

Features

- Complies with UL 1449 and IEC/EN 61643-11 standards
- UL recognized Type 4, Type 2 location SPD, passed short circuit current rating (SCCR) @ 200 kA
- High reliability protected MOV with Advanced Thermal Disconnecter (TD+)
- Compact size to save installation space
- PCB mount design, compatible with reflow and wave soldering procedures

1220 TPMOV Surge Protective Device

General Information

The Bourns® Model 1220 Series is a surge suppressor with thermal protection designed to open in the event of overheating due to an abnormal overvoltage or temporary overvoltage (TOV) and will interrupt any abnormal current that may be encountered, up to rated limits.

Additional Information

Click these links for more information:



Electrical Characteristics

Characteristic		1220-10				
		-I2-120M1	-I2-277M1	-I2-400M1	-I1-480M1	-I1-600M1
Nominal System Voltage		120 V	277 V	347 V	480 V	600 V
Compliance		UL 1449				
Category UL		Type 4, Type 2 Location				
Product Technologies		High Energy MOV Technology Advanced Thermal Disconnecter (TD+)				
Connection Mode		1 Pole, L-N or L-G or N-PE				
AC System		IT, TT, TN, Single, Split Phase, Delta, Wye				
Max. Operating Voltage (MCOV)		150 V	320 V	420 V	550 V	690 V
UL 1449	Nominal Discharge Current 8/20 μ s (I_n)	10 kA				
	Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	25 kA			22 kA	
	Voltage Protection Rating (VPR)	≤ 0.6 kV	≤ 1.0 kV	≤ 1.2 kV	≤ 1.8 kV	≤ 2.0 kV
	Short Circuit Current Rating (SCCR)	200 kA _{rms}				

Agency Recognition

Agency	Category	Agency File No.
	UL 1449	E313168

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com

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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Applications

- Surge protection devices
- AC-DC distribution
- All power circuits
- Telecommunications
- Built-in surge protection of electronic equipment

1220 TPMOV Surge Protective Device

BOURNS®

Electrical Characteristics (continued)

Characteristic		1220-20			
		-I4-120M2	-I4-277M2	-I4-400M2	-I4-480M2
Nominal System Voltage		120 V	277 V	347 V	480 V
Compliance		UL 1449			
Category UL		Type 4, Type 1 Location			
Product Technologies		High Energy MOV Technology Advanced Thermal Disconnect (TD+)			
Connection Mode		1 Pole, L-N or L-G or N-PE			
AC System		IT, TT, TN, Single, Split Phase, Delta, Wye			
Max. Operating Voltage (MCOV)		150 V	320 V	420 V	550 V
UL 1449	Nominal Discharge Current 8/20 μ s (I_n)	20 kA			
	Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	50 kA			
	Voltage Protection Rating (VPR)	≤ 0.6 kV	≤ 1.0 kV	≤ 1.2 kV	≤ 1.8 kV
	Short Circuit Current Rating (SCCR)	200 kA _{rms}			

Characteristic		1220-20					
		-I4-120M3	-I4-230M3	-I4-277M3	-I4-400M3	-I4-480M3	-I3-600M3
Nominal System Voltage		120 V	230 V	277 V	347 V	480 V	600 V
Compliance		UL 1449					
Category UL		Type 4, Type 2 Location					
Product Technologies		High Energy MOV Technology Advanced Thermal Disconnect (TD+)					
Connection Mode		1 Pole, L-N or L-G or N-PE					
AC System		IT, TT, TN, Single, Split Phase, Delta, Wye					
Max. Operating Voltage (MCOV)		150 V	275 V	320 V	420 V	550 V	690 V
UL 1449	Nominal Discharge Current 8/20 μ s (I_n)	20 kA					
	Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	50 kA					40 kA
	Voltage Protection Rating (VPR)	≤ 0.6 kV	≤ 0.8 kV	≤ 1.0 kV	≤ 1.5 kV	≤ 1.5 kV	≤ 2.0 kV
	Short Circuit Current Rating (SCCR)	200 kA _{rms}					

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

BOURNS®

Electrical Characteristics (continued)

