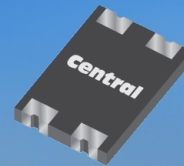


Schottky Bridge Rectifier in the BR DFN package

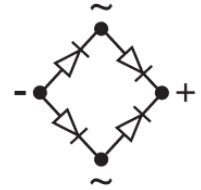


Rethink the PossibilitiesTM

Discretes do MatterTM



New Products – BR DFN Schottky Bridge Rectifiers



| | | | |
|-----------|--------------|----|------|
| 1A | CBRDFSH1-40 | 1A | 40V |
| | CBRDFSH1-60 | 1A | 60V |
| | CBRDFSH1-100 | 1A | 100V |
| 2A | CBRDFSH2-40 | 2A | 40V |
| | CBRDFSH2-60 | 2A | 60V |
| | CBRDFSH2-100 | 2A | 100V |

TR13 = 5,000 per reel in BR DFN package.

New Products – BR DFN Schottky Bridge Rectifiers



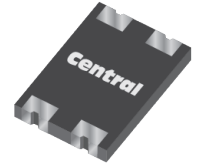
| Central Part No. | Maximum Ratings ($T_A = 25^\circ\text{C}$) | | | Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|------------------|--|------------|-----------------------------|---|-------------|---------|--------------------------|--------------------------|---------|
| | I_O | V_{RRM} | T_J, T_{stg} | V_F | | @ I_F | I_R | | @ V_R |
| | (A) MAX | (V) MAX | ($^\circ\text{C}$) MAX | (mV) TYP | (mV) MAX | (A) | (μA) TYP | (μA) MAX | (V) |
| CBRDFSH1-40 | 1.0 | 40 | -55 to +125 | 490 | 500 | 1.0 | 25 | 200 | 40 |
| CBRDFSH1-60 | 1.0 | 60 | -55 to +125 | 600 | 700 | 1.0 | 25 | 200 | 60 |
| CBRDFSH1-100 | 1.0 | 100 | -55 to +125 | 800 | 850 | 1.0 | 25 | 200 | 100 |
| CBRDFSH2-40 | 2.0 | 40 | -55 to +125 | 490 | 520 | 2.0 | 25 | 200 | 40 |
| CBRDFSH2-60 | 2.0 | 60 | -55 to +125 | 600 | 700 | 2.0 | 25 | 200 | 60 |
| CBRDFSH2-100 | 2.0 | 100 | -55 to +125 | 800 | 850 | 2.0 | 25 | 200 | 100 |
| CBRDFSH3-40* | 3.0 | 40 | -55 to +125 | 530 | 550 | 3.0 | 25 | 200 | 40 |
| CBRDFSH3-60* | 3.0 | 60 | -55 to +125 | 670 | 700 | 3.0 | 25 | 200 | 60 |

* Devices currently under development

Central is in the process of qualifying two 3A devices



New Products – BR DFN Schottky Bridge Rectifiers



Features

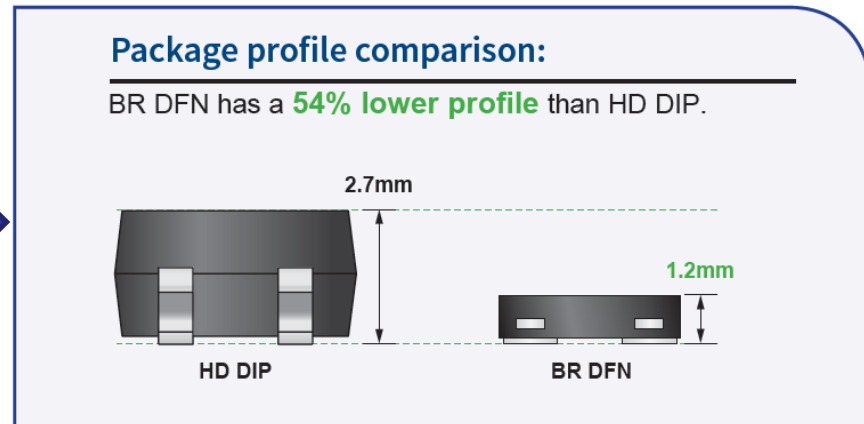
- Low forward voltage (V_F) as low as 500mV
- High current range (1.0A-3.0A)
- Low profile BR DFN package (1.22mm)

