Line Filters

Japan
Singapore
Indonesia
Slovakia

Series:**N** **(Type 15N, 18N, 20N)**
Series:**High N** **(Type 17N, 19N, 21N)**
Series:**V** **(Type 290, 450, 650, 850, 21V, 24V)**
Series:**H** **(Type 200, 270, 400, 600)**
Series:**F** **(Type 23F, 25F)**
Series:**M** **(Type 11M, 14M, 16M)**

Line Filters suppressing conductive noise ranging from low to high frequencies generated at power supply circuits of various electronic equipment

Industrial Property: Patents 22 (pending)

Series N, High N


Type 15N
Type 17N


Type 18N
Type 19N


Type 20N
Type 21N

Series V


Type 290


Type 450


Type 650


Type 850


Type 21V


Type 24V

Series H


Type 270


Type 200


Type 400


Type 600

Series F


Type 23F


Type 25F

Series M


Type 11M


Type 14M


Type 16M

■ Features

Series	Types	Features	
N	15N, 18N, 20N	Vertical Structure	● Suitable for high-density automatic insertion
High N	17N, 19N, 21N	Vertical Structure	● High inductance (same size with series N)
V	290, 450, 650, 850, 21V*, 24V*	Vertical Structure	● Excellent attenuation's in high frequency characteristics
H	200, 270, 400, 600	Horizontal Structure	● Decreasing greatly leakage flux
F	23F, 25F	Thin Structure	● 15 mm height max.
M	11M, 14M, 16M	Small Structure	● Small size and lightweight

* Type 21V is developed product of Type 650. Type 24V is Type 850

■ Recommended Applications

● AV equipment, Communication equipment, Household equipment, Lighting equipment, Power supply

■ Explanation of Part Numbers

● N, High N Series

1	2	3	4	5	6	7	8	9	10	11	12
E	L	F	1	5	N	0	0	5	A		
Product code			Type		Series	Design No. (Current)			Option 1	Option 2	Option 3

● V, H Series

1	2	3	4	5	6	7	8	9	10	11	12
E	L	F	1	8	D	2	9	0	A		
Product code			Series			Type (Style, Design No.)				Option 1	Option 2

● F, M Series

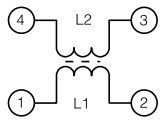
1	2	3	4	5	6	7	8	9	10	11	12
E	L	F	1	6	M	0	2	0	A		
Product code			Type		Series	Design No. (Current)			Option 1	Option 2	Option 3

■ Performance Characteristics

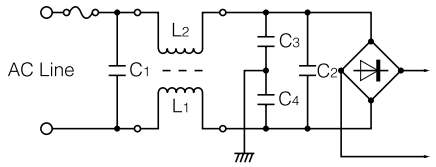
Item \ Series / Type	V Serise				H Serise				F Series		M Series		N Serise			High N Series			Notes
	290	450	650/21V	850/24V	270	200	400	600	23F	25F	11M/14M	16M	15N	18N	20N	17N	19N	21N	
Operating Temperature	–20 °C to 105 °C (Partially 115 °C *)								–20 °C to 115 °C *										
voltage	AC 250 Vrms max.																		
Current	Refer to “Examples”																		
Inductance	Refer to “Examples”																		
Dielectric Withstanding Voltage	AC 2 kV 1min																		
Temperature Rise	45 K max. (21V□□□S 50 k max.)																		Resistance method
Applicable Safety Standards	** Denki Yohin, UL, CSA, IEC																		

* UL, CSA : –20 °C to 100 °C
** Line filter does not acquire, only, the safety standards recognition

■ Connection Shematics

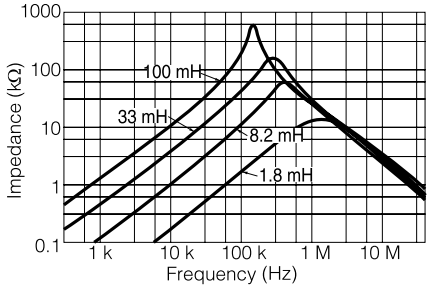


■ Circuit Example

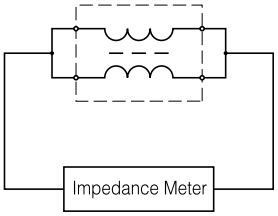


■ Impedance and Attenuation Characteristics (Typical)

● Impedance Characteristics



● Test Circuit Diagram



■ Current-Inductance (min.) Characteristics (Reference only)