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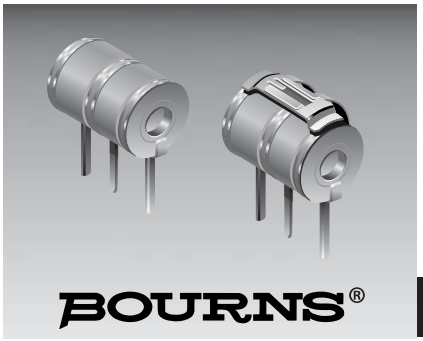
Gasentladungs-Röhren

BOURNS INC
Leading by design

02/2005



BOURNS®

Features

- Balanced TRIGARD®
- 8 mm diameter, 11 mm long
- UL recognized
- Custom configurations available
- High surge current rating
- Stable breakdown throughout life

Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Consumer electronics
- Automotive, aircraft, military electronics

2026 Series - 3-Pole Gas Discharge Tube

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31, RUS PE-80, Telcordia GR 1361

Characteristic	Model No.					
	2026-07	2026-09	2026-15	2026-20	2026-23	2026-25
DC Sparkover ±20 % @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V[1]
Impulse Sparkover						
100 V/μs	275 V	275 V	350 V	425 V	450 V	475 V
1000 V/μs	700 V	600 V	575 V	625 V	650 V	700 V

Characteristic	Model No.					
	2026-30	2026-35	2026-40	2026-42	2026-47	2026-60
DC Sparkover ±20 % @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover						
100 V/μs	550 V	625 V	675 V	725 V	800 V	925 V
1000 V/μs	775 V	875 V	925 V	1000 V	1100 V	1250 V

Impulse Transverse Delay	1000 V/μs		< 75 ns
Insulation Resistance	100 V (50 V for Model 2026–07 & 2026-09)		> 10^{10} Ω
Glow Voltage	10 mA		~ 70 V
Arc Voltage	1A		~ 10 V
Glow-Arc Transition Current			< 0.5 A
Capacitance	1 MHz		< 2 pF
DC Holdover Voltage[2]	>135 V, (52 V for Model 2026-07 & 2026-09, 80 V for Model 2026-15)		< 150 ms
Impulse Discharge Current	40000 A, 8/20 μs[3]		1 operation minimum
	20000 A, 8/20 μs		> 10 operations
	1000 A, 10/1000 μs		> 400 operations
Alternating Discharge Current	130 Arms, 11 cycles[3]		1 operation minimum
	20 Arms, 1 s		> 10 operations
Operating Temperature			- 55 to +85 °C

Optional Switch-Grade Failsafe device available.

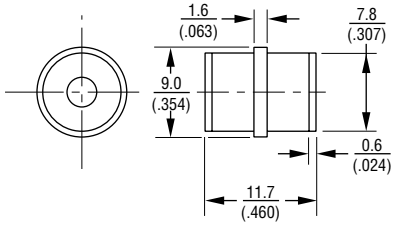
Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: 26-xxx V.
- The rated discharge current for TRIGARD® Gas Discharge Tubes is the total current equally divided between each line to ground.
- Sparkover limits after life ±25 %, IR >10^8Ω (-25 %,+30 % for Model 2026-07, 2026-09 and 2026-60).

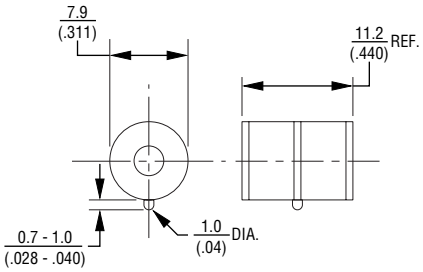
[1] Tube meets BT requirement Type 14 A/1 (210-310 V).
[2] Network applied.
[3] DC Sparkover may exceed ±25 % after discharge, but will continue to protect without venting.

Product Dimensions

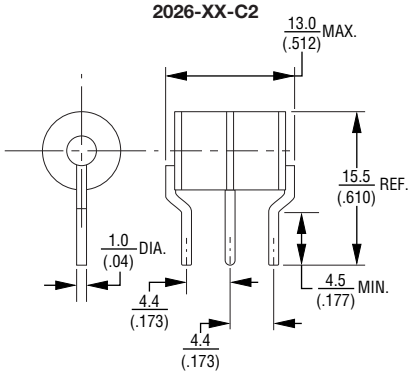
2026-XX-A



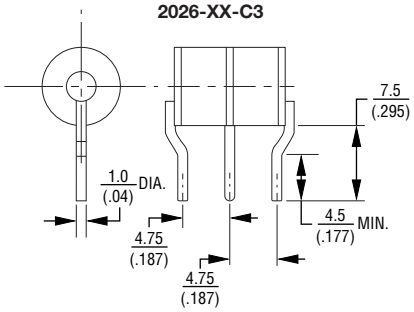
2026-XX-A1



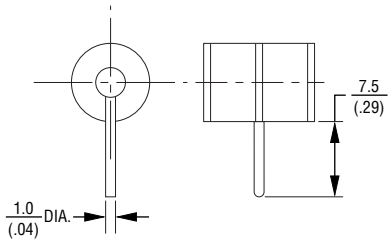
2026-XX-C2



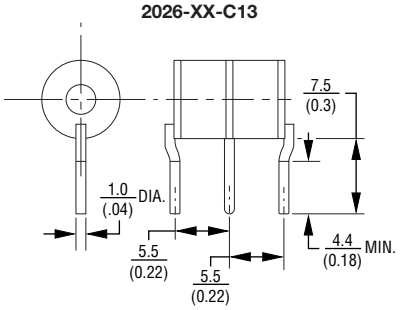
2026-XX-C3



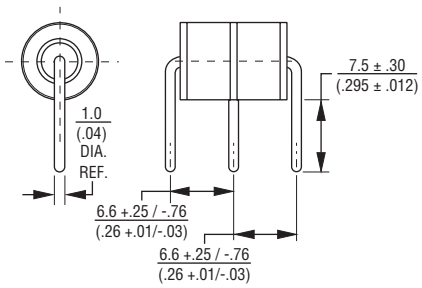
2026-XX-C8



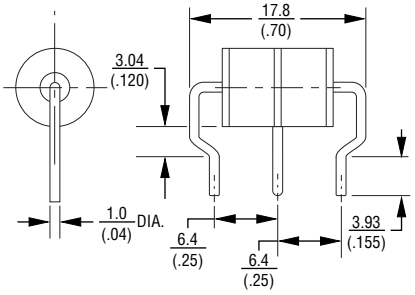
2026-XX-C13



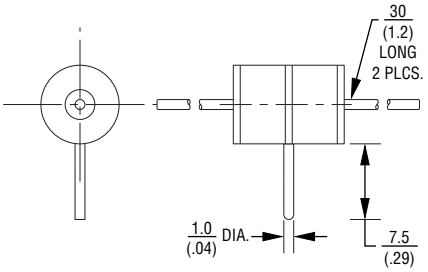
2026-XX-C14



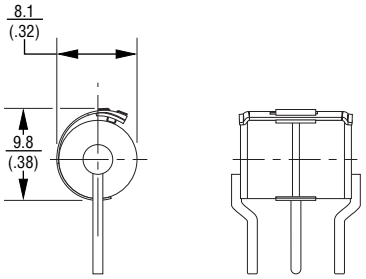
2026-XX-C18



2026-XX-C — 1.0mm (0.040 in.) dia. lead wire
2026-XX-CB — 0.8mm (0.032 in.) dia. lead wire