Characteristic		1220-20		
		-15-120M4	-15-230M4	-15-277M4
Nominal System Voltage		120 V	230 V	277 V
Compliance		UL 1449		
Category UL		Type 4, Type 2 Location		
Product Technologies		High Energy MOV Technology Advanced Thermal Disconnect (TD+)		
Connection Mode		1 Pole, L-N or L-G or N-PE		
AC System		IT, TT, TN, Single, Split Phase, Delta, Wye		
Max. Operating Voltage (MCOV)		150 V	275 V	320 V
UL 1449	Nominal Discharge Current 8/20 μ s (I_n)	20 kA		
	Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	75 kA		
	Voltage Protection Rating (VPR)	≤ 0.6 kV	≤ 0.8 kV	≤ 1.0 kV
	Short Circuit Current Rating (SCCR)	200 kA _{rms}		

General Characteristics

Characteristic	1220 TPMOV
Thermal Disconnect	UL 60691
Dimensions	See Product Dimensions
Mounting	PCB
Remote Signal Indicator	Floating Contact (50 mA 12 VDC) for Fault Indication Module Type 1 and Type 2 – Open: Failure; Closed: Normal Module Type 3 and Type 4 – Open: Normal; Closed: Failure
Enclosure Material	Thermoplastic UL 94V0
Insulation Resistance	>10 M Ω
Response Time	≤ 25 ns
Follow Current	None

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device



Environmental Characteristics

Characteristic	1220 TPMOV
Operating Temperature	Model Type 1: -40 °C to +80 °C Model Type 2/3/4: -40 °C to +85 °C
Operating Altitude	≤2000 m
Relative Humidity	5 to 95 % Non-condensing
Environmental Rating	IP20
Moisture Sensitivity Level	1
ESD Classification (HBM)	N/A

Standards Compliance

IEC/EN 61643-11..... Class II , Type 2
 UL1449..... Type 4, Type 2 location
 CSA C22.2..... Type 4, Type 2 location
 IEEE C62.41
 RoHS..... RoHS Directive 2015/863, Mar 31, 2015 and Annex

How to Order

1220 - xx - lx - xxxMx

Model Designator _____
 1220 = Thermally Protected Metal Oxide Varistor

Nominal Discharge Current (8/20µs) I_{nom} rate _____
 10 = 10 kA
 20 = 20 kA

Max. Discharge Current (8/20µs) I_{max} rate _____
 1 = 22 kA
 2 = 25 kA
 3 = 40 kA
 4 = 50 kA
 5 = 75 kA

Operating Voltage _____
 120 = 120/240 V, 120/208 V
 230 = 220/380 V, 230/400 V
 277 = 240/415 V, 277/480 V
 400 = 277/480 V, 347/600 V
 480 = 347/600 V, 480 V (Delta)
 600 = 600 V (Delta)