Applications

- Power over Ethernet (PoE)
 - Networks
 - Cameras
 - Speakers
 - Point of sale terminals
- Intelligent lighting

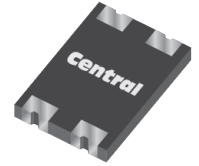
Benefits

- Energy efficiency
- Space savings
- Low profile package
- RoHS and REACH compliant

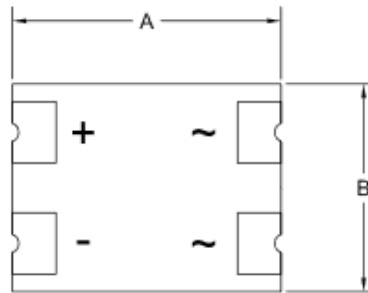


The DFN Schottky bridges are only available with Pb Free plating

New Products – BR DFN Schottky Bridge Rectifiers



BR DFN CASE - MECHANICAL OUTLINE



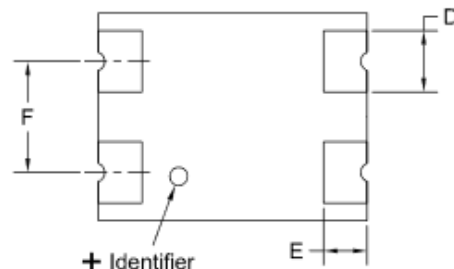
TOP VIEW

| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.238 | 0.246 | 6.05 | 6.25 |
| B | 0.183 | 0.191 | 4.65 | 4.85 |
| C | 0.036 | 0.048 | 0.92 | 1.22 |
| D | 0.053 | 0.057 | 1.35 | 1.45 |
| E | 0.037 | 0.041 | 0.95 | 1.05 |
| F | 0.098 | 0.102 | 2.49 | 2.59 |

BR DFN (REV: R0)

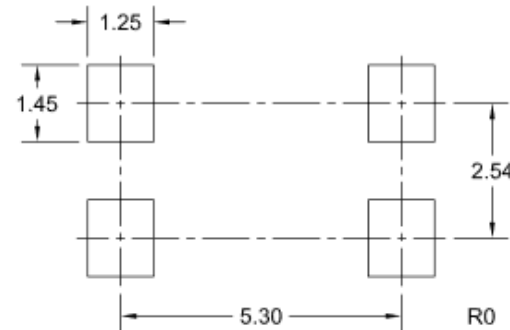


SIDE VIEW

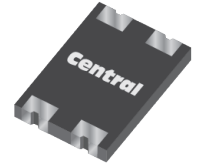


BOTTOM VIEW R0

SUGGESTED MOUNTING PADS
(Dimensions in mm)



