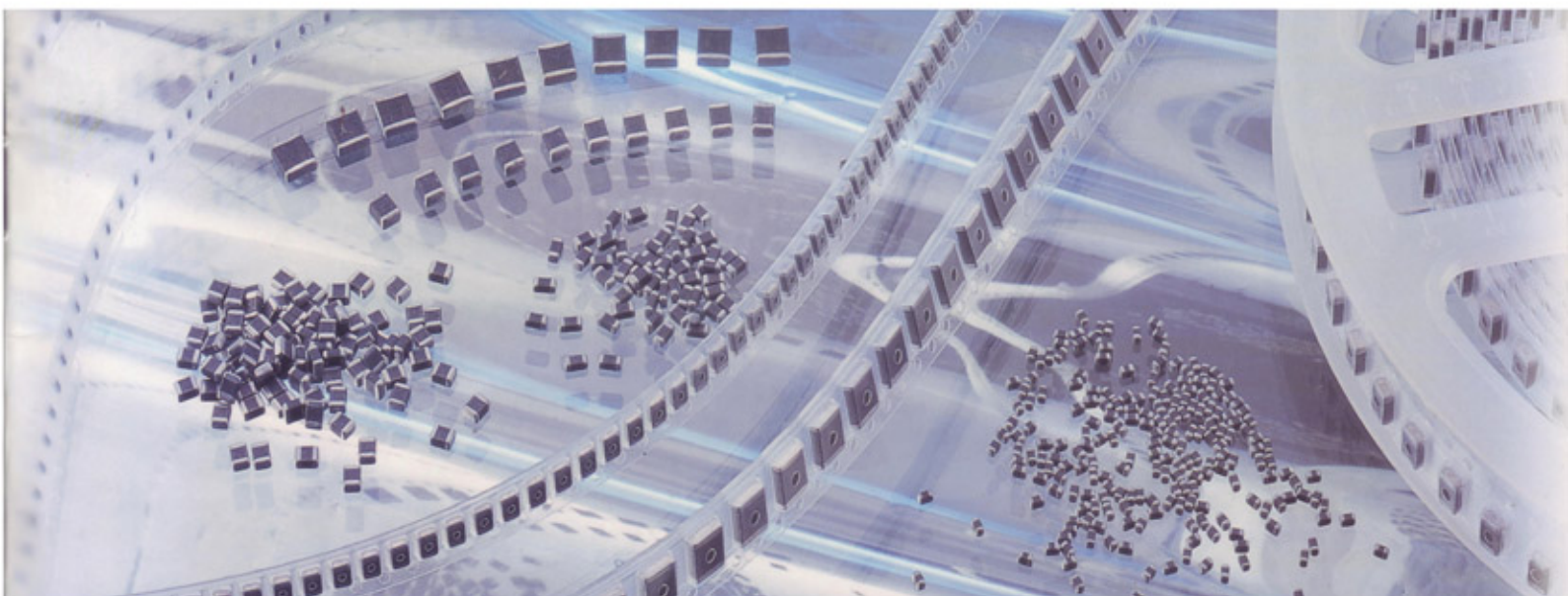


Multilayer Chip Varistor



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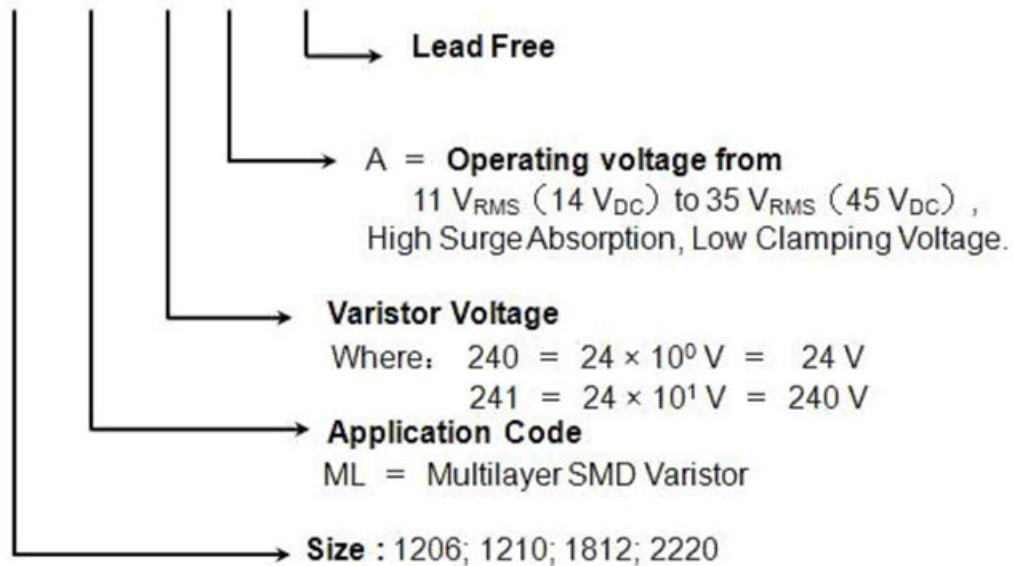
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ML-A

