

CMF5.0A  
THRU  
CMF170A



**SURFACE MOUNT SILICON  
UNI-DIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS  
200 WATT, 5.0 THRU 170 VOLT**



[www.centrasemi.com](http://www.centrasemi.com)

Specified by  
STAND-OFF VOLTAGE



**SOD-123F CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMF5.0 series of Transient Voltage Suppressors are designed to protect sensitive electronic components from high voltage, high-energy transients. High surge capability, low impedance, low clamping voltage, fast response time and small size make this an excellent choice for industrial/consumer applications, such as cell phones, power supplies and portable devices.

**MARKING CODE: SEE ELECTRICAL CHARACTERISTICS TABLE**

**APPLICATIONS:**

- Digital cameras
- Cell phones and accessories
- Desktop and laptop computers
- PDAs

**FEATURES:**

- Stand-off voltage 5 to 170 Volts
- Very low leakage current
- Low clamping voltage
- 200 Watt peak power dissipation
- Small, high thermal efficiency, SOD-123F flat lead package

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Peak Pulse Power (10/1000 $\mu\text{s}$  Waveform)

ESD Voltage (HBM)

Operating and Storage Junction Temperature

**SYMBOL**

$P_{PP}$  200

$V_{ESD}$  25

$T_J, T_{stg}$  -65 to +150

**UNITS**


W

kV

$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS:** ( $T_J=25^\circ\text{C}$  unless otherwise noted)

| Type    | Reverse Stand-Off Voltage | Breakdown Voltage |       | Test Current | Reverse Leakage Current | Maximum Clamping Voltage | Peak Pulse Current | Marking Code |
|---------|---------------------------|-------------------|-------|--------------|-------------------------|--------------------------|--------------------|--------------|
|         | $V_{RWM}$                 | $V_{BR} @ I_T$    |       | $I_T$        | $I_R @ V_{RWM}$         | $V_C @ I_{PP}$           | $I_{PP}$           |              |
|         | V                         | MIN V             | MAX V | mA           | $\mu\text{A}$           | V                        | A                  |              |
| CMF5.0A | 5.0                       | 6.4               | 7.0   | 10           | 400                     | 9.2                      | 21.7               | CM05A        |
| CMF6.0A | 6.0                       | 6.67              | 7.37  | 10           | 400                     | 10.3                     | 19.4               | CM06A        |
| CMF6.5A | 6.5                       | 7.22              | 7.98  | 10           | 250                     | 11.2                     | 17.9               | CM065        |
| CMF7.0A | 7.0                       | 7.78              | 8.6   | 10           | 100                     | 12                       | 16.7               | CM07A        |
| CMF7.5A | 7.5                       | 8.33              | 9.21  | 1.0          | 50                      | 12.9                     | 15.5               | CM075        |
| CMF8.0A | 8.0                       | 8.89              | 9.83  | 1.0          | 25                      | 13.6                     | 14.7               | CM08A        |
| CMF8.5A | 8.5                       | 9.44              | 10.4  | 1.0          | 10                      | 14.4                     | 13.9               | CM085        |
| CMF9.0A | 9.0                       | 10                | 11.1  | 1.0          | 5.0                     | 15.4                     | 13                 | CM09A        |
| CMF10A  | 10                        | 11.1              | 12.3  | 1.0          | 2.5                     | 17                       | 11.8               | CM10A        |
| CMF11A  | 11                        | 12.2              | 13.5  | 1.0          | 2.5                     | 18.2                     | 11                 | CM11A        |
| CMF12A  | 12                        | 13.3              | 14.7  | 1.0          | 2.5                     | 19.9                     | 10.1               | CM12A        |
| CMF13A  | 13                        | 14.4              | 15.9  | 1.0          | 1.0                     | 21.5                     | 9.3                | CM13A        |
| CMF14A  | 14                        | 15.6              | 17.2  | 1.0          | 1.0                     | 23.2                     | 8.6                | CM14A        |
| CMF15A  | 15                        | 16.7              | 18.5  | 1.0          | 1.0                     | 24.4                     | 8.2                | CM15A        |
| CMF16A  | 16                        | 17.8              | 19.7  | 1.0          | 1.0                     | 26                       | 7.7                | CM16A        |
| CMF17A  | 17                        | 18.9              | 20.9  | 1.0          | 1.0                     | 27.6                     | 7.2                | CM17A        |
| CMF18A  | 18                        | 20                | 22.1  | 1.0          | 1.0                     | 29.2                     | 6.8                | CM18A        |