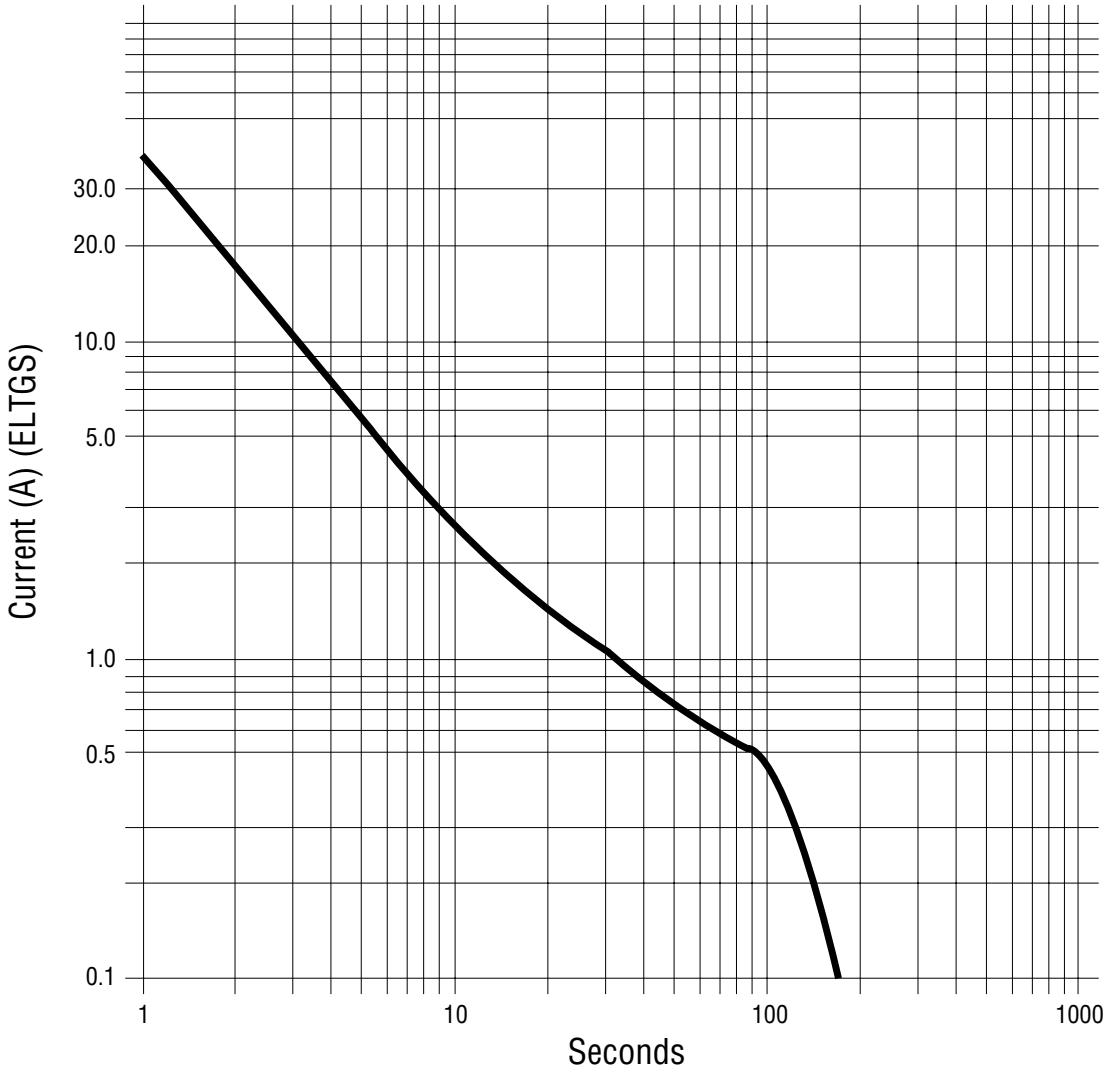


FAILSAFE CONFIGURATION
2026-XX-C2F SHOWN



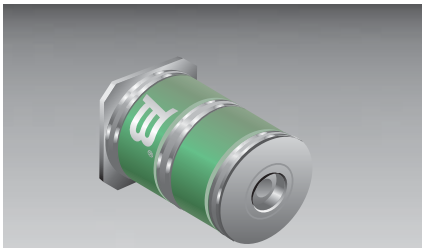
DIMENSIONS = MILLIMETERS / (INCHES)

Switch-Grade Failsafe Device Shorting Curve 2026-XX-XF



ELTGS = Each Line to Ground Simultaneously

NOTE: When using a GDT failsafe device, it is imperative that all components associated and connected to the GDT with failsafe be tested in their respective completely integrated environment (finished product) to assure desired operation.



BOURNS®

Features

- Balanced Mini-TRIGARD™ Series (5 mm diameter, 7.5 mm length)
- Ideal for board level protection of broadband circuits
- Leadless, surface mount for economical assembly
- High surge current rating, low insertion loss
- Stable breakdown throughout life
- UL listed

2036-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns now offers a surface mount (SM) 3-electrode Gas Discharge Tube (GDT) surge protection device. The industry-leading quality and features of the Bourns® miniature 2036 TRIGARD™ series GDT continues in this new SM version for "pick and place" manufacturing techniques. The 2036 SM device is ideal for board level protection of high bandwidth applications such as xDSL, cable broadband and high speed Ethernet, due to its high energy handling capability, long and stable life performance and low capacitance of less than 2 pF. Bourns subminiature family of GDTs measure only 5 mm in diameter and are the smallest high performance GDTs in the telecom industry. Bourns® GDTs are designed to prevent damage from transient disturbances by acting as a "crowbar" in creating a short-to-ground circuit during conduction. When a voltage transient surge exceeds the defined breakdown voltage level of the GDT, the device becomes ionized and conduction takes place within a fraction of a microsecond. When the surge passes and system voltage returns to normal levels, the GDT returns to its high-impedance (off) state.