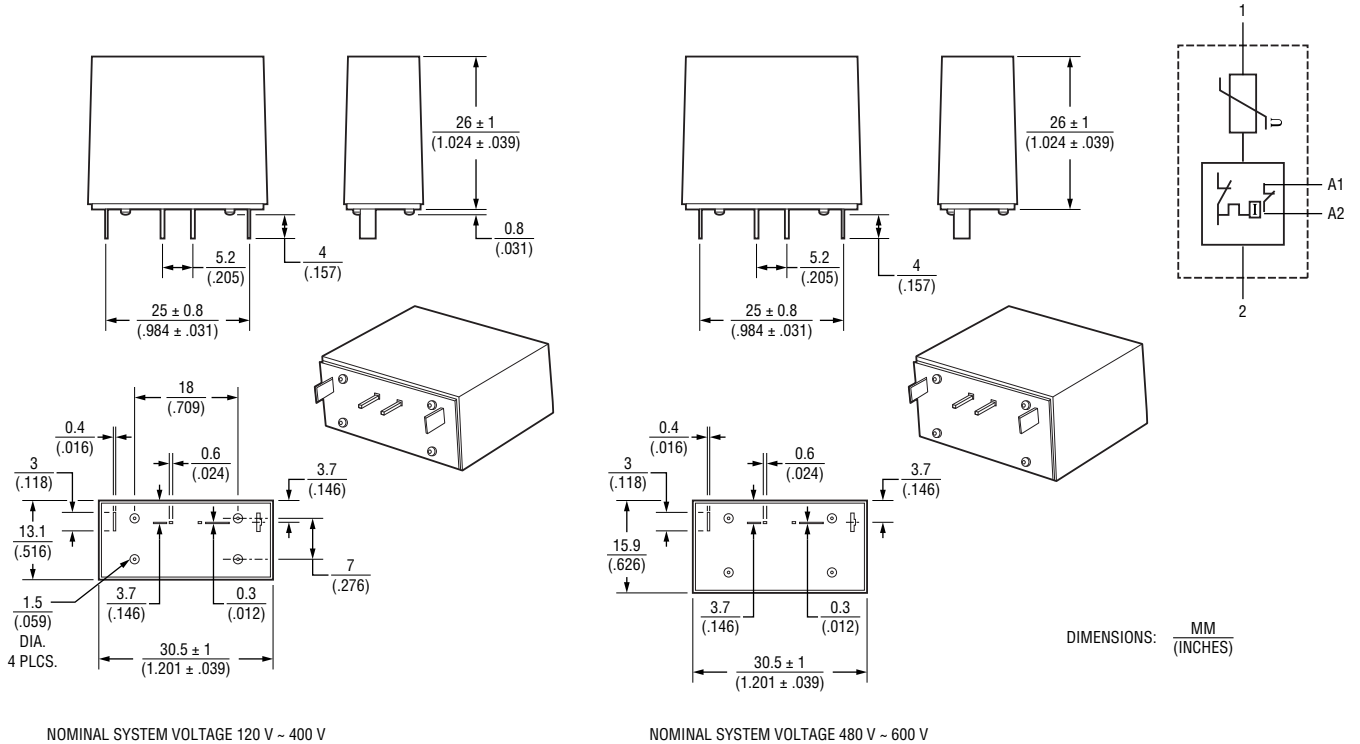
Module Type (Refer the Product Dimensions) _____
 M1 = Module Type 1
 M2 = Module Type 2
 M3 = Module Type 3
 M4 = Module Type 4

1220 TPMOV Surge Protective Device

BOURNS®

Product Dimensions and Schematics

M1 – Module Type 1



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

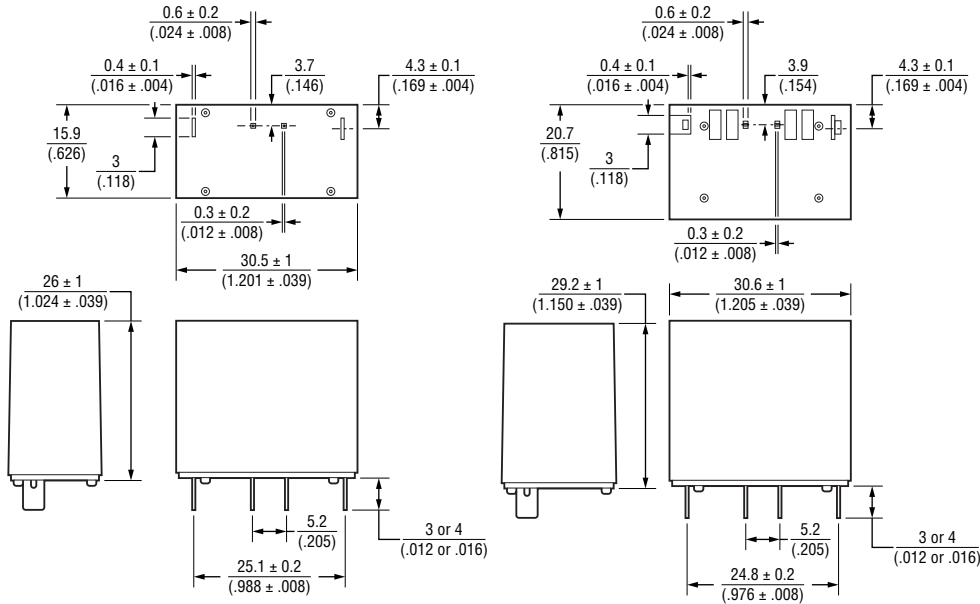
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