ML-A Series Part Number Identification

SFI 1206 ML 240 A -LF



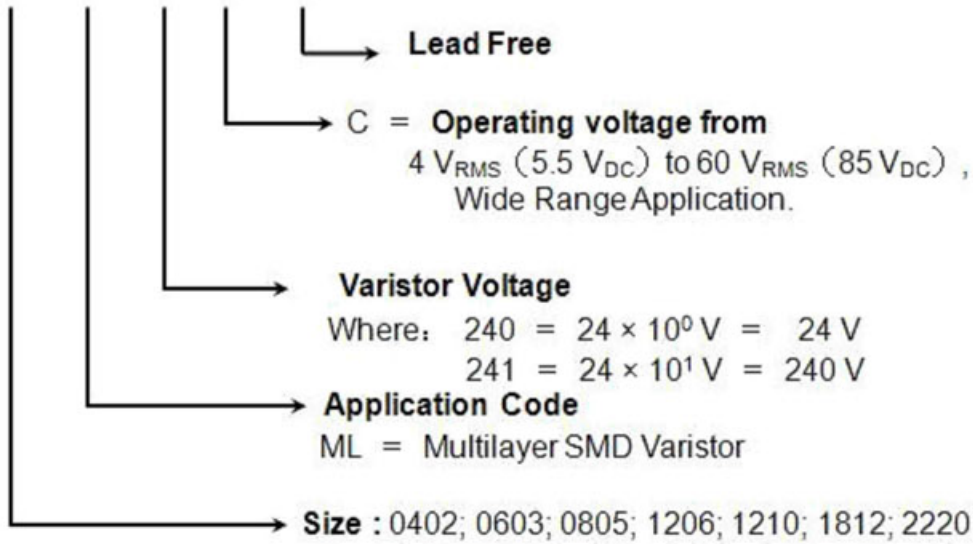
High surge protection varistor A-series

SFI Model Number	Working Voltage (MAX)		Breakdown Voltage	Peak Current (MAX)	Clamping Voltage (MAX)		Energy Absorption (MAX)	Typical Capacitance ※
	AC (RMS)	DC (V)			(A)	(V)		
Unit Condition			1mA(V)	8/20µs (A)			10/1000 µs(J)	1KHz (pF)
SFI1206ML180A-LF	11	14	18(15.3~20.7)	200	1.0	30	0.5	1500
SFI1206ML240A-LF	14	18	24(21.6~27)	200	1.0	39	0.5	1160
SFI1206ML390A-LF	25	30	39(35.1~42.9)	200	1.0	65	1.0	620
SFI1206ML470A-LF	30	38	47(42.3~51.7)	200	1.0	77	1.1	550
SFI1210ML240A-LF	14	18	24(21.6~27)	400	2.5	39	1.4	2380
SFI1210ML270A-LF	17	22	27(24.3~29.8)	400	2.5	44	1.7	2100
SFI1210ML330A-LF	20	26	33(29.7~36.3)	400	2.5	54	1.9	1400
SFI1210ML470A-LF	30	38	47(42.3~51.7)	400	2.5	77	2.0	1000
SFI1812ML240A-LF	14	18	24(21.6~27)	800	5.0	38	2.3	4650
SFI1812ML390A-LF	25	30	39(35.1~42.9)	800	5.0	65	3.7	2950
SFI1812ML470A-LF	30	38	47(42.3~51.7)	800	5.0	77	4.2	2550
SFI1812ML560A-LF	35	45	56(50.4~61.6)	800	5.0	90	4.2	2400
SFI2220ML240A-LF	14	18	24(21.6~27)	1200	10	39	5.8	13600
SFI2220ML270A-LF	17	22	27(24.3~29.8)	1200	10	44	7.2	12000
SFI2220ML390A-LF	25	30	39(35.1~42.9)	1200	10	65	9.6	8900
SFI2220ML470A-LF	30	38	47(42.3~51.7)	1200	10	77	12.0	5700

ML-C

ML-C Series Part Number Identification

