Miniature AC Varistor – MAV

Low Power AC and Low Capacitance DC Circuit Protection

GENERAL DESCRIPTION

KYOCERA AVX Miniature AC Varistors are designed for use in low power AC circuit protection. MAV series devices are an ideal solution to transient suppression in LC resonant circuits intended for signal & power transfer. The KYOCERA AVX part provides low loss in the resonant circuit yet is able to clamp large amounts of transients in a bi-directional manner.

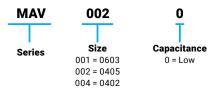
The ability to handle large transients makes the MAV series useful in low power AC circuit protection and the AEC Q200 qualification allows for use in automotive applications.

Low capacitance makes these parts useful also for higher DC voltage data lines and other capacitance sensitive applications.

GENERAL CHARACTERISTICS

- Operating Temperature: -55 to +125°C
- Working Voltage: 70Vdc / 52Vac
- Case Size: 0402, 0603, 0405 2xArray

HOW TO ORDER



FEATURES

- 110 Pk-Pk @ 125kHz capability
- AEC Q200 qualified
- ESD rated to 25kV (HBM ESD Level 6)

Packaging

- EMI/RFI attenuation in off state
- Bi-Directional protection

APPLICATIONS

- LC resonant circuits
- AC sampling circuitry
- · Transformer secondaries
- GFI modules
- Immobilizers
- · Keyless entry
- Data lines

Ρ

 Capacitance sensitive applications and more





🔇 KYOCERa

ANTENNAGUARD CATALOG PART NUMBERS/ELECTRICAL VALUES

D = 7'' reel (1,000 pcs)

R = 7'' reel (4,000 pcs)

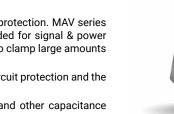
T = 13" reel (10,000 pcs) W = 7" Reel (10,000 pcs 0402 only)

Part Number	VW (DC)	VW (AC)	VB	VC	IVC	ET	IP	IL	Сар	Elements
MAV0010_P	70	52	120 ±15%	225	1	0.015	2	10	22pF Max	1
MAV0020_P	70	52	120 ±15%	225	1	0.020	3	10	8pF Max	2
MAV0040_P	70	52	120 ± 15%	225	1	0.020	1	10	6pF Max	1

Packaging Code

V _w (DC)	DC Working Voltage [V]	I _L
V _w (AC)	AC Working Voltage [V]	Ε _τ
V _B	Breakdown Votage [V @ 1mA _{DC}]	I _P
V _c	Clamping Voltage [V @ IVC]	Cap

Maximum leakage current at the working voltage [µA] Transient Energy Rating [J, 10x100µS] Peak Current Rating [A, 8x10µS] Maximum capacitance @ 1MHz and 0.5V_{RMS}

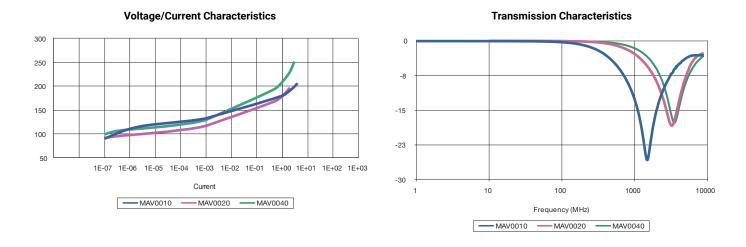


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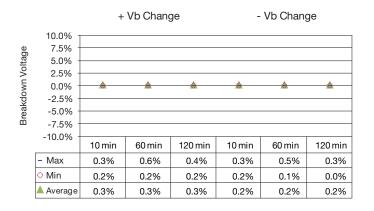


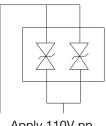
TYPICAL PERFORMANCE CURVES



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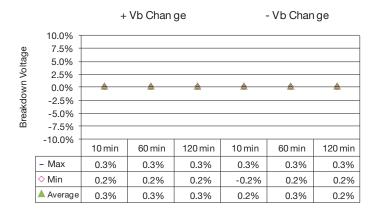
Impact of AC Voltage on Breakdown Voltage Parallel 110VPP @ 125 kHz

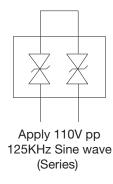




Apply 110V pp 125KHz Sine wave (Parallel)

Impact of AC Voltage on Breakdown Voltage Series 110VPP @ 125 kHz





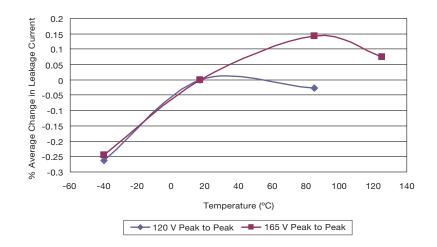
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Miniature AC Varistor – MAV

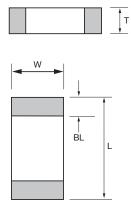


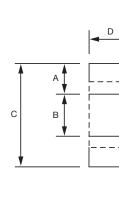


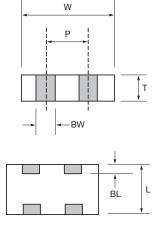
IMPACT OF AC VOLTAGE ON LEAKAGE CURRENT

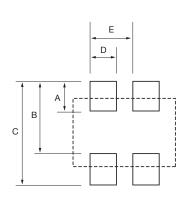


PHYSICAL DIMENSIONS AND RECOMMENDED PAD LAYOUT









L	w	т	BW	BL	Р	А	В	С	D	E
MAV0010										
1.60 ± 0.15 (0.063±0.006)	0.80 ± 0.15 (0.032±0.006)	0.90 Max (0.035) Max	N/A	0.35 ± 0.15 (0.014±0.006)	N/A	0.89 (0.035)	0.76 (0.030)	2.54 (0.100)	0.76 (0.030)	N/A
MAV0020										
1.00 ± 0.15 (0.039±0.006)	1.37 ± 0.15 (0.054±0.006)	0.66 Max (0.026) Max	0.36 ± 0.10 (0.014±0.004)	0.20 ± 0.10 (0.008±0.004)	0.64 REF (0.025)REF	0.46 (0.018)	0.74 (0.029)	1.20 (0.047)	0.30 (0.012)	0.64 (0.025)
MAV0040										
1.00±0.10 (0.040±0.004)	0.50±0.10 (0.020±0.004)	0.60 Max (0.024) Max	N/A	0.25±0.15 (0.010±0.006)	N/A	0.61 (0.024)	0.51 (0.020)	1.70 (0.067)	0.51 (0.020)	N/A

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