BOURNS®

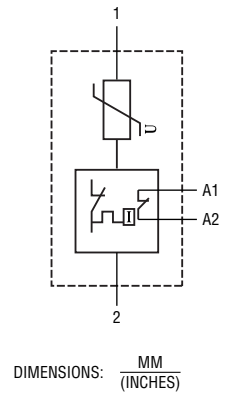
Product Dimensions and Schematics (continued)

M2 – Module Type 2



NOMINAL SYSTEM VOLTAGE 120 V

NOMINAL SYSTEM VOLTAGE 277 V - 480 V



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

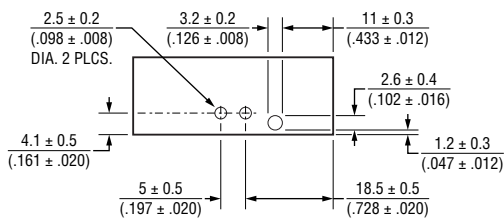
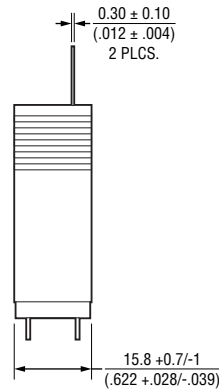
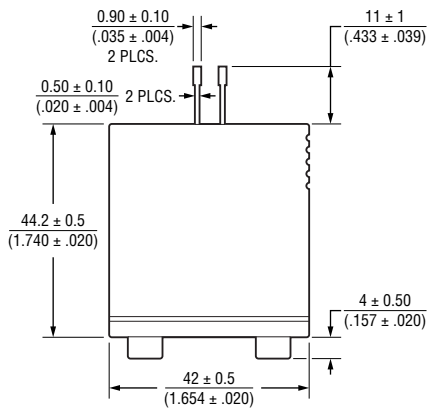
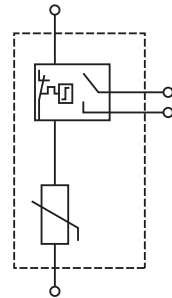
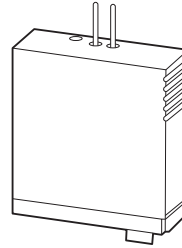
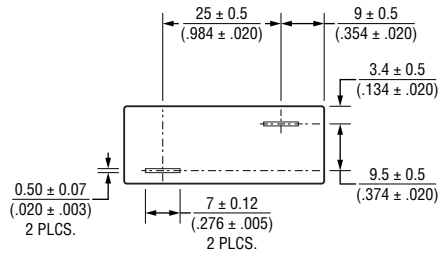
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

BOURNS®

Product Dimensions and Schematics (continued)

M3 – Module Type 3



DIMENSIONS: $\frac{\text{MM}}{\text{INCHES}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

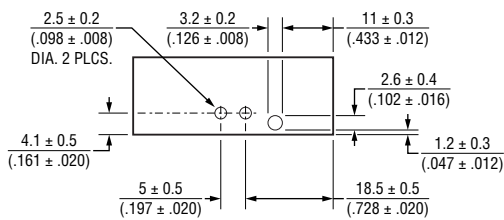
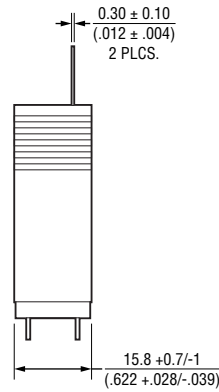
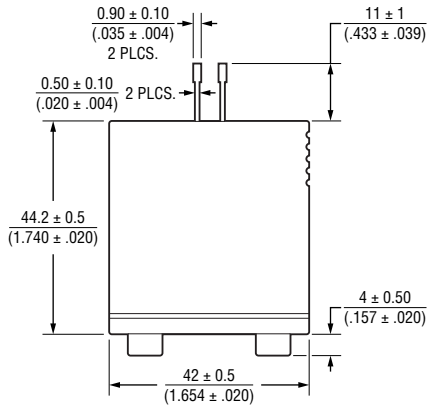
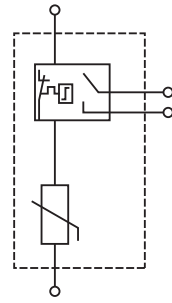
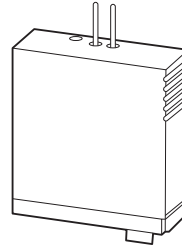
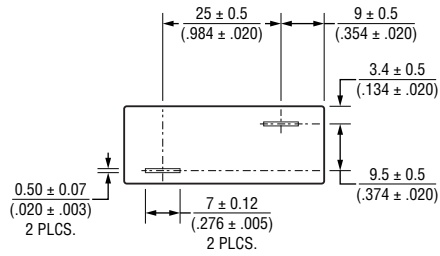
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

