

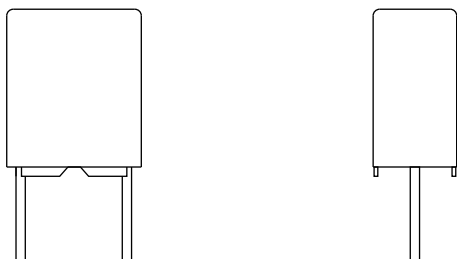


**THE DATASHEET OF
BFC238022104**





AC and Pulse Metallized Polypropylene Film Capacitors MKP Radial Potted Type



FEATURES

- 5 mm pitch
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912



RoHS
COMPLIANT

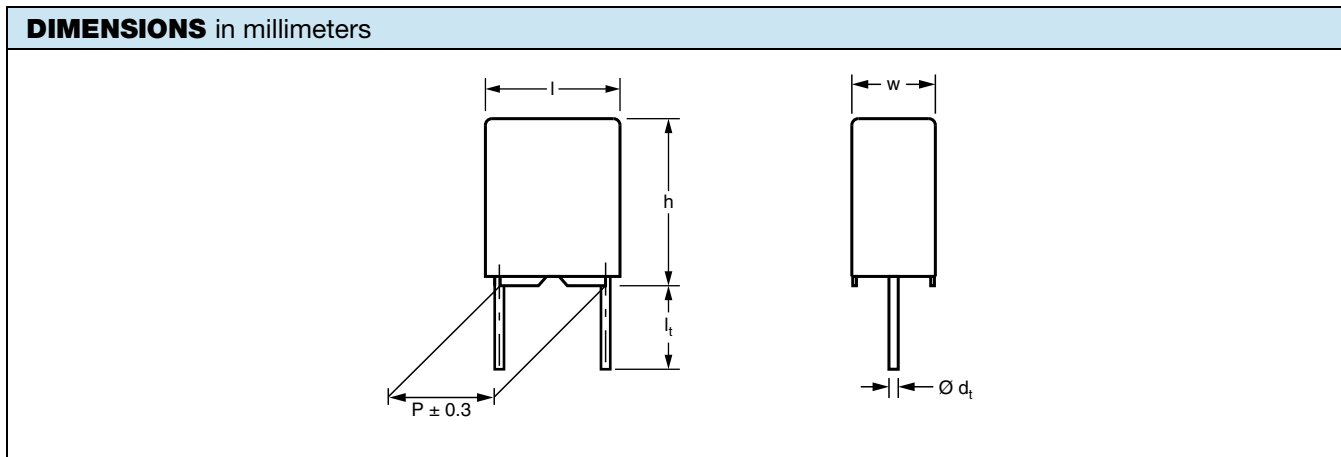
APPLICATIONS

Low losses due to low contact resistance and low loss dielectric make these products suitable for applications where high currents at high frequency occur or high stability is preferred.

