

## Product Change Notification

CHIPGUARD® PRODUCTS



REVISED October, 2016

### Introduction of Lead-Free ChipGuard® Varistor ESD Clamp Protectors

As part of Bourns' commitment to introduce ecologically friendly substances in our products, the select Bourns® ChipGuard® [MLA Series](#), [MLD Series](#), and [MLE Series](#) Varistor ESD Clamp Protectors listed below will become lead-free. Currently, the sintering flux in the metal oxide layer used in the manufacture of these components contains traces of lead which is allowed under Exemption 7(c)-I\*. Bourns will convert to a lead-free sintering flux in the metal oxide layer for these models, eliminating the use of Exemption 7(c)-I.

The Varistor Voltage ( $V_n$ ) and Clamping voltage ( $V_c$ ) of some part numbers will increase slightly over current values as shown in the comparisons on page 2. Other electrical and mechanical characteristics remain unchanged.

The change of sintering flux in the metal oxide layer will not affect the form, fit or function of the products covered. The agency certifications are unaffected. The product marking and label will remain unchanged. Identification of the changed product can be determined through the date code and lot code. Qualification reports and samples are available upon request.

#### Affected Part Numbers

CG0402MLA-5.5MG	CG0402MLD-12G
CG0402MLA-18KG	CG0603MLD-12E
CG0603MLA-5.5ME	
CG0603MLA-18KE	CG0402MLE-18G
CG0603MLA-26KE	CG0603MLE-18E

Implementation dates are as follows:

*Last time buy date: **July 1, 2016***

*Date that manufacturing of existing products will cease: **July 31, 2016***

*Date that deliveries of lead-free products will begin: **August 7, 2016***

*First date code using the above changes: **1632***

If you have any questions or need additional information, please feel free to contact [Customer Service/ Inside Sales](#).

\* *Exemption 7(c)-I: Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound. The European Union's Restrictions on use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive, 2002/95/EC (commonly called "RoHS") and amendments and 2011/65/EU (commonly called "RoHS Recast or RoHS2").*

Users should verify that the described change will not impact the performance of the product in their specific applications.

GDT1608

## MLA Series

**CURRENT** Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	Vrms (V)	VDC (V)	VN Min. (V)	VN Max. (V)	VC (V)	ITM (Max.) (A)	WTM (Max.) (J)	CP (pF) Typ.
	<50 $\mu$ A		1 mA DC		1 A @ 8/20 $\mu$ s	@ 8/20 $\mu$ s	10/1000 $\mu$ s	@ 1 MHz
CG0402MLA-5.5MG	4	5.5	6.4	9.6	19	20	0.05	270
CG0402MLA-14KG	11	14	16.2	19.8	38	20	0.05	90
CG0402MLA-14LG	11	14	15.3	20.7	30	20	0.05	100
CG0402MLA-18KG	14	18	19.8	24.2	45	20	0.05	85
CG0603MLA-5.5ME	4	5.5	6.4	9.6	19	30	0.1	270
CG0603MLA-14KE	11	14	16.2	19.8	35	30	0.1	150
CG0603MLA-18KE	14	18	19.8	24.2	40	30	0.1	130
CG0603MLA-26KE	20	26	27.9	34.1	58	30	0.1	100

**REVISED** Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	Vrms (V)	VDC (V)	VN Min. (V)	VN Max. (V)	VC (V)	ITM (Max.) (A)	WTM (Max.) (J)	CP (pF) Typ.
	<50 $\mu$ A		1 mA DC		1 A @ 8/20 $\mu$ s	@ 8/20 $\mu$ s	10/1000 $\mu$ s	@ 1 MHz
CG0402MLA-5.5MG	4	5.5	8.0	18.0	24	20	0.05	270
CG0402MLA-14KG	11	14	16.2	19.8	38	20	0.05	90
CG0402MLA-14LG	11	14	15.3	20.7	30	20	0.05	100
CG0402MLA-18KG	14	18	23.0	33.0	45	20	0.05	85
CG0603MLA-5.5ME	4	5.5	8.0	18.0	24	30	0.1	270
CG0603MLA-14KE	11	14	16.2	19.8	35	30	0.1	150
CG0603MLA-18KE	14	18	23.0	33.0	54	30	0.1	130
CG0603MLA-26KE	20	26	32.0	42.0	70	30	0.1	100

## MLD Series

**CURRENT** Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	Continuous Operating Voltage	Breakdown Voltage	Clamping Voltage	Off-state Current	Capacitance
	V <sub>DC</sub> (V)	V <sub>B</sub> @ 1 mA (V)	V <sub>C</sub> @ 1 A 8/20 $\mu$ s (V)	I <sub>L</sub> ( $\mu$ A)	C <sub>OFF</sub> (pF)
	Max.	Typ.	Max.	Max.	Max.
CG0402MLD-12G	12	50	140	1	5
CG0603MLD-12E	12	50	140	1	5

**REVISED** Electrical Characteristics @ 25 °C (unless otherwise noted)

Model	Continuous Operating Voltage	Breakdown Voltage	Clamping Voltage	Off-state Current	Capacitance
	V <sub>DC</sub> (V)	V <sub>B</sub> @ 1 mA (V)	V <sub>C</sub> @ 1 A 8/20 $\mu$ s (V)	I <sub>L</sub> ( $\mu$ A)	C <sub>OFF</sub> (pF)
	Max.	Typ.	Max.	Max.	Max.
CG0402MLD-12G	12	50	150	1	5
CG0603MLD-12E	12	50	150	1	5