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.					
	2036-07	2036-09	2036-15	2036-20	2036-23	2036-25
DC Sparkover ±20 % @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V
Impulse Sparkover, 100 V/µs	250 V	250 V	350 V	425 V	450 V	475 V
1000 V/µs	525 V	550 V	500 V	575 V	600 V	625 V

Characteristic	Model No.					
	2036-30	2036-35	2036-40	2036-42	2036-47	2036-60
DC Sparkover ±20 % @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover, 100 V/µs	500 V	600 V	650 V	675 V	750 V	850 V
1000 V/µs	650 V	750 V	825 V	850 V	950 V	1100 V

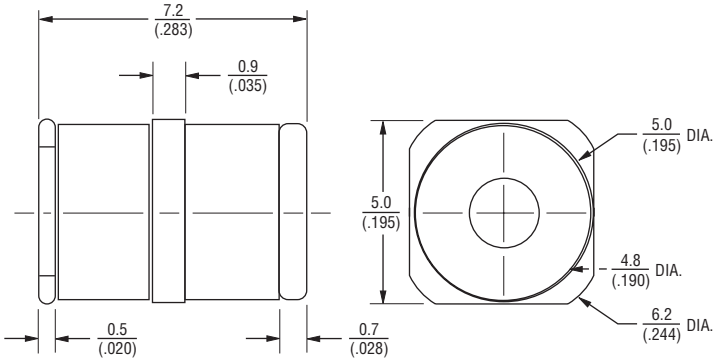
Impulse Transverse Delay	100 V/µs		< 75 ns
Insulation Resistance (IR)	100 V (50 V for Model 2036-07 & 2036-09)		> 10^{10} Ω
Glow Voltage	10 mA		~ 70 V
Arc Voltage	1 A		~ 10 V
Glow-Arc Transition Current			< 0.5 A
Capacitance	1 MHz		< 2 pF
DC Holdover Voltage[1]	>135 V, (52 V for Model 2036-07, & -09, 80 V for Model 2036-15)		< 150 ms
Impulse Discharge Current	20000 A, 8/20 µs[2]		1 operation minimum
	10000 A, 8/20 µs		> 10 operations
	200 A, 10/1000 µs		> 300 operations
	200 A, 10/700 µs		> 500 operations
Alternating Discharge Current	20 Arms, 1 s[2]		1 operation minimum
	10 Arms, 1 s		> 10 operations
Operating Temperature			- 55 to +85 °C

Notes:
UL recognized component, UL File E153537
The rated discharge current for Mini-TRIGARD™ GDTs is the total current equally divided between each line to ground.
Sparkover limits after life ±25 % (-25 %,+30 % for Model 2036-07, 2036-09 and 2036-60), IR >10^8Ω .
Operating characteristics per RUS PE-80 and Telcordia GR 1361 available on request.

[1] Network applied.
[2] DC Sparkover may exceed ±25 % but will continue to protect without venting.

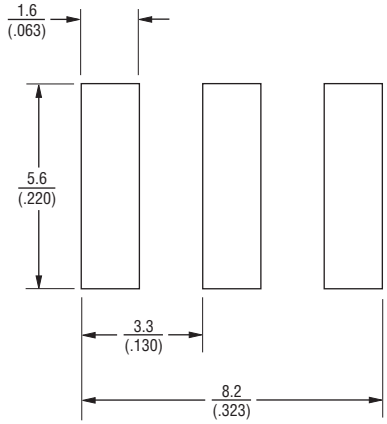
2036-xx-SM Precision Gas Discharge Tube Surge Protector

Product Dimensions



DIMENSIONS: MILLIMETERS / (INCHES)

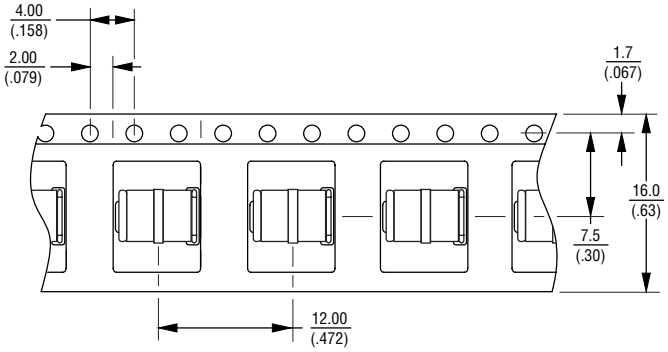
Recommended Pad Layout



Packaging Specifications

The Model 2036-xx-SM ships standard bulk pack, 100 pieces per bag.

The optional reelpack (-RP) contains 1,000 pieces per reel. Reel is 13 " in diameter and 3/4 " wide.



How To Order

2036 - xx - SM - RP

Model Number Designator

Voltage (divided by 10)

Surface Mount

Packaging Options

Blank = Bulk Packaging (Standard)
RP = Reelpack (Optional)

Reliable Electronic Solutions

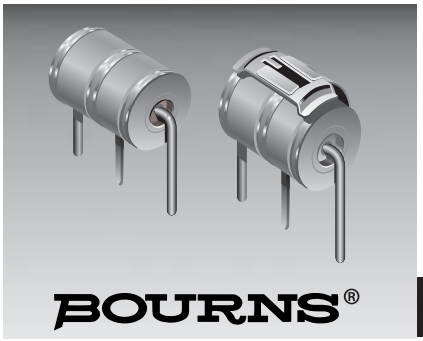
Asia-Pacific:
TEL +886- (0)2 25624117 • FAX +886- (0)2 25624116

Europe:
TEL +41-41 7685555 • FAX +41-41 7685510

North America:
TEL +1-951 781-5500 • FAX +1-941 781-5700

www.bourns.com

REV. C 09/04



BOURNS®

Features

- Balanced Mini-TRIGARD™
- 5 mm diameter, 7.5 mm long
- UL recognized

Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Consumer electronics
- Automotive, aircraft, military electronics

2036 Series - Miniature 3-Pole Gas Discharge Tube

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.					
	2036-07	2036-09	2036-15	2036-20	2036-23	2036-25
DC Sparkover ± 20 % @ 100 V/s	75 V	90 V	150 V	200 V	230 V	250 V
Impulse Sparkover						
100 V/μs	250 V	250 V	350 V	425 V	450 V	475 V
1000 V/μs	525 V	550 V	500 V	575 V	600 V	625 V

