

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number:	2027-09-SM-RPLF
Manufacturer:	Bourns Inc.
Package:	Tape & Reel (TR), Cut Tape (CT)
Availability:	Please confirm with sales

Product Page:

<https://antrexco.com/product/details/bourns-inc/2027-09-sm-rplf.html>

Request a Quote:

[Submit RFQ for this part](#)



Scan for product page

Contact Information

Email: info@antrexco.com

WhatsApp: +86-186-8066-5326

Website: <https://antrexco.com>

Quality & Trust

New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



Features

- Surface mount for economical assembly
- High surge current rating
- Low capacitance and insertion loss
- Stable breakdown throughout life
- 8 mm diameter, 6 mm long
- UL Recognized 

Additional Information

Click these links for more information:



[PRODUCT
SELECTOR](#)



[TECHNICAL
LIBRARY](#)



[INVENTORY](#)



[SAMPLES](#)



[CONTACT](#)

2027-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns offers an 8 x 6 mm Surface Mount (SM) 2-electrode GDT surge protection device. The industry-leading quality and features of Bourns® 2027 Series GDT continue in this new SM version. Compatible with “pick and place” assembly systems, the 2027-SM is ideal for compact applications such as PCBs for telecommunications, commercial and industrial applications.

Characteristics

Test Methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

Characteristic	Model No.					
	2027-07-SM	2027-09-SM	2027-15-SM	2027-20-SM	2027-23-SM	2027-25-SM
DC Sparkover $\pm 15\%$ ($\pm 20\%$ for Models 2027-07-SM & 2027-09-SM) @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V
Impulse Sparkover ⁽¹⁾						
100 V/ μ s	300 V	300 V	350 V	400 V	450 V	475 V
1000 V/ μ s	500 V	500 V	575 V	600 V	675 V	700 V

Characteristic	Model No.					
	2027-30-SM	2027-35-SM	2027-40-SM	2027-42-SM	2027-47-SM	2027-60-SM
DC Sparkover $\pm 15\%$ @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover ⁽¹⁾						
100 V/ μ s	550 V	600 V	650 V	675 V	725 V	850 V
1000 V/ μ s	800 V	875 V	925 V	950 V	1000 V	1100 V

⁽¹⁾ Impulse Sparkover voltage is defined as typical values of distribution.

Insulation Resistance	100 V (50 V for Models 2027-07-SM & 2027-09-SM)	$> 10^{10} \Omega$
Glow Voltage	10 mA	~ 70 V
Arc Voltage	> 1 A	~ 10 V
Glow-Arc Transition Current		< 0.5 A
Capacitance	1 MHz	< 1 pF
DC Holdover Voltage ⁽²⁾	135 V, (52 V for Models 2027-07-SM & 2027-09-SM; 80 V for Model 2027-15-SM) ...	< 150 ms
Impulse Discharge Current	25000 A, 8/20 μ s ⁽³⁾	1 operation minimum
	10000 A, 8/20 μ s	> 10 operations
	2000 A, 10/350 μ s	2 operations
	500 A, 10/1000 μ s	> 400 operations
	100 A, 10/1000 μ s or 10/700 μ s	> 1000 operations
Alternating Discharge Current	65 Arms, 11 cycles***	1 operation minimum
	10 Arms, 1 s	> 10 operations
Operating Temperature		-55 to +125 °C
Climatic Category (IEC 60068-1)		40/90/21

Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 27-xxxV.
- Surface Mount (SM) parts may show a temporary increase in DCBD after the solder reflow process. Most devices will recover within 24 hours time. It should be noted that there is no quality defect nor change in protection levels during the temporary change in DCBD.
- Sparkover limits $\pm 20\%$ after life, IR $> 10^8 \Omega$ (-25% , $+30\%$ for Models 2027-07-SM, 2027-09-SM and 2027-60-SM).
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- Bourns recommends reflowing surface mount devices per IPC/JEDEC J-STD-020 rev D.

⁽²⁾ Network applied.

⁽³⁾ DC Sparkover may exceed $\pm 20\%$ after discharge, but will continue to protect without venting.

*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.



WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

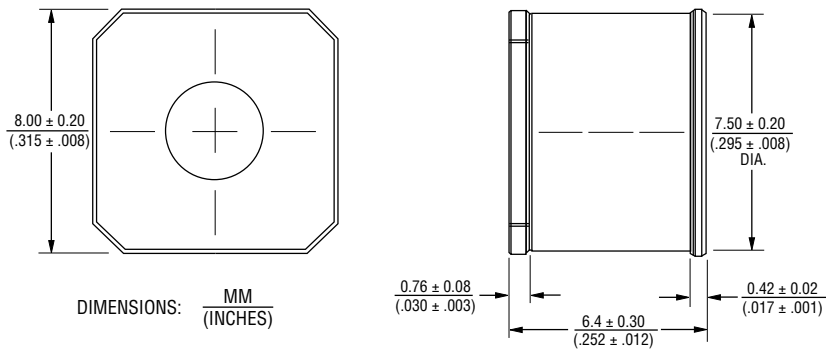
Applications

- Telecommunications
- Industrial electronics
- Commercial electronics

2027-xx-SM Precision Gas Discharge Tube Surge Protector

BOURNS®

Product Dimensions



Recommended Pad Layout



How to Order

Model Number Designator _____

Voltage (Divided by 10) _____

Surface Mount _____

Packaging Option _____

RoHS Compliant Option _____

2027 - xx - SM - RP LF

07 = 75 V 30 = 300 V
09 = 90 V 35 = 350 V
15 = 150 V 40 = 400 V
20 = 200 V 42 = 420 V
23 = 230 V 47 = 470 V
25 = 250 V 60 = 600 V

Blank = Bulk Packaging (Standard)
RP = 24 mm Reelpack (Optional)
RP2 = 16 mm Reelpack (Optional)
RP3 = 16 mm Reelpack / Vertical part alignment in tape (Optional)

Blank = Standard Product
LF = RoHS Compliant Product

Packaging Specifications

Model	Standard Packaging Quantity			
	Bulk (Bag)	Tray	Box	Reel
2027-xx-SM	250		1000	
2027-xx-SM-RP				500
2027-xx-SM-RP2				500

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.

BOURNS®

The optional reelpacks (-RP, -RP2, -RP3) are 33 cm in diameter and 3 cm wide.

Technical drawing of a rectangular metal part, likely a component for a tape-based assembly. The drawing includes dimensions in both millimeters (mm) and inches (inches).

Dimensions:

- Overall width: 16.00 (0.630)
- Overall height: 24.0 (0.94)
- Top edge hole spacing: 2.00 (0.079)
- Top edge hole diameter: 1.50 (0.059) DIA.
- Top edge hole offset: 4.00 (0.157)
- Left side hole diameter: 0.41 ± 0.10 (0.02 ± 0.004)
- Left side hole offset: 8.08 (0.32)
- Left side hole angle: 33°
- Left side hole angle: 7°
- Left side hole offset: 8.48 (0.334)
- Bottom edge hole spacing: 7.11 (0.28)
- Bottom edge hole offset: 7.51 (0.296)
- Bottom edge hole diameter: 1.50 (0.059) DIA.
- Bottom edge hole offset: 11.5 (0.45)
- Bottom edge hole offset: 1.75 (0.07)

Section A-A: A cross-section view of the part, showing the internal structure and the hole. The section line A-A is indicated by a dashed line and arrows.

Part Orientation in Tape: A note indicating the orientation of the part in the tape.

Dimensions: MM (INCHES)

Technical drawing of a tape assembly. The drawing shows a side view of the tape with dimensions in inches and millimeters. Key dimensions include:

- Top edge thickness: .36 (.014)
- Top edge width: 4.00 (.157)
- Top edge radius: 0.76 (.030) R
- Left edge thickness: 5.19 (.204)
- Left edge width: 6.85 (.270)
- Bottom edge thickness: 8.41 (.331)
- Bottom edge width: 7.95 (.374)
- Bottom edge radius: 0.95 (.037) R
- Right edge thickness: 6.85 (.270)
- Right edge width: 16.0 (.630)
- Right edge radius: 3.20 (.126)
- Bottom edge width: 9.51 (.374)

The drawing also includes a label "PART ORIENTATION IN TAPE" pointing to the bottom edge of the tape.

Technical drawing of a tape reel showing dimensions in inches and millimeters.

Left View Dimensions:

- Top flange thickness: 0.40 ± 0.05 (.016 ± .002)
- Flange height: 5.10 (.201)
- Bottom flange width: 8.40 (.331)

Main View Dimensions:

- Total width: 12.00 (.473)
- Distance from centerline to first hole: 4.00 ± 0.20 (.157 ± .008)
- Hole diameter: 2.00 ± 0.10 (.079 ± .004)
- Distance between holes: $1.50 + 0.1/-0.0$ (.059 ± .004/- .000) DIA.
- Distance from centerline to last hole: 1.75 ± 0.1 (.069 ± .004)
- Reel body height: 16.0 ± 0.3 (.630 ± .012)
- Distance from bottom flange to reel body: 7.50 ± 0.1 (.295 ± .004)
- Distance from centerline to first T-shaped feature: 7.9 (.311)
- Distance between T-shaped features: 9.5 (.374)
- T-shaped feature radius: 0.5 (.020) R TYP.
- Distance from centerline to last T-shaped feature: $1.50 + 0.1/-0.0$ (.059 ± .004/- .000) DIA.

Annotations:

- PART ORIENTATION IN TAPE

Unless otherwise specified, tolerances in decimals
are .X ± 0.3, .XX ± 0.15 for lengths in millimeters and ±1 ° for degrees.

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>