

G(s) = $\frac{1.00}{LCs^2 + Ls + R}$ STANDARD SECOND ORDER TRANSFER FUNCTION. LET THE INPUT SIGNAL BE A UNIT STEP INPUT X(S)=

1/5 IT CAN BE SHOWN THAT THE OUTPUT TIME EQUATION

$$Y(t) = 1 + e^{-\zeta\omega t} (A \sin \omega t + B \cos \omega t) \quad \text{WHERE A AND B ARE -VE.}$$
$$Y(t) = 1 - e^{-\zeta\omega t} (A \sin \omega t + B \cos \omega t) \quad \text{WHERE A AND B ARE +VE.}$$

IN MY CASE I HAVE SHOWN THAT A AND B ARE +VE AND =1.

$$Y(t) = 1 - e^{-\zeta\omega t} (\sin \omega t + \cos \omega t) \quad w = (1/\sqrt{LC}) - (1/2RC)$$

L = 1.00E-04	Damping (ζ) = 1.07E+00	Damping (ζ) = 1.07E-01	Damping (ζ) = 1.00E-04
C = 2.20E-05	Natural Freq Wn = 2.13E+04	Natural Freq Wn = 2.13E+04	Natural Freq Wn = 2.32558E-05
L = 1.00E-04	w = 1.41E+03	T = 2.95E-04	w = 1.00E+02
C = 2.20E-05	w = 7.87E+03		
R = 1.00E+00			

Freq = 43000	D = 0.28	Freq = 43000	D = 0.28
T = 2.32558E-05	t1 = 6.5116E-06	T = 2.32558E-05	t1 = 6.5116E-06
A = 23.5		A = 23.5	