	Model No.					
	2036-30	2036-35	2036-40	2036-42	2036-47	2036-60
DC Sparkover ±20 % @ 100 V/s	300 V	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover						
100 V/μs	500 V	600 V	650 V	675 V	750 V	850 V
1000 V/μs	650 V	750 V	825 V	850 V	950 V	1100 V

Impulse Transverse Delay	100 V/μs	< 75 ns	
Insulation Resistance (IR)	100 V (50 V for Model 2036–07 & 2036-09)	> $10^{10}\Omega$	
Glow Voltage	10 mA	~ 70 V	
Arc Voltage	1 A	~ 10 V	
Glow-Arc Transition Current		< 0.5 A	
Capacitance	1 MHz	< 2 pF	
DC Holdover Voltage[1]	135 V, (52 V for Model 2036-07 & 2036-09, 80 V for Model 2036-15)	< 150 ms	
Impulse Discharge Current	20000 A, 8/20 μs[2]	1 operation min	
	10000 A, 8/20 μs	> 10 operations	
	200 A, 10/1000 μs	> 300 operations	
	200 A, 10/700 μs	> 500 operations	
Alternating Discharge Current	20 Arms, 1 s[2]	1 operation min	
	10 Arms, 1 s	> 10 operations	
Operating Temperature		-55 to +85°C	

Optional Switch-Grade Failsafe device available.

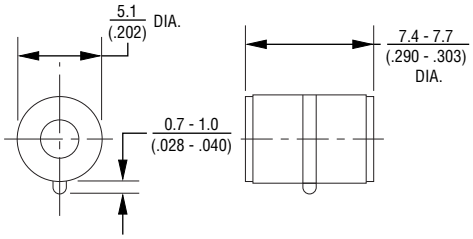
Notes:

- **UL recognized components, UL File E153537.**
- Model number marking on tube: xxxV.
- The rated discharge current for Mini-TRIGARD™ Gas Discharge Tubes is the total current equally divided between each line to ground.
- Sparkover limits after life ±25 %, IR>$10^8\Omega$ (-25 %, +30 % for Model 2036-07, 2036-09 and 2036-60).
- Operating characteristics per RUS PE-80 and Telcordia GR 1361 available, contact factory.

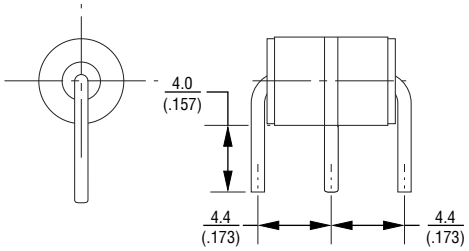
[1] Network applied.
[2] DC Sparkover may exceed ±25 % but will continue to protect without venting.

Product Dimensions

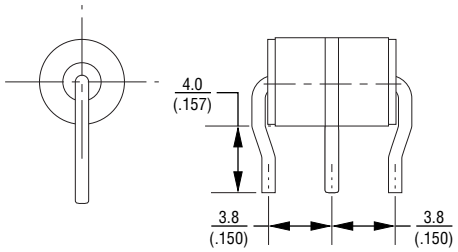
2036-XX-A



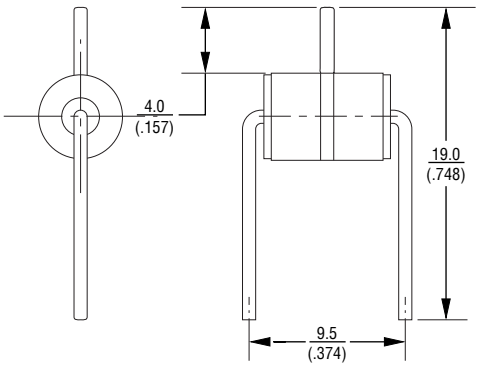
2036-XX-B2 — 0.8 mm (0.032 in.) dia. lead wire
2036-XX-C2 — 1.0 mm (0.040 in.) dia. lead wire*



2036-XX-B3 — 0.8 mm (0.032 in.) dia. lead wire
2036-XX-C3 — 1.0 mm (0.040 in.) dia. lead wire*

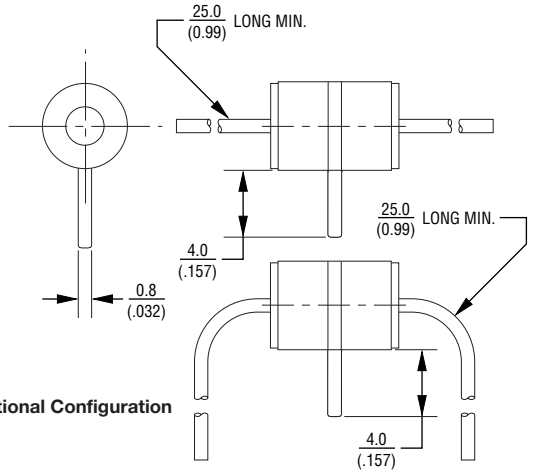


2036-XX-B9 — 0.8 mm (0.032 in.) dia. lead wire
2036-XX-C9 — 1.0 mm (0.040 in.) dia. lead wire*



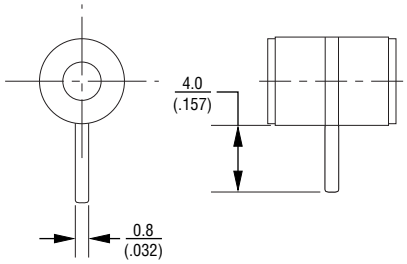
*Center Electrode Lead: See Center Lead C-Configuration detail.

2036-XX-B — 0.8 mm (0.032 in.) dia. lead wire
2036-XX-C — 1.0 mm (0.040 in.) dia. lead wire*

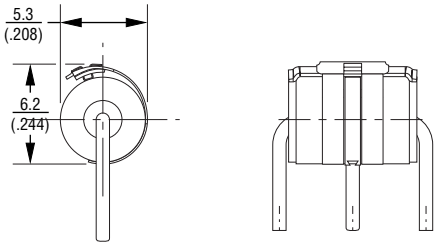


Optional Configuration

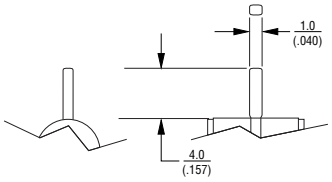
2036-XX-B8 — 0.8 mm (0.032 in.) dia. lead wire
2036-XX-C8 — 1.0 mm (0.040 in.) dia. lead wire*