New Products – BR DFN Schottky Bridge Rectifiers



Applications

PoE Audio Speakers Topology

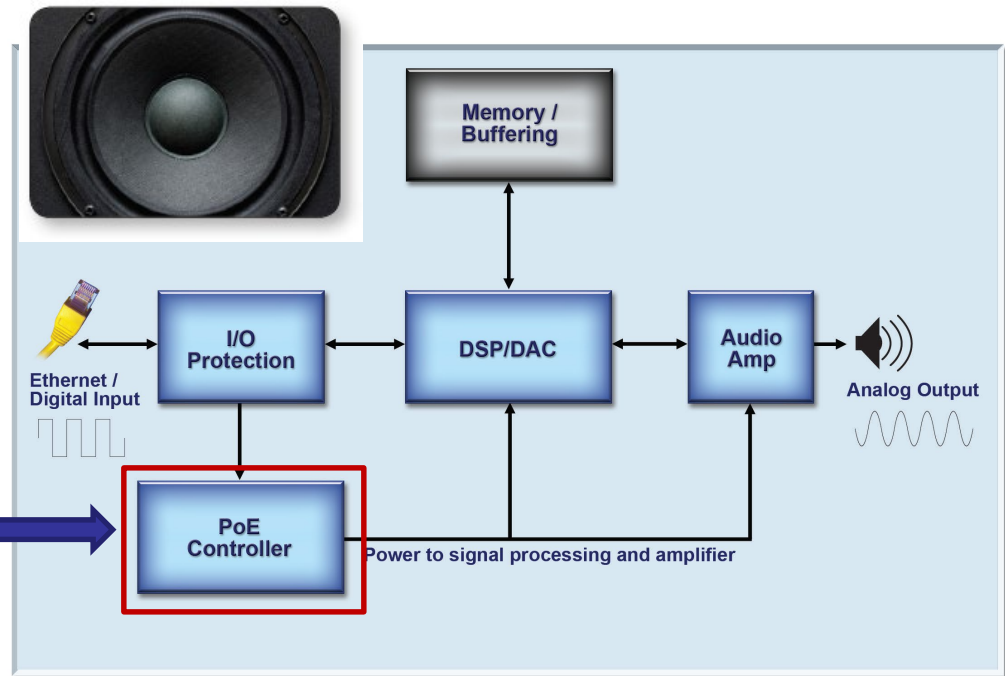
PoE Controller

• Schottky Bridge Rectifiers Full Wave

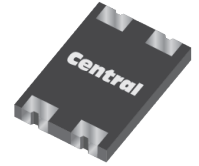


- CBRHDSH1-100: 1A, 100V Schottky Bridge (HD DIP)
- CBRHDSH2-100: 2A, 200V Schottky Bridge (HD DIP)
- CBRLDSH2-100: 2A, 100V Schottky Bridge (LPDIP)

- CBRDFSH1-40: 1.0A, 40V (BR DFN)
- CBRDFSH1-60: 1.0A, 60V (BR DFN)
- CBRDFSH1-100: 1.0A, 100V (BR DFN)
- CBRDFSH2-40: 2.0A, 40V (BR DFN)
- CBRDFSH2-60: 2.0A, 60V (BR DFN)
- CBRDFSH2-100: 2.0A, 100V (BR DFN)
- CBRDFSH3-40: 3.0A, 40V (BR DFN)
- CBRDFSH3-60: 3.0A, 60V (BR DFN)