SFI 1206 ML 240 C -LF



High surge protection varistor C-series

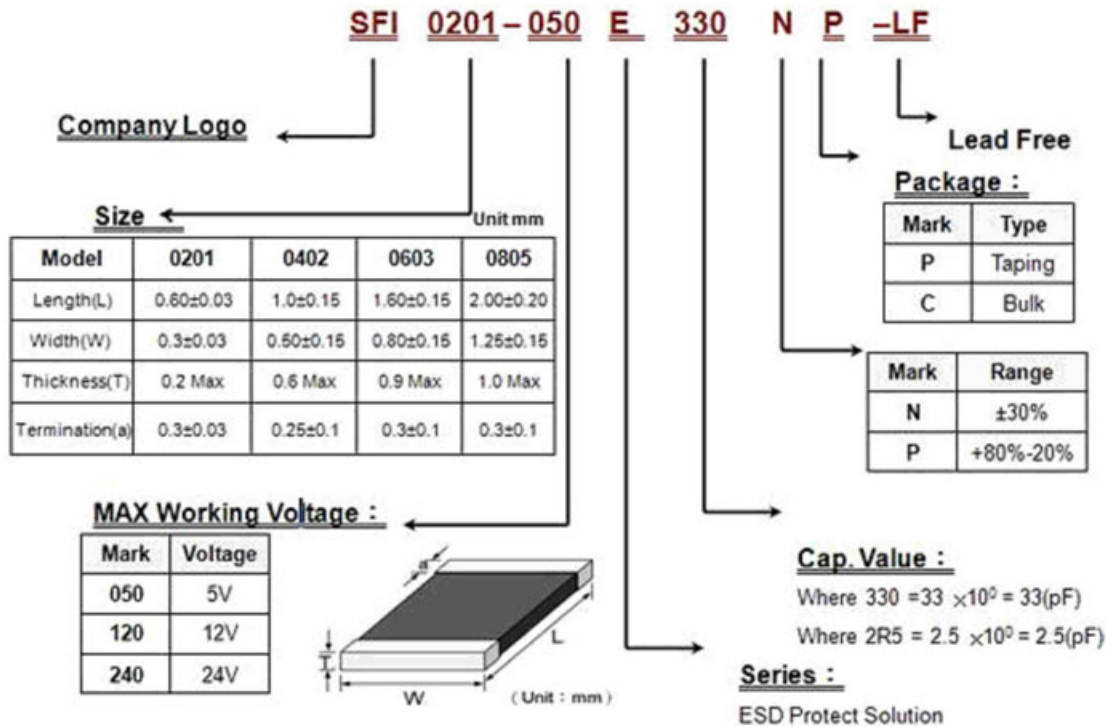
SFI Model Number	Working Voltage (MAX)		Breakdown Voltage	Peak Current (MAX)	Clamping Voltage (MAX)		Energy Absorption (MAX)	Typical Capacitance ※
	AC (VRMS)	DC (V)			(A)	(V)		
SFI0402ML080C-LF	4	5.5	8(8~11)	20	1	20	0.05	295
SFI0402ML120C-LF	6	9	12(10.2~13.8)	20	1	23	0.05	190
SFI0402ML150C-LF	8	11	15(12.75~17.25)	20	1	25	0.05	160
SFI0402ML180C-LF	11	14	18(15.3~20.7)	20	1	30	0.05	135
SFI0402ML240C-LF	14	18	24(21.6~26.4)	20	1	40	0.05	93
SFI0603ML080C-LF	4	5.5	8(8~11)	30	1	20	0.1	800
SFI0603ML120C-LF	6	9	12(10.2~13.8)	30	1	23	0.1	680
SFI0603ML180C-LF	11	14	18(15.3~20.7)	30	1	30	0.1	350
SFI0603ML240C-LF	14	18	24(21.6~26.4)	30	1	39	0.1	270
SFI0603ML270C-LF	17	22	27(24.3~29.7)	30	1	44	0.1	235
SFI0603ML390C-LF	25	30	39(35.1~42.9)	30	1	65	0.1	120
SFI0603ML470C-LF	30	38	47(42.3~51.7)	30	1	77	0.1	100
SFI0805ML080C-LF	4	5.5	8(8~11)	80	1	20	0.1	1600
SFI0805ML120C-LF	6	9	12(10.2~13.8)	80	1	23	0.1	1180
SFI0805ML240C-LF	14	18	24(21.6~26.4)	100	1	39	0.2	550
SFI0805ML270C-LF	17	22	27(24.3~29.7)	100	1	44	0.2	400
SFI0805ML330C-LF	20	26	33(29.7~36.3)	100	1	54	0.3	350
SFI0805ML390C-LF	25	30	39(35.1~42.9)	100	1	65	0.3	310
SFI0805ML470C-LF	30	38	47(42.3~51.7)	100	1	77	0.3	280
SFI0805ML560C-LF	35	45	56(50.4~61.6)	100	1	90	0.3	195