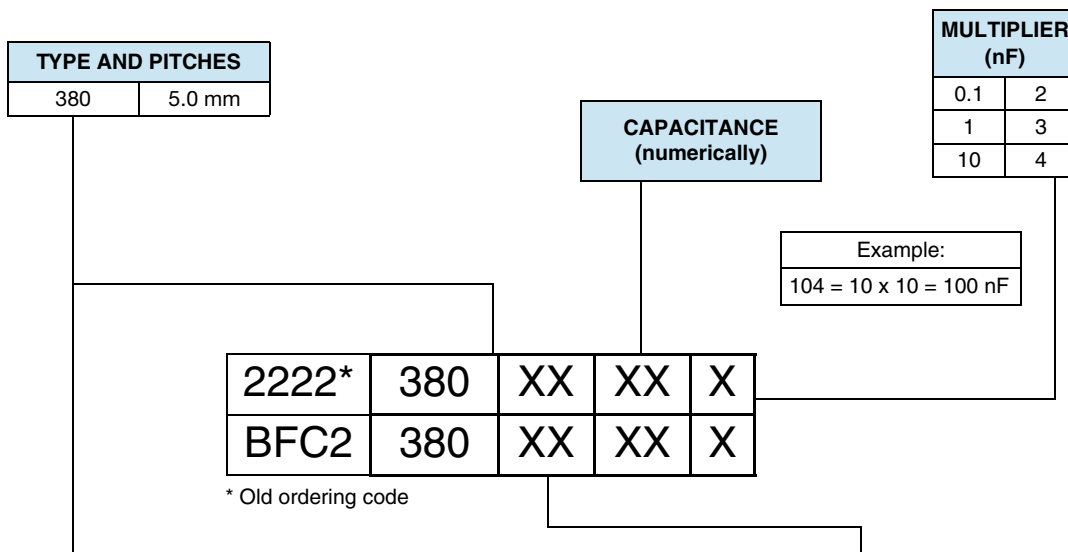
| QUICK REFERENCE DATA | |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Capacitance range (E24 series) | 0.0022 μ F to 0.1 μ F |
| Capacitance tolerance | $\pm 10 \%$, $\pm 5 \%$ |
| Climatic category | 55/085/56 |
| Maximum application temperature | 85 $^{\circ}$ C |
| Reference specifications | IEC 60384-17 |
| Dielectric | Polypropylene film |
| Electrodes | Metallized film |
| Construction | Wound mono construction |
| Encapsulation | Flame retardant plastic case and epoxy resin UL-class 94 V-0 |
| Leads | Tinned wire |
| Marking | C-value; tolerance; rated voltage; manufacturer's type designation; code for dielectric material; manufacturer's emblem; code for factory of origin; year and week of manufacture |
| Rated DC voltage | 100 V _{DC} ; 160 V _{DC} ; 250 V _{DC} ; 400 V _{DC} ; 630 V _{DC} |
| Rated AC voltage | 63 V _{AC} ; 100 V _{AC} ; 160 V _{AC} ; 200 V _{AC} |
| Rated peak-to-peak voltage | 180 V; 280 V; 450 V; 560 V |
| Rated temperature | 85 $^{\circ}$ C |
| Performance grade | Grade 1 (long life) |
| Stability grade | Grade 2 |

Note

- For more detailed data and test requirements contact: dc-film@vishay.com



COMPOSITION OF CATALOG NUMBER



| TYPE | PACKAGING | LEAD CONFIGURATION | PREFERRED TYPES | | | | | |
|------|--------------|-------------------------------------------|-----------------|-------|-------|-------|-------|-------|
| | | | C-TOL. | 100 V | 160 V | 250 V | 400 V | 630 V |
| 380 | Ammopack | H = 18.5 mm; P ₀ = 12.7 mm | ± 10 % | 25 | 35 | 45 | 55 | 65 |
| TYPE | PACKAGING | LEAD CONFIGURATION | ON REQUEST | | | | | |
| 380 | Ammopack | H = 18.5 mm; P ₀ = 12.7 mm | ± 5 % | 26 | 36 | 46 | 56 | 66 |
| | Loose in box | Lead length 4.0 mm + 1.0 mm / - 0.5 mm | ± 10 % | 21 | 31 | 41 | 51 | 61 |
| | | | ± 5 % | 22 | 32 | 42 | 52 | 62 |



| SPECIFIC REFERENCE DATA - 100 V _{DC} | | |
|---------------------------------------------------------------------------------------|-------------------------|-------------------------|
| DESCRIPTION | VALUE | |
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| 0.018 μF ≤ C ≤ 0.027 μF | ≤ 10 × 10 ⁻⁴ | ≤ 15 × 10 ⁻⁴ |
| 0.027 μF < C ≤ 0.075 μF | ≤ 10 × 10 ⁻⁴ | ≤ 20 × 10 ⁻⁴ |
| 0.075 μF < C ≤ 0.1 μF | ≤ 10 × 10 ⁻⁴ | ≤ 25 × 10 ⁻⁴ |
| Rated voltage pulse slope (dU/dt) _R at 100 V (DC) | 80 V/μs | |
| R between leads for C ≤ 1.0 μF at 100 V; 1 min | > 100 000 MΩ | |
| R between interconnected leads and case; 100 V; 1 min | > 100 000 MΩ | |
| Withstanding (DC) voltage (cut off current 10 mA) ⁽¹⁾ ; rise time 1000 V/s | 160 V; 1 min | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 min | |