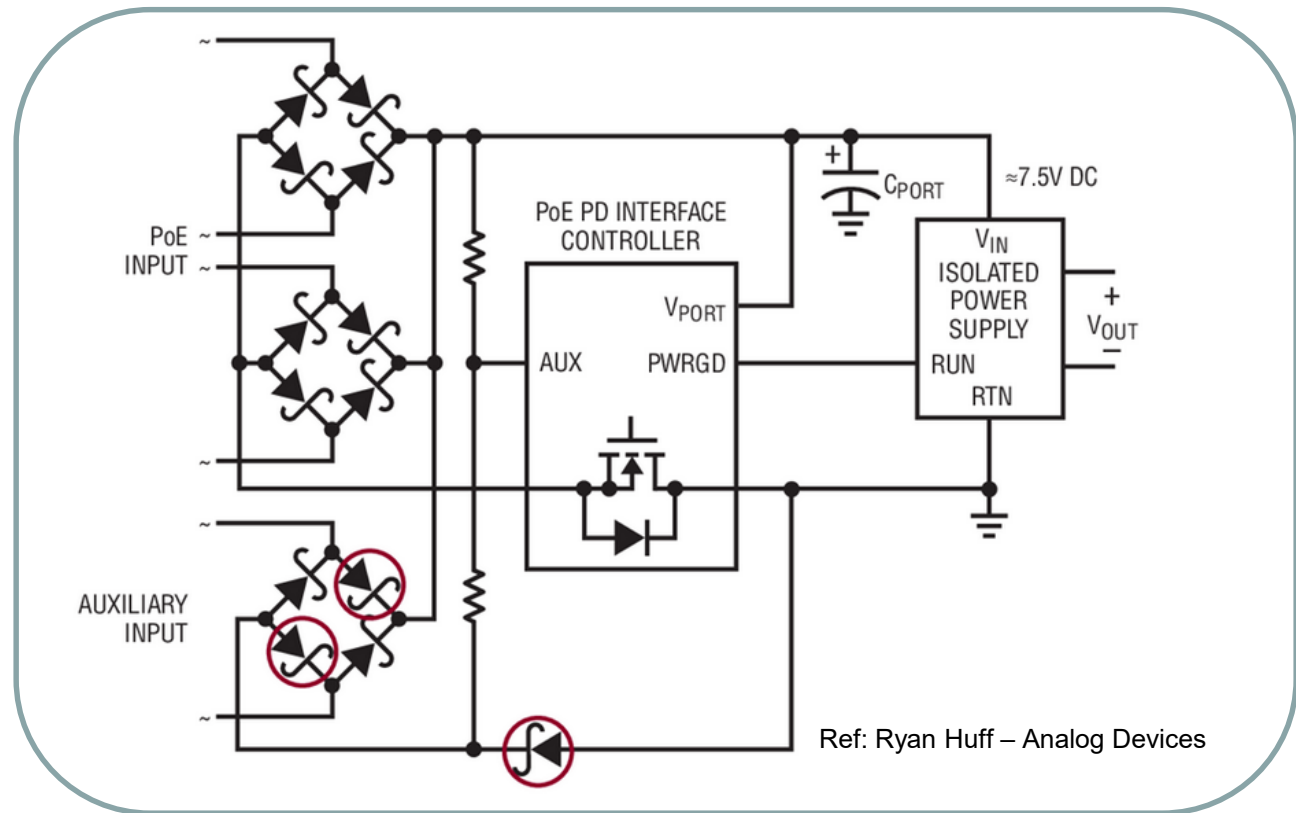
New Products – BR DFN Schottky Bridge Rectifiers



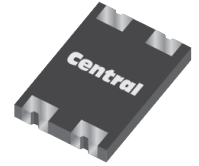
Applications

PoE PD Camera Interface

This application of the Schottky bridge reduces heat dissipation within PoE security cameras