ML-C**High surge protection varistor C-series**

SFI Model Number	Working Voltage (MAX)		Breakdown Voltage	Peak Current (MAX)	Clamping Voltage (MAX)		Energy Absorption (MAX)	Typical Capacitance ※
SFI1206ML080C-LF	4	5.5	8(8~11)	100	1	20	0.2	3200
SFI1206ML180C-LF*	11	14	18(15.3~20.7)	100	1	30	0.3	1150
SFI1206ML240C-LF	14	18	24(21.6~26.4)	100	1	38	0.3	900
SFI1206ML270C-LF	17	22	27(24.3~29.7)	100	1	44	0.4	840
SFI1206ML330C-LF*	20	26	33(29.7~36.6)	100	1	54	0.5	490
SFI1206ML390C-LF	25	30	39(35.1~42.9)	100	1	65	0.6	440
SFI1206ML470C-LF	30	38	47(42.3~51.7)	100	1	77	0.7	400
SFI1206ML560C-LF*	35	45	56(50.4~61.6)	100	1	90	0.8	310
SFI1206ML680C-LF	40	56	68(61.2~74.8)	100	1	110	1.0	280
SFI1206ML820C-LF	50	65	82(73.8~90.2)	100	1	135	0.5	240
SFI1206ML101C-LF	60	85	100(90~110)	100	1	165	0.6	160