**CMF5.0A  
THRU  
CMF170A**


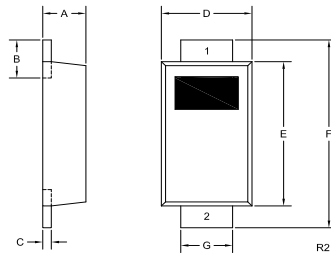
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**ELECTRICAL CHARACTERISTICS - Continued:**

| Type    | Reverse Stand-Off Voltage | Breakdown Voltage |       | Test Current | Reverse Leakage Current | Maximum Clamping Voltage | Peak Pulse Current | Marking Code |
|---------|---------------------------|-------------------|-------|--------------|-------------------------|--------------------------|--------------------|--------------|
|         | $V_{RWM}$                 | $V_{BR} @ I_T$    |       | $I_T$        | $I_R @ V_{RWM}$         | $V_C @ I_{PP}$           | $I_{PP}$           |              |
|         | V                         | MIN V             | MAX V | mA           | $\mu A$                 | V                        | A                  |              |
| CMF20A  | 20                        | 22.2              | 24.5  | 1.0          | 1.0                     | 32.4                     | 6.2                | CM20A        |
| CMF22A  | 22                        | 24.4              | 26.9  | 1.0          | 1.0                     | 35.5                     | 5.6                | CM22A        |
| CMF24A  | 24                        | 26.7              | 29.5  | 1.0          | 1.0                     | 38.9                     | 5.1                | CM24A        |
| CMF26A  | 26                        | 28.9              | 31.9  | 1.0          | 1.0                     | 42.1                     | 4.8                | CM26A        |
| CMF28A  | 28                        | 31.1              | 34.4  | 1.0          | 1.0                     | 45.4                     | 4.4                | CM28A        |
| CMF30A  | 30                        | 33.3              | 36.8  | 1.0          | 1.0                     | 48.4                     | 4.1                | CM30A        |
| CMF33A  | 33                        | 36.7              | 40.6  | 1.0          | 1.0                     | 53.3                     | 3.8                | CM33A        |
| CMF36A  | 36                        | 40                | 44.2  | 1.0          | 1.0                     | 58.1                     | 3.4                | CM36A        |
| CMF40A  | 40                        | 44.4              | 49.1  | 1.0          | 1.0                     | 64.5                     | 3.1                | CM40A        |
| CMF43A  | 43                        | 47.8              | 52.8  | 1.0          | 1.0                     | 69.4                     | 2.9                | CM43A        |
| CMF45A  | 45                        | 50                | 55.3  | 1.0          | 1.0                     | 72.7                     | 2.8                | CM45A        |
| CMF48A  | 48                        | 53.3              | 58.9  | 1.0          | 1.0                     | 77.4                     | 2.6                | CM48A        |
| CMF51A  | 51                        | 56.7              | 62.7  | 1.0          | 1.0                     | 82.4                     | 2.4                | CM51A        |
| CMF54A  | 54                        | 60                | 66.3  | 1.0          | 1.0                     | 87.1                     | 2.3                | CM54A        |
| CMF58A  | 58                        | 64.4              | 71.2  | 1.0          | 1.0                     | 93.6                     | 2.1                | CM58A        |
| CMF60A  | 60                        | 66.7              | 73.7  | 1.0          | 1.0                     | 96.8                     | 1.8                | CM60A        |
| CMF64A  | 64                        | 71.1              | 78.6  | 1.0          | 1.0                     | 103                      | 1.7                | CM64A        |
| CMF70A  | 70                        | 77.8              | 86    | 1.0          | 1.0                     | 113                      | 1.5                | CM70A        |
| CMF75A  | 75                        | 83.3              | 92.1  | 1.0          | 1.0                     | 121                      | 1.4                | CM75A        |
| CMF78A  | 78                        | 86.7              | 95.8  | 1.0          | 1.0                     | 126                      | 1.4                | CM78A        |
| CMF85A  | 85                        | 94.4              | 104   | 1.0          | 1.0                     | 137                      | 1.3                | CM85A        |
| CMF90A  | 90                        | 100               | 111   | 1.0          | 1.0                     | 146                      | 1.2                | CM90A        |
| CMF100A | 100                       | 111               | 123   | 1.0          | 1.0                     | 162                      | 1.1                | CM100        |
| CMF110A | 110                       | 122               | 135   | 1.0          | 1.0                     | 177                      | 1.0                | CM110        |
| CMF120A | 120                       | 133               | 147   | 1.0          | 1.0                     | 193                      | 0.9                | CM120        |
| CMF130A | 130                       | 144               | 159   | 1.0          | 1.0                     | 209                      | 0.8                | CM130        |
| CMF150A | 150                       | 167               | 185   | 1.0          | 1.0                     | 243                      | 0.7                | CM150        |
| CMF160A | 160                       | 178               | 197   | 1.0          | 1.0                     | 259                      | 0.7                | CM160        |
| CMF170A | 170                       | 189               | 209   | 1.0          | 1.0                     | 275                      | 0.6                | CM170        |