BOURNS®

Product Dimensions and Schematics (continued)

M4 – Module Type 4



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

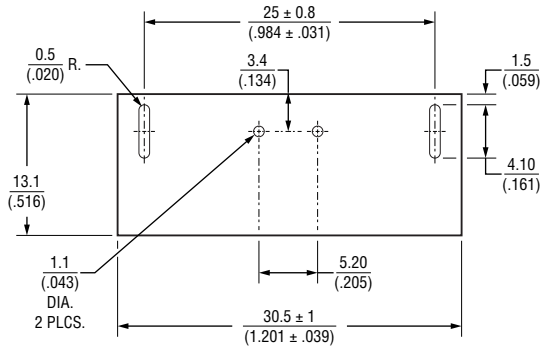
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

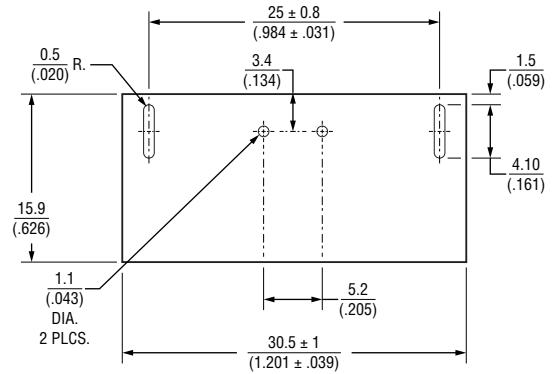


PCB Layout Dimensions

M1 – Module Type 1



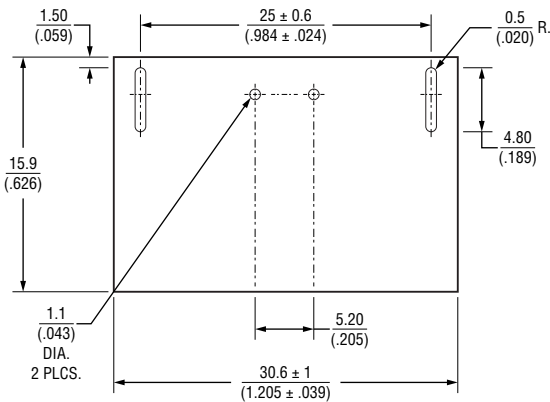
NOMINAL SYSTEM VOLTAGE 120 V ~ 400 V



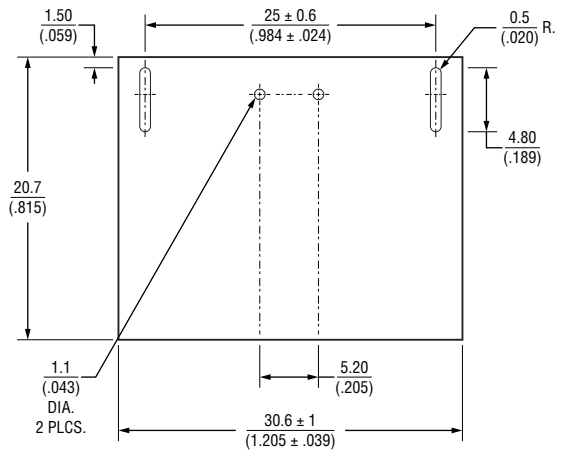
NOMINAL SYSTEM VOLTAGE 480 V ~ 600 V

TOLERANCE: ± 0.5 (.020)