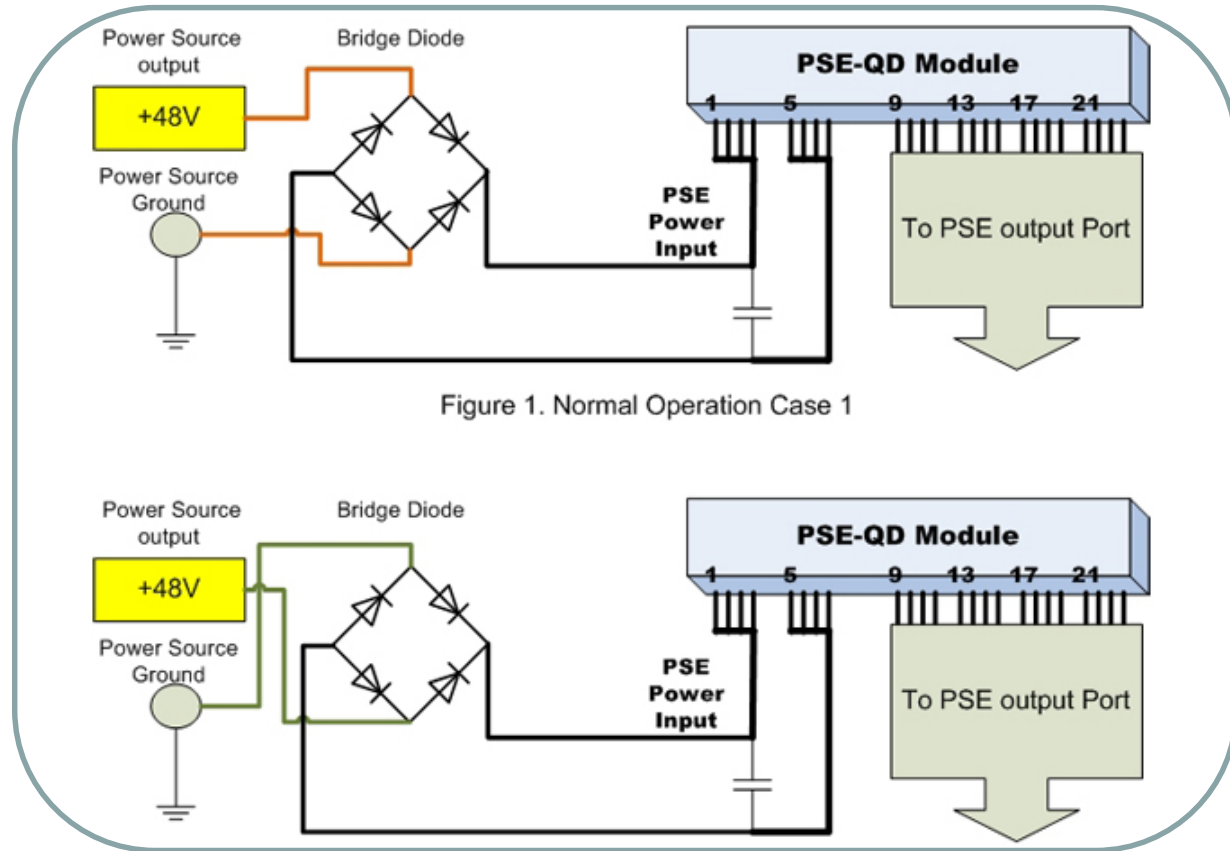
New Products – BR DFN Schottky Bridge Rectifiers



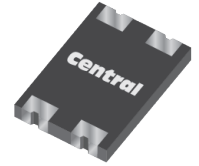
Applications

Polarity Protection

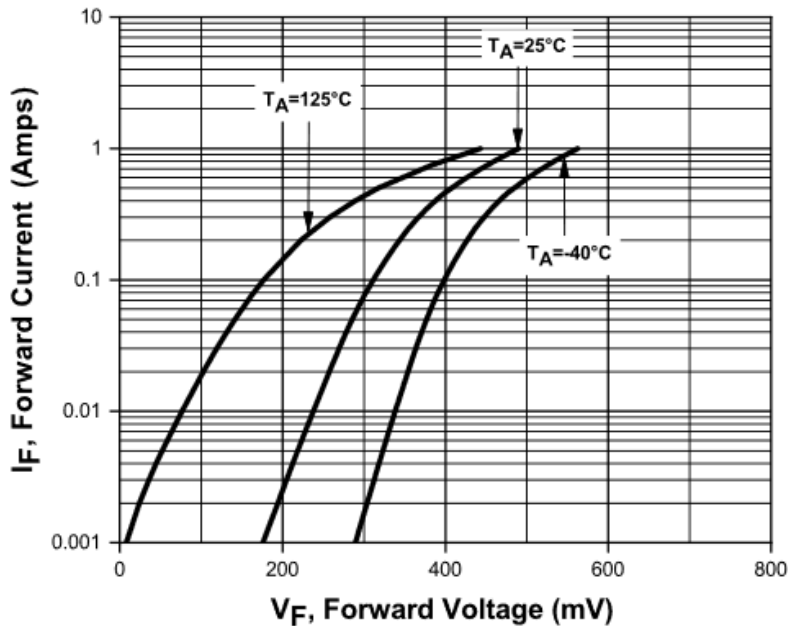
A simply and cost effective way to protect your circuit from polarity related issues is to apply a bridge diode at the DC power source output.