FAILSAFE CONFIGURATION
2036-XX-B2F SHOWN

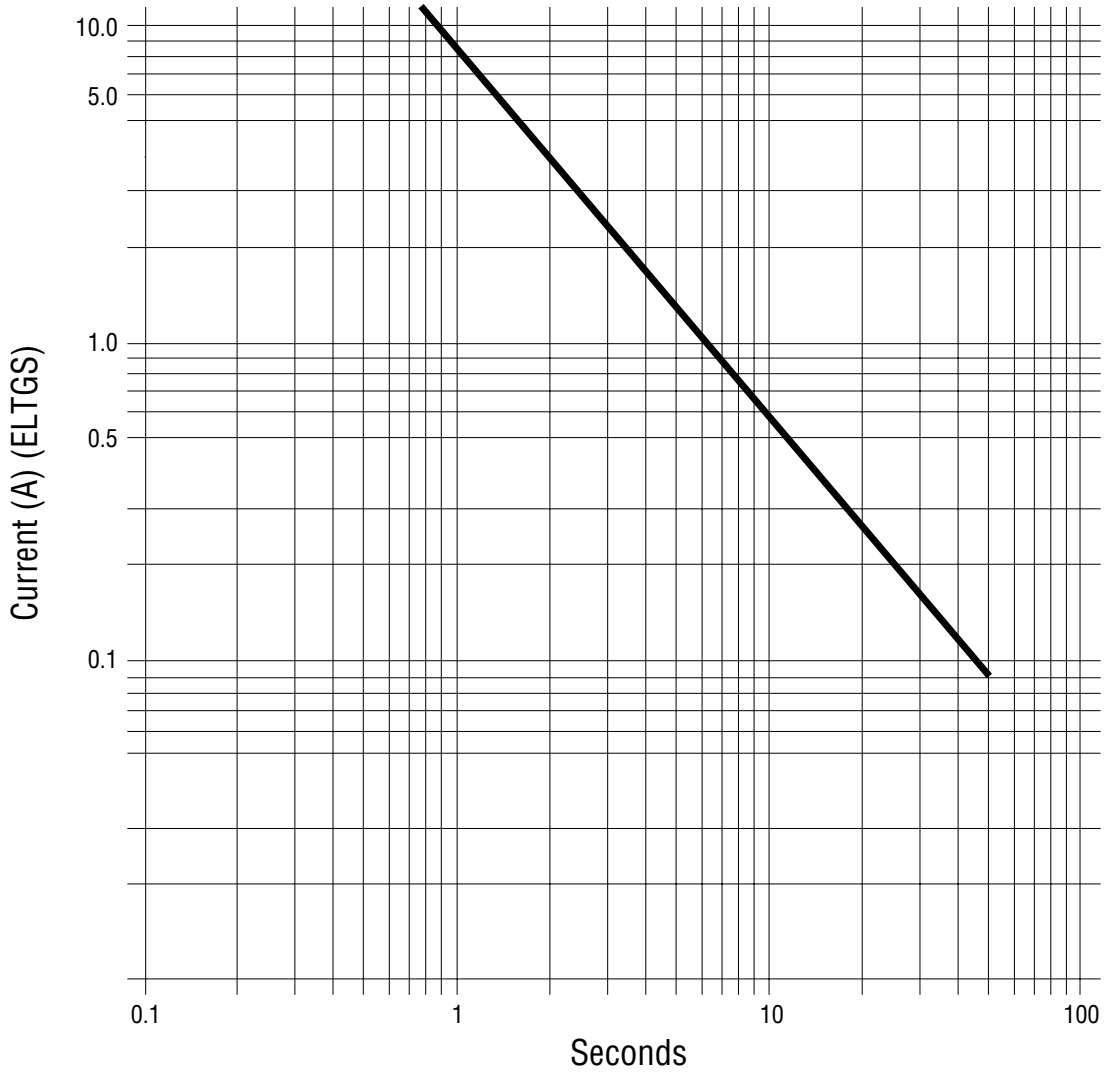


CENTER ELECTRODE LEAD: C-CONFIGURATION



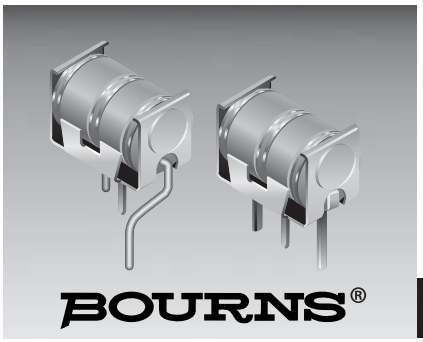
DIMENSIONS = MILLIMETERS / (INCHES)

Switch-Grade Failsafe Device Shorting Curve 2036-XX-XF



ELTGS = Each Line to Ground Simultaneously

NOTE: When using a GDT failsafe device, it is imperative that all components associated and connected to the GDT with failsafe be tested in their respective completely integrated environment (finished product) to assure proper operation.



BOURNS®

Features

- Patent #6,327,129
- Board Mount
- 230 V, 250 V, 330 V surge protector
- UL recognized
- Economical, reliable choice for all paired copper communications circuits
- Solid-state responsiveness combined with robust GDT

Applications

- Telecommunications
- High speed data networks
- Hybrid fiber-coax networks
- Broadband powered networks

MSP® Series - Multi-Stage Protector Sub-Assembly

Bourns® MSP® Series is a new generation of telecommunications protector designed to be the best all-around protection choice on both today and tomorrow's copper pair based communications circuits. It combines the strengths of gas tube and solid-state protectors while eliminating their weaknesses. Bourns® MSP® protector series is the synergistic integration of three advanced protection technologies; sixth generation gas tube, precision matched MOVs, and switch-grade fail-short. Working together, these three technologies meet the challenges of the evolving high-speed network.

Bourns® MSP® Series can be used universally on POTS, ISDN, ADSL, SDSL, HDSL, RADSL, VDSL, 10BaseT, and T1 carrier. Bourns® MSP® Series is the most economical, reliable, and best performing choice for all paired copper communications circuits.

Characteristics

Test Methods per IEEE C62.31, UL 497, CSA C22.2, Telcordia GR 1361and applicable sections of Telcordia GR 974.

