



Vishay Intertechnology, Inc.

# Telecommunications

(Infrastructure)



One of the World's Largest Manufacturers of  
**Discrete Semiconductors and Passive Components**





**Telecom**

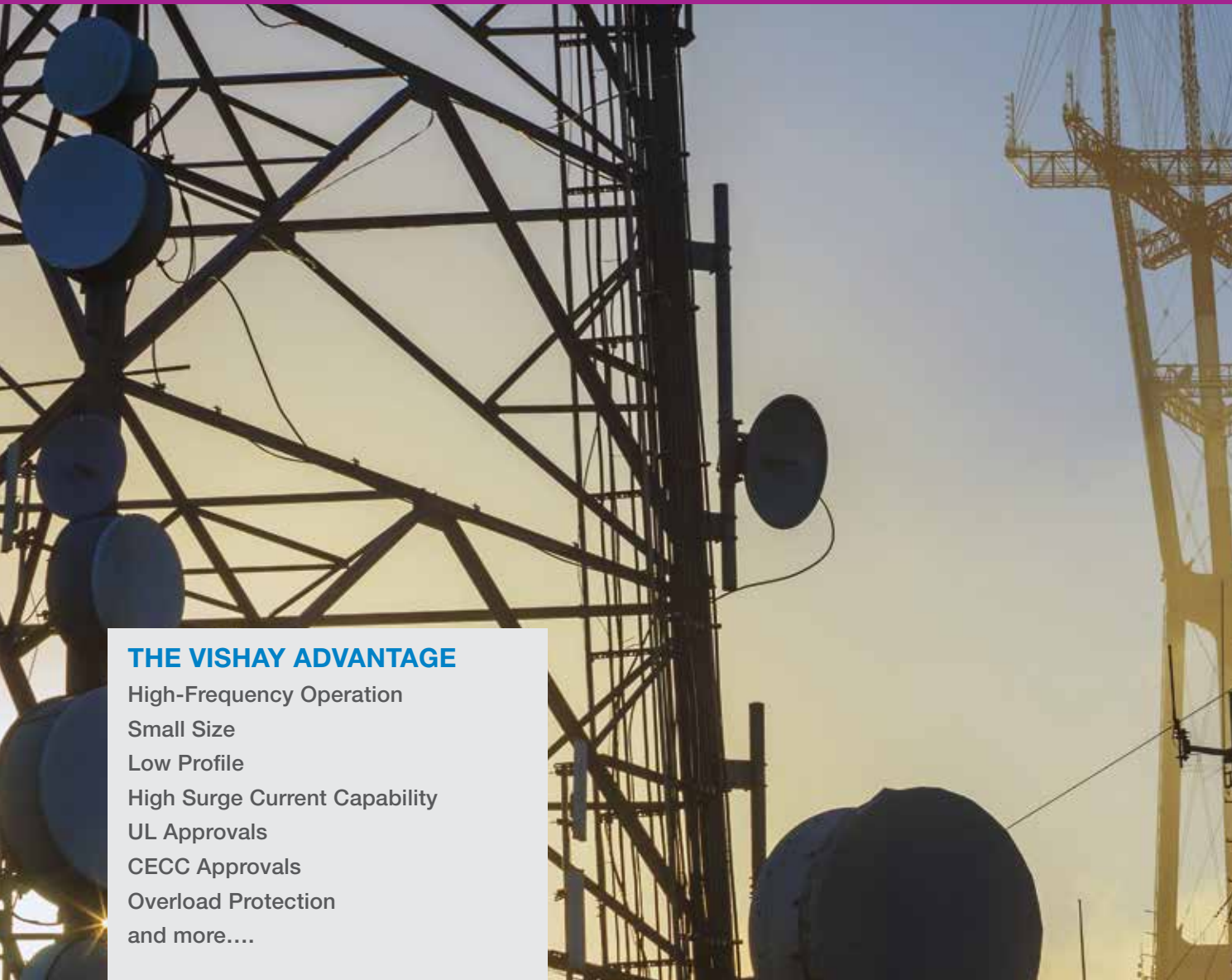
## Infrastructure

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More information on the Engineer's Toolbox, including product datasheet links, can be found at [www.vishay.com/ref/et3](http://www.vishay.com/ref/et3).

For inquiries, please contact your local sales representative.

# Key components for INFRASTRUCTURE



**THE VISHAY ADVANTAGE**  
High-Frequency Operation  
Small Size  
Low Profile  
High Surge Current Capability  
UL Approvals  
CECC Approvals  
Overload Protection  
and more....

<b>Line Cards</b>	
<b>Modems</b>	
<b>Transmitters / Base Stations</b>	
<b>DC/DC Bricks</b>	
<b>AC/DC SMPS</b>	



# Line Cards




RESISTORS

**Professional Thin Film Chip Resistors** 

[MC0402](#)

- Excellent stability class 0.5, cost efficient
- CECC approved acc. EN 140401-801, sulfur resistant


NON-LINEAR RESISTORS

**TWIN Vertical SMD PTC Thermistors for Telecom Overload Protection** 

[PTCTI](#)

- Very small footprint, allowing an increased number of lines
- Thermal coupled PTCs for enhanced protection


INDUCTORS

**Wirewound, Surface-Mount Molded Inductors** 

[IMC-1210](#)

- SMD, RF filter inductor
- Vertical bobbin configuration provides low cross talk to nearby components

NON-LINEAR RESISTORS

**NTC Thermistors, SMD 0402, 0603, 0805, and 1206 Chips** 

[NTHS](#)