ESD

ESD Series Part Number Identification



ESD Solutions Suppressor Series

Part No,	Working Voltage	Clamping Voltage	Leakage Current	Capacitance Volume	ESD Contact	ESD Air
(Unit)	VDC (max)	Vclamp(max)	uA(max)	pF	KV	KV
SFI 0201-050E330NP-LF	5	26	0.1	33	≥8	≥15
SFI 0201-120E120NP-LF	12	50	0.1	12	≥8	≥15
SFIXXX-050E101NP-LF	5	30)	1	100	≥8	≥15
SFIXXX-050E560NP-LF	5	50	1	56	≥8	≥15
SFIXXX-050E330NP-LF	5	50	1	33	≥8	≥15
SFIXXX-050E220NP-LF	5	50	1	22	≥8	≥15
SFIXXX-050E100NP-LF	5	50	1	10	≥8	≥15
SFIXXX-050E050PP-LF	5	50	1	5~9	≥8	≥15
SFIXXX-120E101NP-LF	12	50	1	100	≥8	≥15
SFIXXX-120E560NP-LF	12	40	1	56	≥8	≥15
SFIXXX-120E330NP-LF	12	40	1	33	≥8	≥15

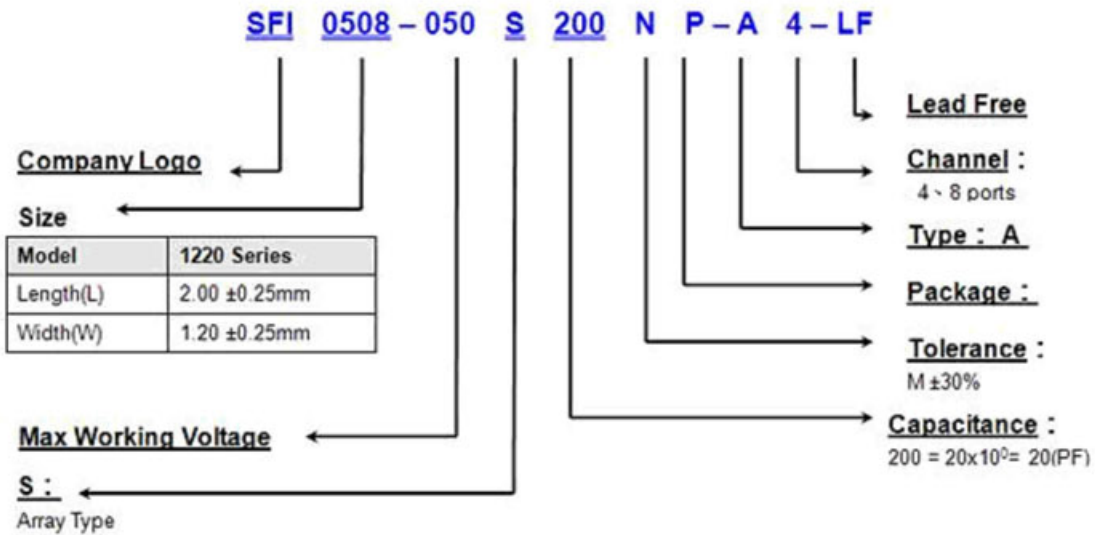
ESD**ESD Solutions Suppressor Series**

Part No,	Working Voltage	Clamping Voltage	Leakage Current	Capacitance Volume	ESD Contact	ESD Air
SFIXXX-120E220NP-LF	12	40	1	22	≥ 8	≥ 15
SFIXXX-120E100NP-LF	12	60	1	10	≥ 8	≥ 15
SFIXXX-120E050PP-LF	12	80	1	4~9	≥ 8	≥ 15
SFIXXX-240E2R5PP-LF	24	200	1	2~4	≥ 8	≥ 15
SFIXXX-240E0R8PP-LF	24	200	1	0.8~1.5	≥ 8	≥ 15