Characteristic	Model No.		
	2026-23-CxxM1xx	2026-25-CxxM1xx	2026-33-CxxM1xx
DC Breakdown @ 100-2000 V/s	184 to 276 V	200 to 300 V	300 to 400 V
AC Breakdown @ 60 Hz	184 to 276 V	200 to 300 V	300 to 400 V
Impulse Breakdown 100 V/μs 1000 V/μs	 450 V 500 V	 475 V 525 V	 600 V 650 V

Insulation Resistance	100 Vdc	> 1 GΩ	
Insertion Loss	10 MHz	0.01 dB	
Capacitance Line to Line	1 MHz	10 pF typical	
Capacitance Line to Ground	1 MHz	20 pF typical	
Impulse Reset (DC Extinguishing)	52 V, 260 mA	< 10 ms	
	135 V, 200 mA	< 10 ms[1]	
Impulse Life Characteristics	100 A, 10/1000 μs	> 3000 operations[2]	
	300 A, 10/1000 μs	> 1000 operations[2]	
	500 A, 10/1000 μs	> 1000 operations[3]	
	2000 A, 10/250 μs	> 100 operations[2]	
	5000 A, 20/100 μs	> 10 operations[2]	
	20000 A, 8/20 μs	> 10 operations[2,4]	
AC Life Characteristics	0.5 A rms continuous	> 30 seconds	
	1 A rms, 1 second, 600 ft. cable	> 60 operations	
	1 A rms, 1 second, 1 mile cable	> 60 operations	
	10 A rms, 1 second	> 20 operations	
	65 A rms, 11 cycles	> 1 operation[3]	
	120 A rms, 0.1 second	1 operation	
Life Test Criteria	Insulation Resistance Throughout the Life Test	100 MΩ	
	Life Test Failures	0.0 %	
	Failures During Environmental Cycling w/Surges	0.0 %	
Fail-Short (vented or non-vented gas tube)	> 30 A rms, simultaneously		
Operating Temperature	-55 to +85 °C		

Notes:

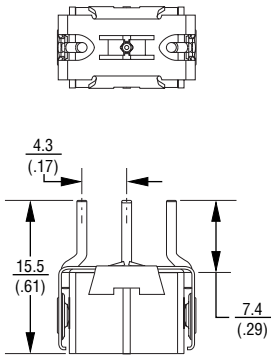
- **UL, cUL Listed.**

1 Surpasses Telcordia GR 974 (network applied).
2 Exceeds Telcordia GR 1361.
3 RUS (REA) PE-80.
4 Total current equally divided between each line to ground.

MSP® Series - Multi-Stage Protector Sub-Assembly BOURNS®

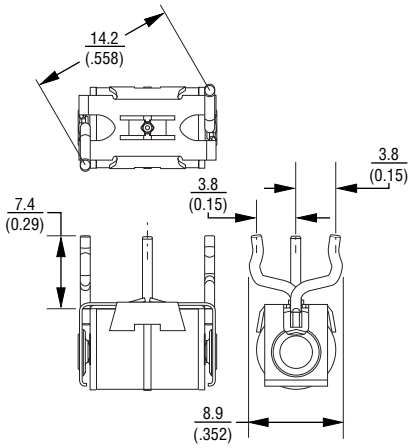
How To Order / Product Dimensions

2026-xx-C2M1xx



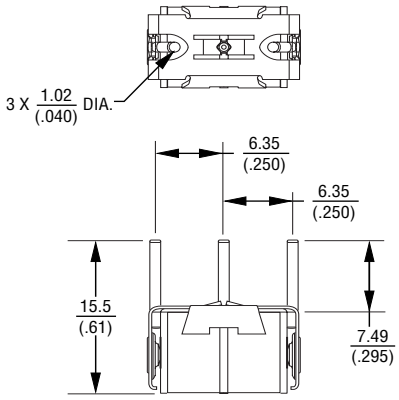
2026-23-C2M136
2026-25-C2M136
2026-33-C2M143

2026-xx-C16M1xx



2026-23-C16M136
2026-25-C16M136
2026-33-C16M143

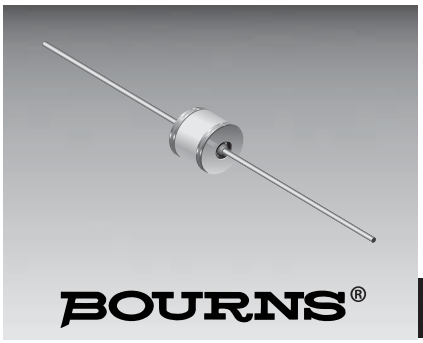
2026-xx-C4M1xx



2026-23-C4M136
2026-25-C4M136
2026-33-C4M143

DIMENSIONS = MILLIMETERS / (INCHES)

Contact factory for custom configurations.



BOURNS®

Features

- 8 mm diameter, 6 mm long
- UL recognized
- Custom configurations available
- High surge current rating
- Stable breakdown throughout life

Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Consumer electronics
- Automotive, aircraft, military electronics

2027 Series - 2-Pole Gas Discharge Tube

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31, RUS PE-80, Telcordia GR 1361

Characteristic	Model No.					
	2027-09	2027-15	2027-20	2027-23	2027-25	2027-30
DC Sparkover ±15 % (±20 % for Model 2027-09) @ 100 V/s	90 V	150 V	200 V	230 V	250 V	300 V
Impulse Sparkover 100 V/μs 1000 V/μs	 300 V 500 V	 350 V 575 V	 400 V 600 V	 450 V 675 V	 475 V 700 V	 550 V 800 V

Characteristic	Model No.				
	2027-35	2027-40	2027-42	2027-47	2027-60
DC Sparkover ±15 % @ 100 V/s	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover 100 V/μs 1000 V/μs	 600 V 875 V	 650 V 925 V	 675 V 950 V	 725 V 1000 V	 850 V 1100 V

Insulation Resistance (IR)	100 V (50 V for Model 2027-09)		> 10^{10} Ω
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[1]	135 V (52 V for Model 2027-09, 80 V for Model 2027-15)		< 150 ms
Impulse Discharge Current	20000 A, 8/20 μs[2]		1 operation minimum
	10000 A, 8/20 μs		> 10 operations
	500 A, 10/1000 μs		> 400 operations
	100 A, 10/1000 μs or 10/700 μs		> 1000 operations
Alternating Discharge Current	65 Arms, 11 cycles[2]		1 operation minimum
	10 Arms, 1 s		> 10 operations
Operating Temperature			-55 to +85 °C

Notes:

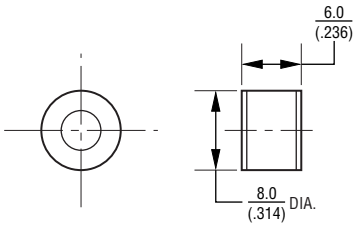
- **UL recognized component, UL File E153537.**
- Model number marking on tube: 27-xxxV.
- Sparkover limits ±20 % after life, IR >10^8 Ω (-25 %,+30 % for Model 2027–09 and 2027–60).

[1] Network applied.