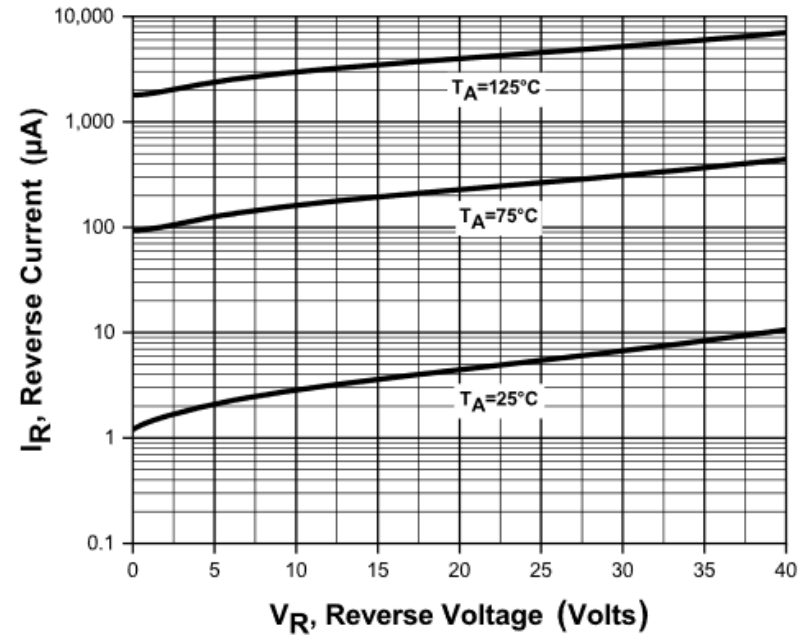
New Products – BR DFN Schottky Bridge Rectifiers



Forward Voltage for CBRDFSH1-40



Leakage Current for CBRDFSH1-40

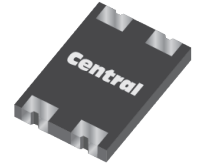


Data curves for other devices can be found on the individual datasheets



New Products – BR DFN Schottky Bridge Rectifiers

On-line









Central Semi Product Search Results containing 'CBRDFSH'
Search found 6 products.

Part # Contains Starts with

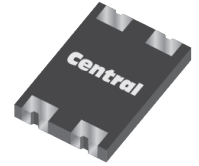
A minimum of 3 characters is required for searching.

Displaying 1 through 6 of 6 results found.

| Datasheet | Part Number | Description | Packaging | Package Details & Composition | Status |
|---|------------------------------|---|-----------|-------------------------------|--------|
|  | CBRDFSH1-100 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |
|  | CBRDFSH1-40 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |
|  | CBRDFSH1-60 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |
|  | CBRDFSH2-100 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |
|  | CBRDFSH2-40 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |
|  | CBRDFSH2-60 | Surface mount Rectifier-Bridge Schottky | Reel | BR DFN | Active |



New Products – BR DFN Schottky Bridge Rectifiers



On-line

Landing page provides links to the device datasheets, Product Briefs and the ability to request samples

manufacturer of innovative discrete semiconductors since 1974

sample cart

Central Semiconductor Corp.

products solutions resources corporate connect

search part

the low profile BR DFN surface mount case and features highly desirable energy efficiency. These full wave bridge rectifiers utilize individual glass passivated die to reduce leakage and improve performance and reliability. Ideal for any application requiring a space saving and energy efficient Schottky bridge rectifier, including Power over Ethernet (PoE) and intelligent lighting.