M2 – Module Type 2



NOMINAL SYSTEM VOLTAGE 120 V



NOMINAL SYSTEM VOLTAGE 277 V ~ 480 V

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

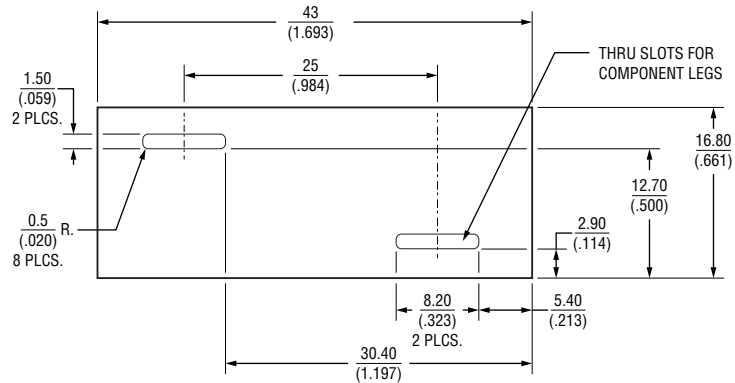
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

1220 TPMOV Surge Protective Device

BOURNS®

PCB Layout Dimensions (continued)

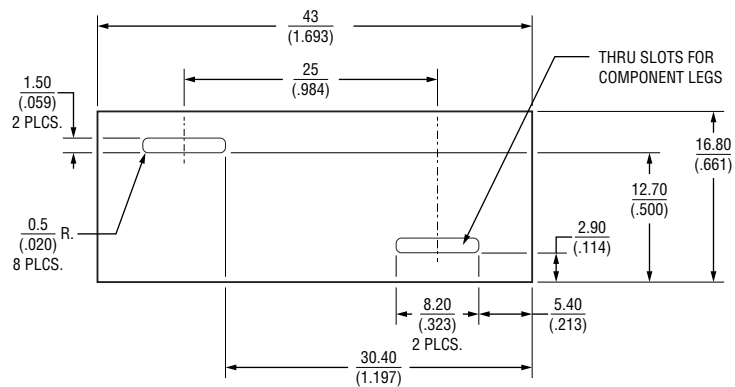
M3 – Module Type 3



DIMENSIONS: $\frac{\text{MM}}{\text{INCHES}}$

TOLERANCE: $\pm 0.1 (.004)$

M4 – Module Type 4



DIMENSIONS: $\frac{\text{MM}}{\text{INCHES}}$

TOLERANCE: $\pm 0.1 (.004)$

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com

REV. 10/23

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

This legal disclaimer applies to purchasers and users of Bourns® products manufactured by or on behalf of Bourns, Inc. and its affiliates (collectively, “Bourns”).

Unless otherwise expressly indicated in writing, Bourns® products and data sheets relating thereto are subject to change without notice. Users should check for and obtain the latest relevant information and verify that such information is current and complete before placing orders for Bourns® products.

The characteristics and parameters of a Bourns® product set forth in its data sheet are based on laboratory conditions, and statements regarding the suitability of products for certain types of applications are based on Bourns’ knowledge of typical requirements in generic applications. The characteristics and parameters of a Bourns® product in a user application may vary from the data sheet characteristics and parameters due to (i) the combination of the Bourns® product with other components in the user’s application, or (ii) the environment of the user application itself. The characteristics and parameters of a Bourns® product also can and do vary in different applications and actual performance may vary over time. Users should always verify the actual performance of the Bourns® product in their specific devices and applications, and make their own independent judgments regarding the amount of additional test margin to design into their device or application to compensate for differences between laboratory and real world conditions.

Unless Bourns has explicitly designated an individual Bourns® product as meeting the requirements of a particular industry standard (e.g., ISO/TS 16949) or a particular qualification (e.g., UL listed or recognized), Bourns is not responsible for any failure of an individual Bourns® product to meet the requirements of such industry standard or particular qualification. Users of Bourns® products are responsible for ensuring compliance with safety-related requirements and standards applicable to their devices or applications.

Bourns® products are not recommended, authorized or intended for use in nuclear, lifesaving, life-critical or life-sustaining applications, nor in any other applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any Bourns® products in such unauthorized applications might not be safe and thus is at the user’s sole risk. Life-critical applications include devices identified by the U.S. Food and Drug Administration as Class III devices and generally equivalent classifications outside of the United States.