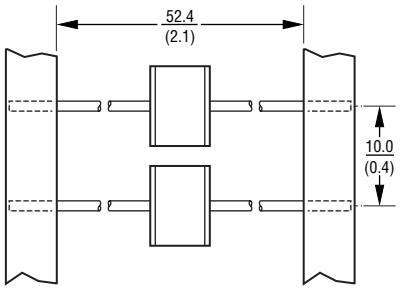
[2] DC Sparkover may exceed ±20 % but will continue to protect without venting.

Product Dimensions

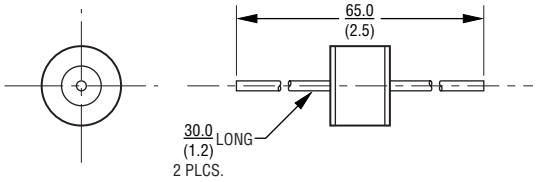
2027-XX-A



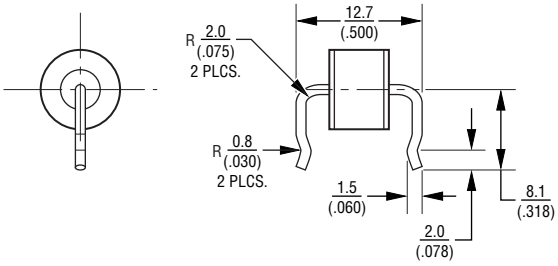
2027-XX-BT1 — 0.8 mm (0.032 in.) dia. lead wire



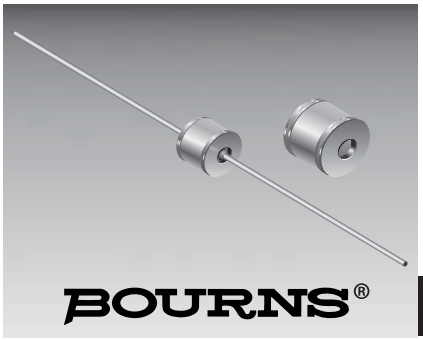
2027-XX-B — 0.8 mm (0.032 in.) dia. lead wire
2027-XX-C — 1.0 mm (0.040 in.) dia. lead wire



2027-XX-B10 — 0.8 mm (0.032 in.) dia. lead wire
2027-XX-C10 — 1.0 mm (0.040 in.) dia. lead wire



DIMENSIONS = MILLIMETERS / (INCHES)



Features

- 5 mm diameter, 4 mm long (2035 series)
- 5 mm diameter, 5 mm long (2037 series)
- UL recognized
- High surge current rating
- Stable breakdown throughout life

Applications

- Telecommunications
- Industrial electronics
- Commercial electronics
- Consumer electronics
- Automotive, aircraft, military electronics

BOURNS®

2035/2037 Series - Miniature 2-Pole Gas Discharge Tube

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.					
	2035/2037-09	2035/2037-15	2035/2037-20	2035/2037-23	2035/2037-25	2035/2037-30
DC Sparkover ±15 % (±20 % for Model 2035/2037-09) @ 100 V/s	90 V	150 V	200 V	230 V	250 V	300 V
Impulse Sparkover 100 V/μs 1000 V/μs	 300 V 550 V	 350 V 550 V	 425 V 575 V	 450 V 600 V	 475 V 625 V	 525 V 650 V

	Model No.				
	2035/2037-35	2035/2037-40	2035/2037-42	2035/2037-47	2035/2037-60
DC Sparkover ±15 % (±20 % for Models 2035/2037-09) @ 100 V/s	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover 100 V/μs 1000 V/μs	 600 V 750 V	 650 V 800 V	 675 V 850 V	 750 V 950 V	 950 V 1150 V

Insulation Resistance (IR)	100 V (50 V for Models 2035/2037-09)		> 10^{10} Ω
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[1]	135 V, (52 V for Models 2035/2037-09, 80 V for Models 2035/2037-15)		< 150 ms
Impulse Discharge Current	10000 A, 8/20 μs[2]		1 operation min
	5000 A, 8/20 μs		> 10 operations
	100 A, 10/1000 μs		> 300 operations
	100 A, 10/700 μs		> 500 operations
Alternating Discharge Current	20 Arms, 11 cycles[2]		1 operation min
	5 Arms, 1 s		> 10 operations
Operating Temperature			-55 to +85 °C

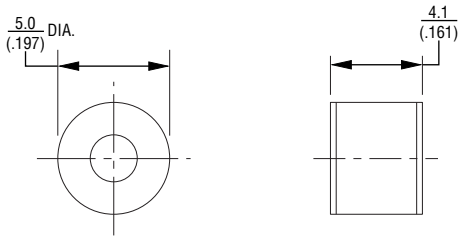
Notes:

- **UL recognized component, UL File E153537.**
- Model number marking on tube: xxxV.
- Sparkover limits after life ±20 % (-25 %, +30 % for Models 2035/2037-09 and 2035/2037-60) , IR>10^8 Ω.
- Other DC sparkover ranges available on request.

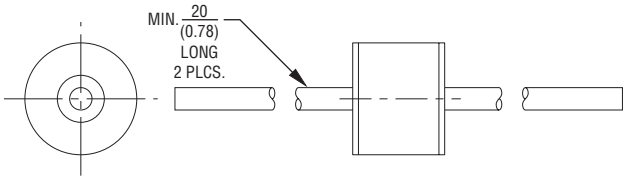
[1] Network applied.
[2] DC Sparkover may exceed ±20 % but will continue to protect without venting.

Product Dimensions

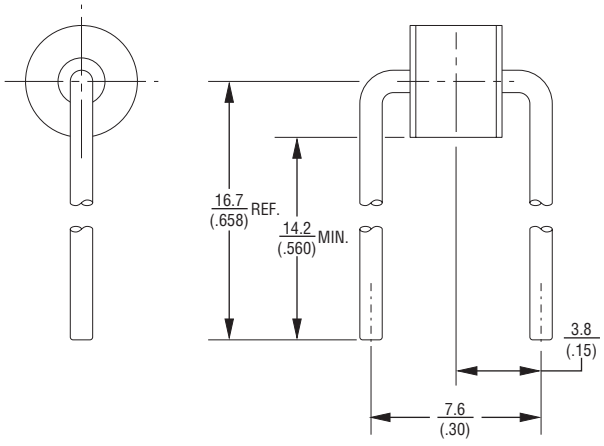
2035-XX-A



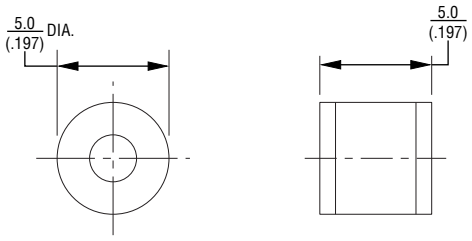
2035-XX-B — 0.8 mm (0.032 in.) dia. lead wire
2035-XX-C — 1.0 mm (0.040 in.) dia. lead wire