ARRAY

Array Type Solutions Suppressor Series

Part Number Identification



Part Number	Working Voltage	Breakdown Voltage	Clamping Voltage	Leakage Current	Insulation Resistance	Capacitance Value
Symbol	DC	VBDV	V	uA	M ohm	pF
SFI0508-050S100NP-A4-LF	5 (Max)	24	<60	<1.0	>10	10
SFI0508-050S200NP-A4-LF	5 (Max)	24	<50	<1.0	>10	20
SFI0612-180S121NP-A4-LF	18 (Max)	28	<50	<1.0	>10	120
SFI0405-050S470NP-A2-LF	5 (Max)	24	<45	<1.0	>10	47
SFI0405-050S750NP-A2-LF	5 (Max)	24	<45	<1.0	>10	75

Low Capacitance

FEATURES:

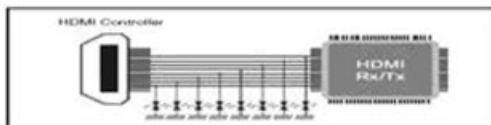
- + Protection against high ESD voltages and currents
- + Compact size for EIA 0402 and 0603
- + Quick response time(<math><0.5\text{ns}</math>)
- + Low capacitance(<math><0.05\text{pF}</math>)
- + Low leakage current
- + Bi-directional
- + ROHS compliance
- + Communication Cable Protection

FIVE WORLDWIDE TOP 1

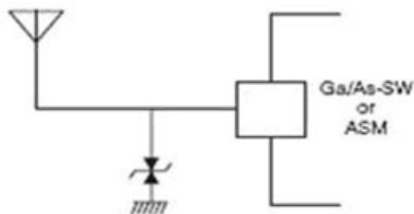
- + ESD pulse withstand is the highest
- + After reliability test, leakage current is the lowest
- + Only offer full size specification maker
- + Trigger and clamping voltage is the lowest
- + Capacity is the highest

Application Field

- + High frequency data transmission interface(HDMI/USB2.0/1394)



- + High frequency receiver system



TYPICAL APPLICATION

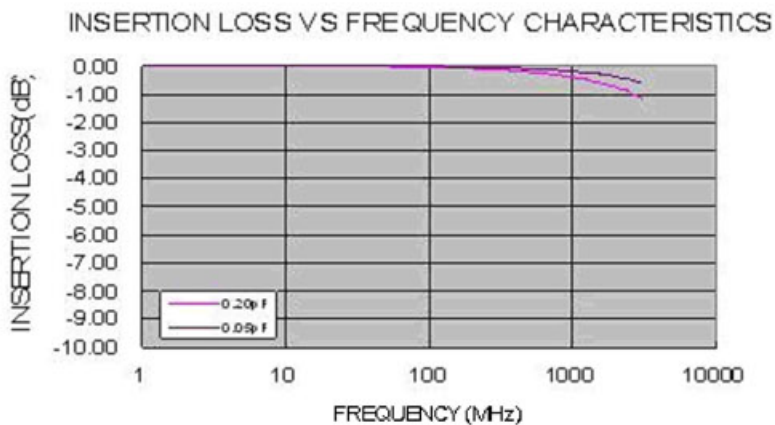
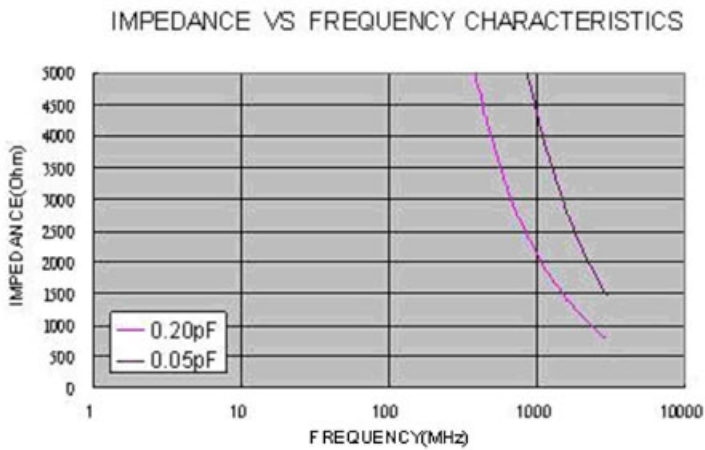
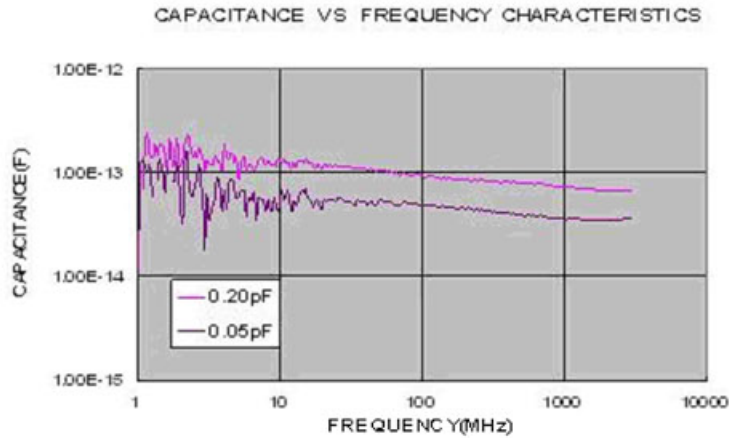
- + Wireless LAN
- + computer I/O port
- + Cell phone
- + PDA
- + USB/1394 interface
- + Digital Camera
- + GPS
- + Antenna system
- + STB
- + LCD TV
- + Projector

