NEW PRODUCT BRIEF

Bourns® Fully Integrated IsoMOV™ Hybrid Protector

INTRODUCTION

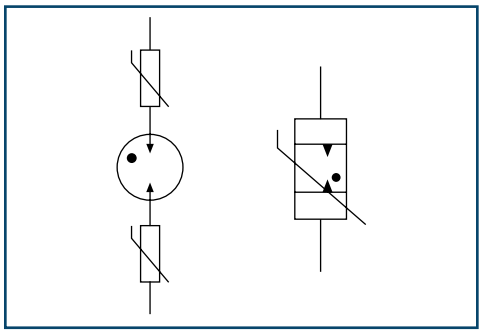
Bourns is pleased to announce its groundbreaking lineup of IsoMOV™ hybrid protection components. By combining the best features of the breakthrough surge performance EdgMOV™ technology with an integrated Gas Discharge Tube (GDT) isolation structure, the IsoMOV™ protector offers high reliability and long life including in certain harsh environments.

The IsoMOV™ Hybrid Protector Series is an upgrade to nearly any MOV power application where premium performance and/or space savings are valued. The extended temperature range, low leakage and superb energy handling density are especially advantageous to industrial and other applications exposed to high surges.

The IsoMOV™ device's unique and graceful end-of-life failure mode quickly and cleanly blows the line fuse, never leaving equipment unprotected and eliminating the need for any indicator circuitry.

The IsoMOV™ protector family of products includes three unique series of devices; Model IsoM3, IsoM5 and IsoM8. With nominal surge ratings of 3 kA, 5 kA and 8 kA, these revolutionary new protectors offer performance usually found in larger traditional MOV devices.

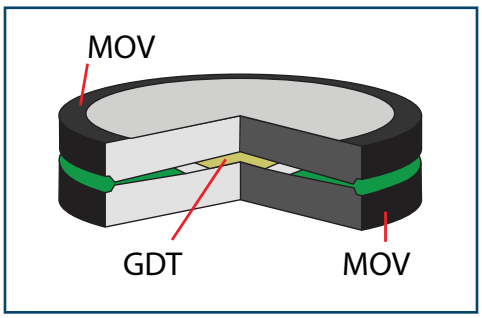
CIRCUIT DIAGRAM & SCHEMATIC SYMBOL



**RoHS Directive 2015/863, Mar 31, 2015 and Annex.*

UNIQUE CONSTRUCTION

The IsoMOV™ protector fully integrates the classic GDT and MOV in a symbiotic relationship, enhancing reliability and performance. In this configuration, the GDT blocks leakage currents through the MOV that would otherwise lead to premature failure of the MOV device, while the MOV prevents the follow-on current (after a surge) that might damage the GDT.



Using proprietary computer-aided design techniques to model performance, Bourns engineers created the equivalent function of a discrete MOV and GDT in series. After assembly of the core, leads are attached, and the unit is epoxy coated. The result is a familiar radial disc MOV package that is only slightly thicker and of substantially smaller diameter than similarly rated conventional devices.

ISOMOV™ PROTECTOR vs BENCHMARK MOV
(Nominal Surge Rating)

Product	10 mm	14 mm	20 mm
Best-in-Class MOV	2000	3000	5000
IsoMOV™ Hybrid Protectors	3000	5000	8000

In fact, the surge ratings of IsoMOV™ protectors are comparable to the surge ratings of the next larger size of conventional MOV devices. This offers designers the flexibility of choosing an IsoMOV™ protector that is smaller than the MOV option or choosing an IsoMOV™ protector of the same size as the MOV option and enhancing the surge capability of their protection scheme.