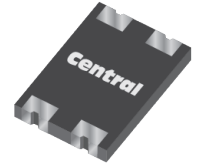
| device | datasheet | product brief | details & samples |
|--------------|-----------|---------------|----------------------------|
| CBRDFSH1-40 | | | learn more |
| CBRDFSH1-60 | | | learn more |
| CBRDFSH1-100 | | | learn more |
| CBRDFSH2-40 | | | learn more |
| CBRDFSH2-60 | | | learn more |
| CBRDFSH2-100 | | | learn more |

power over ethernet charging/power port protection solid state lighting (SSL)

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New Products Preview – BR DFN Bridge Rectifiers Literature



Product Brief

RoHS & REACH Compliant

Schottky Bridge Rectifiers in low profile BR DFN package

1.0A, 40-100V | 2.0A, 40-100V | 3.0A, 40-60V*

Central Semiconductor's CBRDFSH Schottky Bridge Rectifier series was designed to meet designers' requirements for smaller and lower profile devices needed to reduce overall product size. This series provides a variety of current and voltage options. Each device is packaged in the low profile BR DFN surface mount case and features highly desirable energy efficiency. These full wave bridge rectifiers utilize individual glass passivated die to reduce leakage and improve performance and reliability. Ideal for any application requiring a space saving and energy efficient Schottky bridge rectifier, including Power over Ethernet (PoE) and intelligent lighting.

Features

- Low forward voltage (V_f) as low as 500mV
- High current range (1.0A-3.0A)
- Low profile BR DFN package (1.22mm)

Applications

- Power over Ethernet (PoE)
- Networks
- Cameras
- Speakers
- Point of sale terminals
- Intelligent lighting

Benefits

- Energy efficiency
- Space savings
- Low profile package
- RoHS and REACH compliant

| Central Part No. | Maximum Ratings ($T_A=25^\circ\text{C}$) | | | Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|------------------|--|---------|--------------------------|---|----------|-------------|-----------------------|-----------------------|-----|---------|--|
| | (A) MAX | (V) MAX | ($^\circ\text{C}$) MAX | (mV) TYP | (mV) MAX | (A) @ I_f | (μA) TYP | (μA) MAX | (V) | @ V_f | |
| CBRDFSH1-40 | 1.0 | 40 | -55 to +125 | 490 | 500 | 1.0 | 25 | 200 | 40 | | |
| CBRDFSH1-60 | 1.0 | 60 | -55 to +125 | 600 | 700 | 1.0 | 25 | 200 | 50 | | |
| CBRDFSH1-100 | 1.0 | 100 | -55 to +125 | 800 | 950 | 1.0 | 25 | 200 | 100 | | |
| CBRDFSH2-40 | 2.0 | 40 | -55 to +125 | 490 | 520 | 2.0 | 25 | 200 | 40 | | |
| CBRDFSH2-60 | 2.0 | 60 | -55 to +125 | 600 | 700 | 2.0 | 25 | 200 | 60 | | |
| CBRDFSH2-100 | 2.0 | 100 | -55 to +125 | 800 | 950 | 2.0 | 25 | 200 | 100 | | |
| CBRDFSH3-40* | 3.0 | 40 | -55 to +125 | 530 | 550 | 3.0 | 25 | 200 | 40 | | |
| CBRDFSH3-60* | 3.0 | 60 | -55 to +125 | 670 | 700 | 3.0 | 25 | 200 | 60 | | |

* Devices currently under development

Custom solutions/POE available:

- custom device development
- special order of Mission
- custom interconnect options
- packaging options
- specialized parametric testing
- appreciating to MIL standard equivalents or to customer specific criteria

Package profile comparison:

BR DFN has a 54% lower profile than HD DIP.

SPICE Models and other technical resources: Visit www.centralsemi.com to download SPICE models for these devices.

RoHS and REACH compliance declarations: Visit the Quality section of Central's website to access.

Central Semiconductor Corp. • 145 Adams Avenue • Hightstown, NY 11788 • USA • www.centralsemi.com

Datasheet

CBRDFSH2-40
CBRDFSH2-60
CBRDFSH2-100

SURFACE MOUNT
2.0 AMP SILICON
SCHOTTKY BRIDGE RECTIFIERS

BRIDGE

BR DFN CASE

www.centralsemi.com

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CBRDFSH2-40, CBRDFSH2-60, and CBRDFSH2-100 are 2.0 Amp full wave bridge rectifiers mounted in a durable epoxy surface mount case, utilizing glass passivated chips.