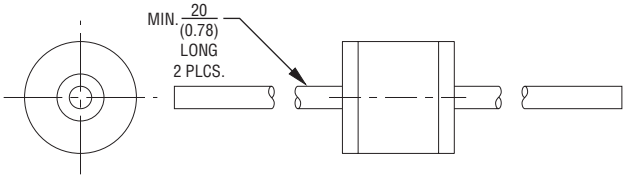
2035-XX-B5 — 0.8 mm (0.032 in.) dia. lead wire
2035-XX-C5 — 1.0 mm (0.040 in.) dia. lead wire



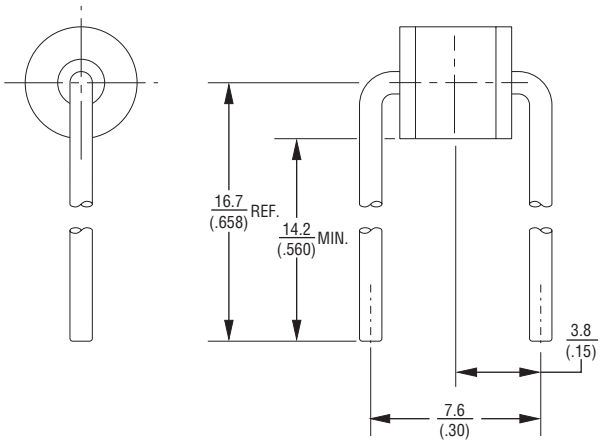
2037-XX-A



2037-XX-B — 0.8 mm (0.032 in.) dia. lead wire
2037-XX-C — 1.0 mm (0.040 in.) dia. lead wire



2037-XX-B5 — 0.8 mm (0.032 in.) dia. lead wire
2037-XX-C5 — 1.0 mm (0.040 in.) dia. lead wire



DIMENSIONS = MILLIMETERS / (INCHES)

REV. 09/04

BOURNS®

Features

- Leadless, surface mount for economical assembly
- Compact mini-size
- High surge current rating
- Low capacitance and insertion loss
- Stable breakdown throughout life
- UL recognition pending

2035-xx-SM Precision Gas Discharge Tube Surge Protector

Bourns now offers a surface mount (SM) 2-electrode GDT surge protection device. The industry-leading quality and features of the Bourns® miniature 2035 Series GDT continue in this new SM version. Compatible with "pick and place" assembly systems, the SM is ideal for high-density applications such as PCBs for telecommunications, commercial and industrial applications.

Characteristics

Test Methods per ITU-T (CCITT) K.12, IEEE C62.31

Characteristic	Model No.					
	2035-09	2035-15	2035-20	2035-23	2035-25	2035-30
DC Sparkover ±15 % @ 100 V/s (±20 % for 2035-09)	90 V	150 V	200 V	230 V	250 V	300 V
Impulse Sparkover, 100 V/µs	350 V	400 V	425 V	450 V	475 V	525 V
1000 V/µs	525 V	550 V	575 V	600 V	625 V	650 V

Characteristic	Model No.				
	2035-35	2035-40	2035-42	2035-47	2035-60
DC Sparkover ±15% @ 100 V/s	350 V	400 V	420 V	470 V	600 V
Impulse Sparkover, 100 V/µs	600 V	650 V	675 V	750 V	950 V
1000 V/µs	750 V	800 V	850 V	950 V	1150 V

Insulation Resistance (IR)	100 V (50 V for Model 2035-09)	> 10^{10} Ω	
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[1]	>135 V, (52 V for Model 2035-09, 80 V for Model 2035-15)	< 150 ms	
Impulse Discharge Current	10000 A, 8/20 µs[2]	1 operation minimum	
	5000 A, 8/20 µs	> 10 operations	
	100 A, 10/1000 µs	> 300 operations	
	100 A, 10/700 µs	> 500 operations	
Alternating Discharge Current	20 Arms, 11 cycles[2]	1 operation minimum	
	5 Arms, 1 s	> 10 operations	
Operating Temperature		- 55 to +85 °C	

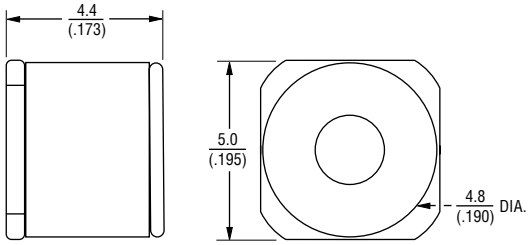
Notes:
Sparkover limits after life ±20 % (-25 %,+30 % for Model 2035-09, 2035-60), IR >10^{8}Ω .

[1] Network applied.
[2] Tube may exceed ±20 % but will continue to protect without venting.

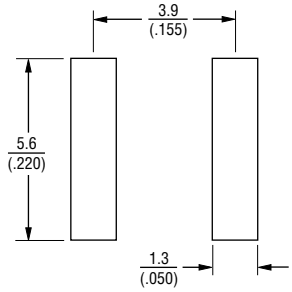
2035-xx-SM Precision Gas Discharge Tube Surge Protector

BOURNS®

Product Dimensions



Recommended Pad Layout

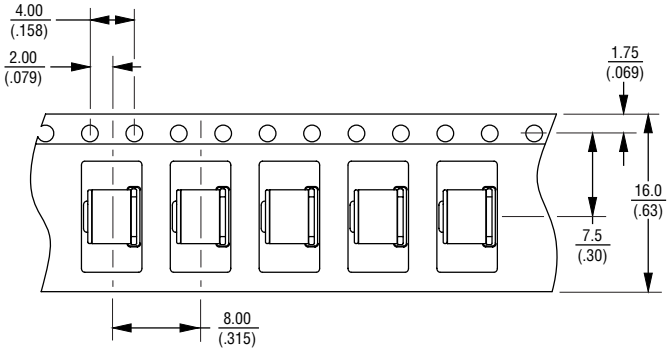


DIMENSIONS: MILLIMETERS / (INCHES)

Packaging Specifications

The Model 2035-xx-SM ships standard bulk pack, 100 pieces per bag.

The optional reelpack (-RP) contains 1,500 pieces per reel. Reel is 13 " in diameter and 3/4 " wide.



How To Order

2035 - xx - SM - RP

Model Number Designator

Voltage

Surface Mount

Packaging Options

Blank = Bulk Packaging (Standard)
RP = Reelpack (Optional)

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