Bourns expressly identifies those Bourns® standard products that are suitable for use in automotive applications on such products’ data sheets in the section entitled “Applications.” Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard products in an automotive application might not be safe and thus is not recommended, authorized or intended and is at the user’s sole risk. If Bourns expressly identifies a sub-category of automotive application in the data sheet for its standard products (such as infotainment or lighting), such identification means that Bourns has reviewed its standard product and has determined that if such Bourns® standard product is considered for potential use in automotive applications, it should only be used in such sub-category of automotive applications. Any reference to Bourns® standard product in the data sheet as compliant with the AEC-Q standard or “automotive grade” does not by itself mean that Bourns has approved such product for use in an automotive application.

Bourns® standard products are not tested to comply with United States Federal Aviation Administration standards generally or any other generally equivalent governmental organization standard applicable to products designed or manufactured for use in aircraft or space applications. Bourns expressly identifies Bourns® standard products that are suitable for use in aircraft or space applications on such products’ data sheets in the section entitled “Applications.” Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard product in an aircraft or space application might not be safe and thus is not recommended, authorized or intended and is at the user’s sole risk.

The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

Users shall not sell, transfer, export or re-export any Bourns® products or technology for use in activities which involve the design, development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor shall they use Bourns® products or technology in any facility which engages in activities relating to such devices. The foregoing restrictions apply to all uses and applications that violate national or international prohibitions, including embargos or international regulations. Further, Bourns® products and Bourns technology and technical data may not under any circumstance be exported or re-exported to countries subject to international sanctions or embargoes. Bourns® products may not, without prior authorization from Bourns and/or the U.S. Government, be resold, transferred, or re-exported to any party not eligible to receive U.S. commodities, software, and technical data.

To the maximum extent permitted by applicable law, Bourns disclaims (i) any and all liability for special, punitive, consequential, incidental or indirect damages or lost revenues or lost profits, and (ii) any and all implied warranties, including implied warranties of fitness for particular purpose, non-infringement and merchantability.

For your convenience, copies of this Legal Disclaimer Notice with German, Spanish, Japanese, Traditional Chinese and Simplified Chinese bilingual versions are available at:

Web Page: <http://www.bourns.com/legal/disclaimers-terms-and-policies>

PDF: <http://www.bourns.com/docs/Legal/disclaimer.pdf>

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Board Mount Surge Protectors](#) category:

Click to view products by [Bourns](#) manufacturer:

Other Similar products are found below :

[SMTPA200](#) [LTC4364HMS-1#TRPBF](#) [LT4363IDE-2#TRPBF](#) [LT4363IMS-2#PBF](#) [LTC4364IS-2#PBF](#) [LTC4365CDDDB#TRMPBF](#) [1220-10-I1-600M1](#) [1220-10-I2-277M1](#) [1220-10-I2-400M1](#) [1220-10-I2-120M1](#) [1220-10-I1-480M1](#) [1220-20-I4-480M2](#) [1220-20-I4-120M2](#) [1220-20-I4-277M2](#) [1220-20-I4-400M2](#) [1220-20-I4-230M3](#) [1220-20-I3-600M3](#) [1220-20-I4-120M3](#) [1220-20-I4-277M3](#) [1220-20-I4-400M3](#) [1220-20-I4-480M3](#) [1220-20-I5-230M4](#) [1220-20-I5-277M4](#) [1220-20-I5-120M4](#) [C650-180-WH](#) [TBU-CA065-100-WH-Q](#) [TBU-CA085-500-WH-Q](#) [TBU-CA065-300-WH-Q](#) [TBU-CA025-050-WH-Q](#) [TBU-CA025-100-WH](#) [TBU-CA040-100-WH](#) [TBU-CA040-200-WH](#) [TBU-CA040-300-WH](#) [TBU-CA040-500-WH](#) [TBU-CA050-050-WH](#) [TBU-CA065-500-WH](#) [TBU-CA085-050-WH](#) [TBU-CA065-050-WH-Q](#) [TBU-CA085-100-WH-Q](#) [TBU-CA085-200-WH](#) [TBU-DB055-100-WH-Q](#) [TBU-DF055-050-WH](#) [TBU-DF055-200-WH](#) [TBU-DF055-300-WH](#) [TBU-DF085-050-WH](#) [TBU-DF085-200-WH](#) [TBU-DF085-300-WH](#) [TBU-DT065-100-WH](#) [TBU-DT065-300-WH](#) [TBU-DT085-100-WH](#)