**SOD-123F CASE - MECHANICAL OUTLINE**



| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.035      | 0.051 | 0.88        | 1.30 |
| B      | 0.020      | 0.031 | 0.50        | 0.80 |
| C      | 0.004      | 0.008 | 0.10        | 0.20 |
| D      | 0.065      | 0.077 | 1.65        | 1.95 |
| E      | 0.104      | 0.116 | 2.65        | 2.95 |
| F      | 0.140      | 0.156 | 3.55        | 3.95 |
| G      | 0.030      | 0.041 | 0.75        | 1.05 |

SOD-123F (REV:R2)

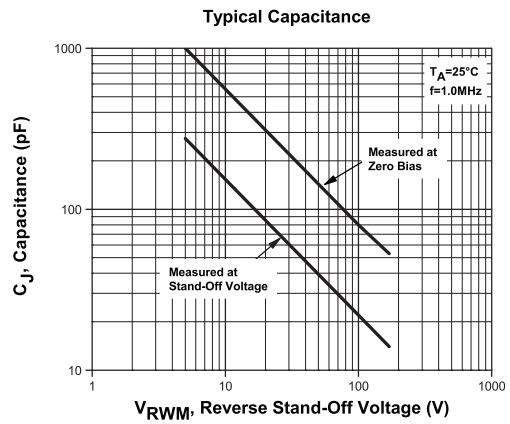
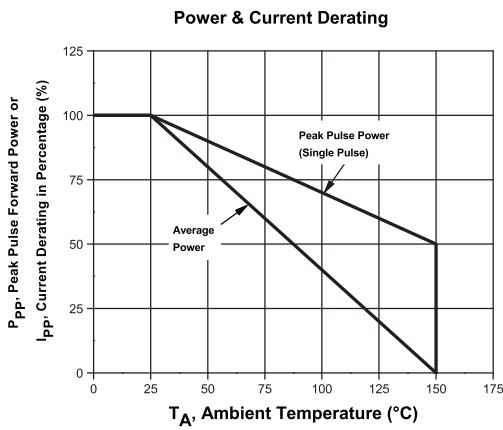
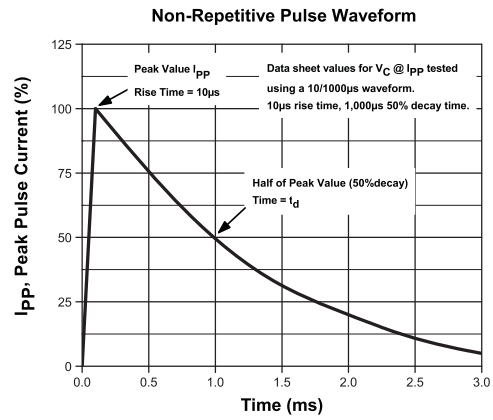
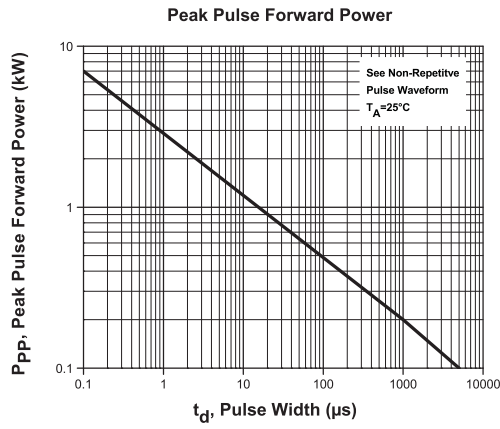
R4 (31-October 2019)

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### TYPICAL ELECTRICAL CHARACTERISTICS



R4 (31-October 2019)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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