	w = 2.12E+04		w =
t = 0	1.00E+00	t = 0	1.00E+00
t = 1.00E-06	0.998E-01	t = 1.00E-06	0.021317245
t = 2.00E-06	0.995E-01	t = 2.00E-06	0.042624803
t = 3.00E-06	0.993E-01	t = 3.00E-06	0.063912988
t = 4.00E-06	0.991E-01	t = 4.00E-06	0.085172126
t = 5.00E-06	0.989E-01	t = 5.00E-06	0.106392556
t = 6.00E-06	0.988E-01	t = 6.00E-06	0.12754632
t = 7.00E-06	0.984E-01	t = 7.00E-06	0.148678734
t = 8.00E-06	0.982E-01	t = 8.00E-06	0.169725264
t = 9.00E-06	0.980E-01	t = 9.00E-06	0.190694658
t = 1.00E-05	0.978E-01	t = 1.00E-05	0.211577386
t = 1.10E-05	0.975E-01	t = 1.10E-05	0.232363958
t = 1.20E-05	0.973E-01	t = 1.20E-05	0.253044925
t = 1.30E-05	0.971E-01	t = 1.30E-05	0.273610889
t = 1.40E-05	0.969E-01	t = 1.40E-05	0.294052503
t = 1.50E-05	0.966E-01	t = 1.50E-05	0.314360478
t = 1.60E-05	0.964E-01	t = 1.60E-05	0.334525582
t = 1.70E-05	0.962E-01	t = 1.70E-05	0.354538653
t = 1.80E-05	0.960E-01	t = 1.80E-05	0.374395095
t = 1.90E-05	0.958E-01	t = 1.90E-05	0.394072384
t = 2.00E-05	0.956E-01	t = 2.00E-05	0.413575077
t = 3.00E-05	0.94E-01	t = 3.00E-05	0.596847121
t = 5.00E-05	0.893E-01	t = 5.00E-05	0.875245432
t = 7.00E-05	0.845E-01	t = 7.00E-05	0.99692233
t = 9.00E-05	0.802E-01	t = 9.00E-05	0.999976885
t = 0.0001	0.764E-01	t = 0.0001	0.99960471
t = 0.0002	0.415E-01	t = 0.0002	0.998778238
t = 0.0003	0.39E-01	t = 0.0003	0.997497845
t = 0.0004	0.39E-01	t = 0.0004	0.997497845
t = 0.0005	0.39E-01	t = 0.0005	0.997497845
t = 0.0006	0.39E-01	t = 0.0006	0.997497845
t = 0.0007	0.39E-01	t = 0.0007	0.997497845
t = 0.0008	0.39E-01	t = 0.0008	0.997497845
t = 0.0009	0.39E-01	t = 0.0009	0.997497845
t = 0.001	0.39E-01	t = 0.001	0.997497845
t = 0.0011	0.39E-01	t = 0.0011	0.997497845
t = 0.0012	0.39E-01	t = 0.0012	0.997497845
t = 0.0013	0.39E-01	t = 0.0013	0.997497845
t = 0.0014	0.39E-01	t = 0.0014	0.997497845
t = 0.0015	0.39E-01	t = 0.0015	0.997497845
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t = 0.0021	0.39E-01	t = 0.0021	0.997497845
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t = 0.0028	0.39E-01	t = 0.0028	0.997497845
t = 0.0029	0.39E-01	t = 0.0029	0.997497845
t = 0.003	0.39E-01	t = 0.003	0.997497845
t = 0.0031	0.39E-01	t = 0.0031	0.997497845
t = 0.0032	0.39E-01	t = 0.0032	0.997497845
t = 0.0033	0.39E-01	t = 0.0033	0.997497845
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t = 0.0035	0.39E-01	t = 0.0035	0.997497845
t = 0.0036	0.39E-01	t = 0.0036	0.997497845
t = 0.0037	0.39E-01	t = 0.0037	0.997497845
t = 0.0038	0.39E-01	t = 0.0038	0.997497845
t = 0.0039	0.39E-01	t = 0.0039	0.997497845
t = 0.004	0.39E-01	t = 0.004	0.997497845
t = 0.0041	0.39E-01	t = 0.0041	0.997497845
t = 0.0042	0.39E-01	t = 0.0042	0.997497845
t = 0.0043	0.39E-01	t = 0.0043	0.997497845
t = 0.0044	0.39E-01	t = 0.0044	0.997497845
t = 0.0045	0.39E-01	t = 0.0045	0.997497845
t = 0.0046	0.39E-01	t = 0.0046	0.997497845
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t = 0.0049	0.39E-01	t = 0.0049	0.997497845
t = 0.005	0.39E-01	t = 0.005	0.997497845
t = 0.0051	0.39E-01	t = 0.0051	0.997497845
t = 0.0052	0.39E-01	t = 0.0052	0.997497845
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t = 0.0054	0.39E-01	t = 0.0054	0.997497845
t = 0.0055	0.39E-01	t = 0.0055	0.997497845
t = 0.0056	0.39E-01	t = 0.0056	0.997497845
t = 0.0057	0.39E-01	t = 0.0057	0.997497845
t = 0.0058	0.39E-01	t = 0.0058	0.997497845
t = 0.0059	0.39E-01	t = 0.0059	0.997497845
t = 0.006	0.39E-01	t = 0.006	0.997497845
t = 0.0061	0.39E-01	t = 0.0061	0.997497845
t = 0.0062	0.39E-01	t = 0.0062	0.997497845
t = 0.0063	0.39E-01	t = 0.0063	0.997497845
t = 0.0064	0.39E-01	t = 0.0064	0.997497845
t = 0.0065	0.39E-01	t = 0.0065	0.997497845
t = 0.0066	0.39E-01	t = 0.0066	0.997497845
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t = 0.0068	0.39E-01	t = 0.0068	0.997497845
t = 0.0069	0.39E-01	t = 0.0069	0.997497845
t = 0.007	0.39E-01	t = 0.007	0.997497845
t = 0.0071	0.39E-01	t = 0.0071	0.997497845
t = 0.0072	0.39E-01	t = 0.0072	0.997497845
t = 0.0073	0.39E-01	t = 0.0073	0.997497845
t = 0.0074	0.39E-01	t = 0.0074	0.997497845
t = 0.0075	0.39E-01	t = 0.0075	0.997497845
t = 0.0076	0.39E-01	t = 0.0076	0.997497845
t = 0.0077	0.39E-01	t = 0.0077	0.997497845
t = 0.0078	0.39E-01	t = 0.0078	0.997497845
t = 0.0079	0.39E-01	t = 0.0079	0.997497845
t = 0.008	0.39E-01	t = 0.008	0.997497845
t = 0.0081	0.39E-01	t = 0.0081	0.997497845
t = 0.0082	0.39E-01	t = 0.0082	0.997497845
t = 0.0083	0.39E-01	t = 0.0083	0.997497845
t = 0.0084	0.39E-01	t = 0.0084	0.997497845
t = 0.0085	0.39E-01	t = 0.0085	0.997497845
t = 0.0086	0.39E-01	t = 0.0086	0.997497845
t = 0.0087	0.39E-01	t = 0.0087	0.997497845
t = 0.0088	0.39E-01	t = 0.0088	0.997497845
t = 0.0089	0.39E-01	t = 0.0089	0.997497845
t = 0.009	0.39E-01	t = 0.009	0.997497845
t = 0.0091	0.39E-01	t = 0.0091	0.997497845
t = 0.0092	0.39E-01	t = 0.0092	0.997497845
t = 0.0093	0.39E-01	t = 0.0093	0.997497845
t = 0.0094	0.39E-01	t = 0.0094	0.997497845
t = 0.0095	0.39E-01	t = 0.0095	0.997497845
t = 0.0096	0.39E-01	t = 0.0096	0.997497845
t = 0.0097	0.39E-01	t = 0.0097	0.997497845
t = 0.0098	0.39E-01	t = 0.0098	0.997497845
t = 0.0099	0.39E-01	t = 0.0099	0.997497845
t = 0.01	0.39E-01	t = 0.01	0.997497845