Note

⁽¹⁾ See "Voltage Proof Test for Metalized Film Capacitors": www.vishay.com/doc?28169

| ELECTRICAL DATA AND ORDERING CODE | | | | | | |
|----------------------------------------------------------------------------------------------------------------|--------------|---------------------------------|----------------------------|---------------------------------------------|------|------------------------------------------------|
| U _{RDC} (V) | CAP. (μF) | DIMENSIONS w x h x l (mm) | MASS ⁽²⁾ (g) | CATALOG NUMBER BFC2 380 AND PACKAGING | | |
| | | | | AMMOPACK ⁽¹⁾ | | LOOSE IN BOX |
| | | | | H = 18.5 mm, P ₀ = 12.7 mm | | l _t = 4.0 mm + 1.0 mm / - 0.5 mm |
| | | | | C-TOL. = ± 10 % | SPQ | SPQ |
| LAST 5 DIGITS OF CATALOG NUMBER | | | | | | |
| PITCH = 5.0 mm ± 0.3 mm; d _t = 0.50 mm ± 0.05 mm; U _{RAC} = 63 V; U _{p-p} = 180 V | | | | | | |
| 100 | 0.018 | 3.5 x 8.0 x 7.2 | 0.30 | 25183 | 1500 | 2000 |
| | 0.020 | | | 25203 | | |
| | 0.022 | | | 25223 | | |
| | 0.024 | | | 25243 | | |
| | 0.027 | | | 25273 | | |
| | 0.030 | | | 25303 | | |
| | 0.033 | 25333 | 1000 | | | |
| | 0.036 | 25363 | | | | |
| | 0.039 | 25393 | | | | |
| | 0.043 | 25433 | | | | |
| | 0.047 | 25473 | | | | |
| | 0.051 | 25513 | | 750 | | |
| | 0.056 | 25563 | | | | |
| | 0.062 | 25623 | | | | |
| 0.068 | 25683 | | | | | |
| 0.075 | 25753 | | | | | |
| 0.082 | 25823 | | | | | |
| 0.091 | 25913 | | | | | |
| 0.100 | 25104 | | | | | |

Notes

- ⁽¹⁾ H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to packaging information
⁽²⁾ Weight for short lead product only
 • SPQ = Standard Packing Quantity



| SPECIFIC REFERENCE DATA - 160 V _{DC} | | |
|---------------------------------------------------------------------------------------|-------------------------|-------------------------|
| DESCRIPTION | VALUE | |
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| 0.013 μF ≤ C ≤ 0.027 μF | ≤ 10 × 10 ⁻⁴ | ≤ 15 × 10 ⁻⁴ |
| 0.027 μF < C ≤ 0.068 μF | ≤ 10 × 10 ⁻⁴ | ≤ 20 × 10 ⁻⁴ |
| Rated voltage pulse slope (dU/dt) _R at 160 V (DC) | 80 V/μs | |
| R between leads for C ≤ 1.0 μF at 100 V; 1 min | > 100 000 MΩ | |
| R between interconnected leads and case; 100 V; 1 min | > 100 000 MΩ | |
| Withstanding (DC) voltage (cut off current 10 mA) ⁽¹⁾ ; rise time 1000 V/s | 256 V; 1 min | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 min | |