FEATURES

- AC voltage ratings: 175 V - 555 V
- Nominal surge ratings: 3 kA – 5 kA – 8 kA
- -40 °C to +125 °C operation
- Low leakage current
- Low capacitance
- Stable performance over life
- UL 1449 Type 4 CA listed
- RoHS compliant*

BENEFITS

- Enhanced reliability
- Long service life
- Improved surge ratings
- Suitable for exposed circuits
- Increased voltage protection
- Ring wave tolerant
- Reduced down time/service costs

APPLICATIONS

- Critical AC power applications
- White goods
- Motor drives
- AC inverters
- LED lighting & signage
- Surge Protective Devices (SPDs)

HOW TO ORDER

IsoM 8 - 320 - B - L2

Model Designator
IsoM = IsoMOV™ Hybrid Protection Component

Component I_{nom} Rating
3 = 3 kA
5 = 5 kA
8 = 8 kA

RMS Voltage
See Electrical Characteristics Table

Packaging
B = Bulk (Standard)
R = Reel Pack**

Lead Style***
L2 = In-Line Leads (Standard)

**Reel Pack option not available for IsoM8 models.
***L1 and L5 lead styles available upon request.

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ELECTRICAL CHARACTERISTICS[1] (@ T_A = 25 °C Unless Otherwise Noted)

Bourns Part No.	Operating				Protection					
	Max. Continuous Operating Voltage (MCOV)		Max. Leakage @ MCOV[2]	Nominal Capacitance	I_{nom} [3] [4]		I_{max} [4]	Ring Wave Surge IEEE 62.41	Max. Clamping Voltage	
	V_{rms}	V_{dc}	A_{dc}	20 kHz	15 Operations	10 Operations	1 Operation	200 A	V_c	I_c
	V	V	µA	pF	A	A	A	Operations	V	A
IsoM3-175	175	225	< 10	30	3,000		6,000	± 250	470	50
IsoM3-230	230	300	< 10	30	3,000		6,000	± 250	620	50
IsoM3-250	250	320	< 10	30	3,000		6,000	± 250	675	50
IsoM3-275	275	350	< 10	30	3,000		6,000	± 250	730	50
IsoM3-300	300	385	< 10	30	3,000		6,000	± 250	800	50
IsoM3-320	320	415	< 10	30	3,000		6,000	± 250	875	50
IsoM5-175	175	225	< 10	40	5,000		10,000	± 250	470	100
IsoM5-230	230	300	< 10	40	5,000		10,000	± 250	620	100
IsoM5-250	250	320	< 10	40	5,000		10,000	± 250	675	100
IsoM5-275	275	350	< 10	40	5,000		10,000	± 250	730	100
IsoM5-300	300	385	< 10	40	5,000		10,000	± 250	800	100
IsoM5-320	320	415	< 10	40	5,000		10,000	± 250	875	100
IsoM5-380	385	505	< 10	40	5,000		10,000	± 250	1000	100
IsoM5-420	420	560	< 10	40	5,000		10,000	± 250	1100	100
IsoM5-510	510	670	< 10	40	5,000		10,000	± 250	1300	100
IsoM5-555	555	745	< 10	40	5,000		10,000	± 250	1400	100
IsoM8-250	250	320	< 10	50		8,000	15,000	± 250	675	200
IsoM8-275	275	350	< 10	50		8,000	15,000	± 250	730	200
IsoM8-300	300	385	< 10	50		8,000	15,000	± 250	800	200
IsoM8-320	320	415	< 10	50		8,000	15,000	± 250	875	200
IsoM8-380	385	505	< 10	50		8,000	15,000	± 250	1000	200
IsoM8-420	420	560	< 10	50		8,000	15,000	± 250	1100	200
IsoM8-510	510	670	< 10	50		8,000	15,000	± 250	1300	200
IsoM8-555	555	745	< 10	50		8,000	15,000	± 250	1400	200

[1] *At delivery AQL 0.65 Level II, DIN ISO 2859.*

[2] *Max. leakage limits after life ratings may exceed 10 µA, but will continue to protect at MCOV.*

[3] *I_{nom} service life specified at 3-minute time intervals between surges with rated MCOV applied during the entire resting period and 15 minutes after the last surge.*

[4] *Surge profile 8/20 µs per IEC 61000-4-5.*

Electronic Products Product of the Year 2021 Award Winner

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