MARKING CODES: CBRDFSH2-40: SH2-40
CBRDFSH2-60: SH2-60
CBRDFSH2-100: SH2100

| MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | CBRDFSH2 | | UNITS | |
|---|----------------|-------------|-----|------------------|---|
| Peak Repetitive Reverse Voltage | SYMBOL | -40 | -60 | -100 | V |
| DC Blocking Voltage | V_{RRM} | 40 | 60 | 100 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 28 | 42 | 70 | V |
| Average Forward Current ($T_A=50^\circ\text{C}$) | I_O | 2.0 | | A | |
| Peak Forward Surge Current (8.3ms) | I_{FSM} | 50 | | A | |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -55 to +125 | | $^\circ\text{C}$ | |

| ELECTRICAL CHARACTERISTICS PER DIODE: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | UNITS | | |
|--|-------------------------------------|-------|-----|---------------|
| SYMBOL | TEST CONDITIONS | TYP | MAX | |
| I_R | $V_R=40\text{V}$ (CBRDFSH2-40) | 25 | 200 | μA |
| I_R | $V_R=50\text{V}$ (CBRDFSH2-60) | 10 | 200 | μA |
| I_R | $V_R=100\text{V}$ (CBRDFSH2-100) | 0.5 | 200 | μA |
| V_f | $I_f=2.0\text{A}$ (CBRDFSH2-40) | 490 | 520 | mV |
| V_f | $I_f=2.0\text{A}$ (CBRDFSH2-60) | 600 | 700 | mV |
| V_f | $I_f=2.0\text{A}$ (CBRDFSH2-100) | 800 | 850 | mV |
| C_j | $V_R=0\text{V}$, $f=1.0\text{MHz}$ | 250 | | pF |

R4 (6-December 2019)

Application Brief

PoE Audio Speakers

PoE speakers provide system flexibility and therefore can be placed anywhere in a facility where Ethernet connections are available, regardless of available power sources. In order to achieve desired levels of efficiency and size reduction, PoE speakers require energy efficient semiconductors packaged in very small, low profile outlines. Central Semiconductor manufactures a broad portfolio of discrete semiconductor products that provide engineers with options for both reduced power consumption and decreased package size.

For more information visit: www.centralsemi.com/applications

PoE Audio Speakers Topology

I/O Protection

- CASMFL58A: 58V, 400W TVS (SMALF)
- 1SM58CA: 58V, 600W bi-directional TVS (SMD)
- ESD Transient Voltage Suppressors
- CFTV5V0BULC: 5V, ultra-low capacitance, bi-directional, low profile (SOD-882L)

DSP/DAC

- Zener Diodes
- CMOZ2L1: 5.1V, 250mW, low idle current (SOD-523)
- L-CMOZ12L: 12V, 250mW, low idle current (SOD-523)
- CMOZ2L1: 5.1V, 250mW, low idle current (SOD-323)
- ESD Transient Voltage Suppressors
- CFTV5V0BULC: 5V, ultra-low capacitance, bi-directional, low profile (SOD-882L)
- CMOSV0LC: 5V, low capacitance, low profile (SOD-523)
- CTLTV5V0B: 5V, bi-directional, low profile (TLMQD30D)

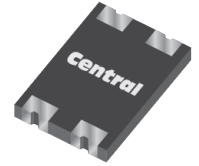
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Product Brief

Datasheet

Application Brief

New Products – DFN Schottky Bridge Rectifiers



On-line

Devices are available at the following franchised distributors:



www.digikey.com



www.mouser.com



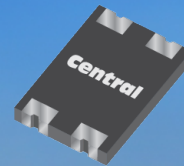
www.arrow.com



www.avnet.com



Schottky Bridge Rectifier in the BR DFN package



Rethink the PossibilitiesTM

Discretes do MatterTM