Note

⁽¹⁾ See "Voltage Proof Test for Metalized Film Capacitors": www.vishay.com/doc?28169

| ELECTRICAL DATA AND ORDERING CODE | | | | | | |
|-----------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------|----------------------------|---------------------------------------------|------|------------------------------------------------|
| U _{RDC} (V) | CAP. (μF) | DIMENSIONS w x h x l (mm) | MASS ⁽²⁾ (g) | CATALOG NUMBER BFC2 380 AND PACKAGING | | |
| | | | | AMMOPACK ⁽¹⁾ | | LOOSE IN BOX |
| | | | | H = 18.5 mm, P ₀ = 12.7 mm | | I _t = 4.0 mm + 1.0 mm / - 0.5 mm |
| | | | | C-TOL. = ± 10 % | SPQ | SPQ |
| | | | | LAST 5 DIGITS OF CATALOG NUMBER | | |
| PITCH = 5.0 mm ± 0.3 mm; d _t = 0.50 mm ± 0.05 mm; U _{RAC} = 100 V; U _{p-p} = 280 V | | | | | | |
| 160 | 0.013 | 3.5 x 8.0 x 7.2 | 0.30 | 35133 | 1500 | 2000 |
| | 0.015 | | | 35153 | | |
| | 0.016 | | | 35163 | | |
| | 0.018 | | | 35183 | | |
| | 0.020 | | | 35203 | | |
| | 0.022 | | | 35223 | | |
| | 0.024 | | | 35243 | 1000 | |
| | 0.027 | | | 35273 | | |
| | 0.030 | | | 35303 | | |
| | 0.033 | | | 35333 | | |
| | 0.036 | 35363 | 750 | | | |
| | 0.039 | 35393 | | | | |
| | 0.043 | 35433 | | | | |
| | 0.047 | 35473 | | | | |
| 0.051 | 4.5 x 9.0 x 7.2 | 0.42 | 35513 | 750 | 2000 | |
| 0.056 | | | 35563 | | | |
| 0.062 | | | 35623 | | | |
| 0.068 | | | 35683 | | | |

Notes

⁽¹⁾ H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to packaging information

⁽²⁾ Weight for short lead product only

- SPQ = Standard Packing Quantity



| SPECIFIC REFERENCE DATA - 250 V _{DC} | | |
|--------------------------------------------------------------------------------------|--------------------------|--------------------------|
| DESCRIPTION | VALUE | |
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| 0.0091 $\mu\text{F} \leq C \leq 0.027 \mu\text{F}$ | $\leq 10 \times 10^{-4}$ | $\leq 15 \times 10^{-4}$ |
| 0.027 $\mu\text{F} < C \leq 0.043 \mu\text{F}$ | $\leq 10 \times 10^{-4}$ | $\leq 20 \times 10^{-4}$ |
| Rated voltage pulse slope (dU/dt) _R at 250 V (DC) | 90 V/ μs | |
| R between leads for C $\leq 1.0 \mu\text{F}$ at 100 V; 1 min | > 100 000 M Ω | |
| R between interconnected leads and case; 100 V; 1 min | > 100 000 M Ω | |
| Withstanding (DC) voltage (cut off current 10 mA) ⁽¹⁾ ; rise time 100 V/s | 400 V; 1 min | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 min | |

Note

⁽¹⁾ See "Voltage Proof Test for Metalized Film Capacitors": www.vishay.com/doc?28169