Low Capacitance

Part No,	Working Voltage	Trigger Voltage	Clamping Voltage	Leakage Current	Capacitance Value	ESD Contact	ESD Air
(Unit)	VDC (max)	Vtrigger(Typ.)	Vclamp(Typ.)	uA(max)	pF	KV	KV
SFI0402-060E0R20P-LF	6	150V	30	0.05	0.2	≥ 8	≥ 15
SFI0603-060E0R20P-LF	6	150V	30	0.05	0.2	≥ 8	≥ 15
SFI0402-240E0R05P-LF	24	300V	50	0.001	0.05	≥ 8	≥ 15
SFI0603-240E0R05P-LF	24	300V	50	0.001	0.05	≥ 8	≥ 15

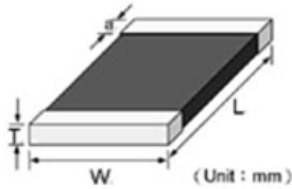
Low Capacitance

Electronic Characteristics:



CH

The Introductions of High Voltage Varistor



Type	Length	Width	Electrode
08CH (mm)	8.1±0.30	5.0± 0.30	0.8+0.5/-0.1
3220(inch)	0.315±0.012	0.196±0.012	0.0315+0.02/-0.004

SFI Model Number	Working Voltage (MAX)		Breakdown Voltage	Peak Current (MAX)	Clamping Voltage (MAX)		Energy Absorption (MAX)	Typical Capacitance ※
	AC (VRMS)	DC (V)	1mA (V)	8/20μs (A)	(A)	(V)	10/1000μs(J)	1KHz (pF)
SFI08CH560K-LF	35	45	56(50.4~61.6)	250	5	106	2.3	530
SFI08CH680K-LF	40	56	68(61.2~74.8)	250	5	124	3.0	360
SFI08CH121K-LF	75	102	120(108~132)	500	10	198	6.0	200
SFI08CH201K-LF	130	175	200(180~220)	500	10	340	13.0	100
SFI08CH361K-LF	230	300	360(324~396)	500	10	593	19.0	45
SFI08CH431K-LF	250	369	430(387~473)	450	10	705	19.0	39
SFI08CH471K-LF	300	385	470(423~517)	400	10	775	18.0	35