| ELECTRICAL DATA AND ORDERING CODE | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|----------------------------|---------------------------------------------|-----------------|------------------------------------------------|
| U _{RDC} (V) | CAP. (μF) | DIMENSIONS w x h x l (mm) | MASS ⁽²⁾ (g) | CATALOG NUMBER BFC2 380 AND PACKAGING | | |
| | | | | AMMOPACK ⁽¹⁾ | | LOOSE IN BOX |
| | | | | H = 18.5 mm, P ₀ = 12.7 mm | | l _t = 4.0 mm + 1.0 mm / - 0.5 mm |
| | | | | C-TOL. = $\pm 10 \%$ | SPQ | SPQ |
| | | | | LAST 5 DIGITS OF CATALOG NUMBER | | |
| PITCH = 5.0 mm \pm 0.3 mm; d _t = 0.50 mm \pm 0.05 mm; U _{RAC} = 160 V; U _{p-p} = 450 V | | | | | | |
| 250 | 0.0091 | 3.5 x 8.0 x 7.2 | 0.30 | 45912 | 1500 | 2000 |
| | 0.010 | | | 45103 | | |
| | 0.011 | | | 45113 | | |
| | 0.012 | | | 45123 | | |
| | 0.013 | | | 45133 | | |
| | 0.015 | | | 45153 | | |
| | 0.016 | | | 45163 | 1000 | 2000 |
| | 0.018 | | | 45183 | | |
| | 0.020 | | | 45203 | | |
| | 0.022 | | | 45223 | | |
| | 0.024 | | | 45243 | | |
| | 0.027 | | | 45273 | | |
| | 0.030 | 45303 | 750 | 2000 | | |
| | 0.033 | 45333 | | | | |
| | 0.036 | 45363 | | | | |
| | 0.039 | 45393 | | | | |
| | 0.043 | 45433 | | | | |
| | | | | | 4.5 x 9.0 x 7.2 | 0.42 |

Notes

⁽¹⁾ H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to packaging information

⁽²⁾ Weight for short lead product only

- SPQ = Standard Packing Quantity



| SPECIFIC REFERENCE DATA - 400 V _{DC} | | |
|--------------------------------------------------------------------------------------|-------------------------|-------------------------|
| DESCRIPTION | VALUE | |
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| 0.0043 μF ≤ C ≤ 0.0091 μF | ≤ 10 × 10 ⁻⁴ | ≤ 15 × 10 ⁻⁴ |
| 0.0091 μF < C ≤ 0.02 μF | ≤ 10 × 10 ⁻⁴ | ≤ 20 × 10 ⁻⁴ |
| Rated voltage pulse slope (dU/dt) _R at 400 V (DC) | 100 V/μs | |
| R between leads for C ≤ 1.0 μF at 100 V; 1 min | > 100 000 MΩ | |
| R between interconnected leads and case; 100 V; 1 min | > 100 000 MΩ | |
| Withstanding (DC) voltage (cut off current 10 mA) ⁽¹⁾ ; rise time 100 V/s | 640 V; 1 min | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 min | |

Note

⁽¹⁾ See "Voltage Proof Test for Metalized Film Capacitors": www.vishay.com/doc?228169

| ELECTRICAL DATA AND ORDERING CODE | | | | | | |
|-----------------------------------------------------------------------------------------------------------------|------------------|---------------------------------|----------------------------|---------------------------------------------|------|------------------------------------------------|
| U _{RDC} (V) | CAP. (μF) | DIMENSIONS w x h x l (mm) | MASS ⁽²⁾ (g) | CATALOG NUMBER BFC2 380 AND PACKAGING | | |
| | | | | AMMOPACK ⁽¹⁾ | | LOOSE IN BOX |
| | | | | H = 18.5 mm, P ₀ = 12.7 mm | | l _t = 4.0 mm + 1.0 mm / - 0.5 mm |
| | | | | C-TOL. = ± 10 % | SPQ | SPQ |
| | | | | LAST 5 DIGITS OF CATALOG NUMBER | | |
| PITCH = 5.0 mm ± 0.3 mm; d _t = 0.50 mm ± 0.05 mm; U _{RAC} = 200 V; U _{p-p} = 560 V | | | | | | |
| 400 | 0.0043 | 3.5 x 8.0 x 7.2 | 0.30 | 55432 | 1500 | 2000 |
| | 0.0047 | | | 55472 | | |
| | 0.0051 | | | 55512 | | |
| | 0.0056 | | | 55562 | | |
| | 0.0062 | | | 55622 | | |
| | 0.0068 | | | 55682 | | |
| | 0.0075 | | | 55752 | | |
| | 0.0082 | | | 55822 | | |
| | 0.0091 | 55912 | 1000 | | | |
| | 0.010 | 55103 | | | | |
| | 0.011 | 55113 | | | | |
| | 0.012 | 55123 | | | | |
| | 0.013 | 4.5 x 9.0 x 7.2 | 0.42 | 55133 | 750 | |
| | 0.015 | | | 55153 | | |
| | 0.016 | | | 55163 | | |
| | 0.018 | | | 55183 | | |
| 0.020 | 6.0 x 11.0 x 7.2 | 0.64 | 55203 | | | |

Notes

⁽¹⁾ H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to packaging information

⁽²⁾ Weight for short lead product only

- SPQ = Standard Packing Quantity



| SPECIFIC REFERENCE DATA - 630 V _{DC} | | |
|---------------------------------------------------------------------------------------|-------------------------|-------------------------|
| DESCRIPTION | VALUE | |
| Tangent of loss angle: | at 10 kHz | at 100 kHz |
| 0.0015 μF ≤ C ≤ 0.0091 μF | ≤ 10 × 10 ⁻⁴ | ≤ 15 × 10 ⁻⁴ |
| 0.0091 μF < C ≤ 0.01 μF | ≤ 10 × 10 ⁻⁴ | ≤ 15 × 10 ⁻⁴ |
| Rated voltage pulse slope (dU/dt) _R at 630 V (DC) | 120 V/μs | |
| R between leads for C ≤ 1.0 μF at 500 V; 1 min | > 100 000 MΩ | |
| R between interconnected leads and case; 500 V; 1 min | > 100 000 MΩ | |
| Withstanding (DC) voltage (cut off current 10 mA) ⁽¹⁾ ; rise time 1000 V/s | 880 V; 1 min | |
| Withstanding (DC) voltage between leads and case | 2840 V; 1 min | |

Note

⁽¹⁾ See "Voltage Proof Test for Metalized Film Capacitors": www.vishay.com/doc?228169

| ELECTRICAL DATA AND ORDERING CODE | | | | | | |
|-----------------------------------------------------------------------------------------------------------|--------------|---------------------------------|----------------------------|---------------------------------------------|------|------------------------------------------------|
| U _{RDC} (V) | CAP. (μF) | DIMENSIONS w x h x l (mm) | MASS ⁽²⁾ (g) | CATALOG NUMBER BFC2 380 AND PACKAGING | | |
| | | | | AMMOPACK ⁽¹⁾ | | LOOSE IN BOX |
| | | | | H = 18.5 mm, P ₀ = 12.7 mm | | I _t = 4.0 mm + 1.0 mm / - 0.5 mm |
| | | | | C-TOL. = ± 10 % | SPQ | SPQ |
| LAST 5 DIGITS OF CATALOG NUMBER | | | | | | |
| PITCH = 5.0 ± 0.3 mm; d _t = 0.50 ± 0.05 mm; U _{RAC} = 200 V; U _{p-p} = 560 V | | | | | | |
| 630 | 0.0022 | 3.5 x 8.0 x 7.2 | 0.30 | 65222 | 1500 | 2000 |
| | 0.0024 | | | 65242 | | |
| | 0.0027 | | | 65272 | | |
| | 0.0030 | | | 65302 | | |
| | 0.0033 | | | 65332 | | |
| | 0.0036 | | | 65362 | | |
| | 0.0039 | | | 65392 | | |
| | 0.0043 | | | 65432 | | |
| | 0.0047 | 65472 | | | | |
| | 0.0051 | 65512 | | | | |
| | 0.0056 | 65562 | | | | |
| | 0.0062 | 4.5 x 9.0 x 7.2 | 0.42 | 65622 | 750 | |
| | 0.0068 | | | 65682 | | |
| | 0.0075 | | | 65752 | | |
| 0.0082 | 65822 | | | | | |
| 0.0091 | 65912 | | | | | |
| 0.010 | 65103 | | | | | |

Notes

⁽¹⁾ H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to packaging information

⁽²⁾ Weight for short lead product only

- SPQ = Standard Packing Quantity



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.


Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View BFC238022104](#) on WIN SOURCE

 [Vishay](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management