- Standard series
- Glass protected


RECTIFIERS

**Surface-Mount Trench MOS Barrier Schottky Rectifier** 

[V3P6](#)

- Trench MOS Schottky technology
- AEC-Q101 qualified


INDUCTORS

**Low-Profile, High-Current IHLP® Inductors** 

[IHLP-2525CZ](#)

- Compact, high-current power inductor for DC/DC conversion and filtering
- High-frequency energy storage up to 5 MHz


RESISTORS

**Power Metal Strip® Resistors, Low Value (Down to 0.0005 Ω), Surface-Mount** 

[WSL2512](#)

- Extremely low resistance values from 0.0005 Ω to 0.5 Ω and tolerance of 1 %
- High power of 1 W in 2512 size resistor


CERAMIC CAPACITORS

**Internal Design Reduces Risk of Shorts Caused by Board Flex, High Breakdown Voltage** 

[MLCC OMD Capacitors](#)

- Polymer termination available for intensive board flex requirements
- 100 % voltage conditioning available up to 630 V<sub>DC</sub> rating (process code “5H”)


OPTOELECTRONICS

**High-Speed, SPST Normally Open (1 form A), Solid-State Relay in an SOP-4 Package** 

[LH1546AEF](#)

- Isolation test voltage 3750 V<sub>RMS</sub>, load voltage 350 V, DC load current 120 mA
- Can be configured for AC/DC or DC only operation w/clean, bounce-free switching

CERAMIC CAPACITORS

**Robust Design Build with Wet Process** 

[VJ0402Y](#)

- Reliable wet build process and noble metal electrode technology
- Polymer (soft) termination options


CERAMIC CAPACITORS

**IEC 60384-14:2005, CAN/CSA/cCSAus, and ANSI/UL CB Certificates** 

[MLCC SMD Safety Capacitor](#)

- Surface-mount design: simpler assembly and reduced board space requirement
- Available in NP0 (C0G) or X7R dielectrics

ICs

**4 A, 4.5 V to 15 V Input, Synchronous Buck Regulator Enables Compact Design** 

[SiP12109](#)

- Current mode constant on time architecture enables fast transient response
- OVP, UVP, OTP, PGOOD, and soft start

View datasheets for these products [www.vishay.com/ref/et3te2a](http://www.vishay.com/ref/et3te2a)



# Modems




CERAMIC CAPACITORS

**AC Line Rated Disc Capacitors, Class X1, 760 V<sub>AC</sub>; Class Y1, 500 V<sub>AC</sub>** 

[VY1](#)

- X1 / Y1 safety rating according to IEC 60384-14, 3rd edition
- Highest reliability and lifetime, operating temperature: -40 °C to +125 °C


MOSFETs

**N-Channel 100 V (D-S) MOSFET** 

[Si4056DY](#)

- ThunderFET<sup>®</sup> technology providing maximum R<sub>DS(on)</sub> of 23 mΩ and low gate charge
- Efficient solution in the popular SO-8 package


RECTIFIERS

**Surface-Mount Trench MOS Barrier Schottky Rectifier** 

[V3P6](#)

- Trench MOS Schottky technology
- AEC-Q101 qualified


DIODES

**Surface-Mount TRANSZORB<sup>®</sup> Transient Voltage Suppressors** 

[SMAJ75A-E3](#)

- 400 W peak pulse power capability with a 10/1000 μs waveform
- AEC-Q101 qualified


RESISTORS

**Power Metal Strip<sup>®</sup> Resistors, Low Value (Down to 0.001 Ω), Surface-Mount** 

[WSL1206](#)

- Low TCR element (< 20 ppm/°C) results in accurate current sensing in application
- Power Metal Strip construction offers high reliability in critical applications

OPTOELECTRONICS

**DPST Normally Open Switches (2 form A), Solid-State Relay in a DIP-8 or SMD Package** 

[LH1513xx](#)

- Isolation test voltage 5300 V<sub>RMS</sub>, load voltage 200 V, DC load current 140 mA
- Can be configured for AC/DC or DC only operation w/clean, bounce-free switching


NON-LINEAR RESISTORS

**SMD PTC – Nickel Thin Film Linear Thermistors** 

[TFPT0603](#)

- Available in R<sub>25</sub> tolerances: ± 0.5 %, ± 1 %
- cUL recognized component: File E148885


INDUCTORS

**Low-Profile, High-Current IHLP<sup>®</sup> Inductors** 

[IFSC-1515AH](#)

- Very small, low-profile power inductor for DC/DC conversion


CERAMIC CAPACITORS

**Robust Design Build with Wet Process** 

[VJ1812](#)

- High breakdown voltage
- Polymer (soft) termination options


INDUCTORS

**Wirewound, Surface-Mount, Molded Inductors** 

[IMC-1812](#)

- SMD, RF filter inductor
- Vertical bobbin configuration provides low cross talk to nearby components


TANTALUM CAPACITORS

**Solid Tantalum Surface-Mount Chip Capacitors, TANTAMOUNT<sup>®</sup>, Molded Case** 

[293D](#)

- Molded tantalum capacitor, standard industrial grade
- General purpose capacitor

ICs

**Low Power Consumption, Current Mode Controller** 

[SiP2802DY-T1-E3](#)

- Pin-for-pin compatible with UCC280X, enhanced performance UC284X
- Advanced architecture enables complete offline and DC/DC designs with few components


View datasheets for these products [www.vishay.com/ref/et3te2b](http://www.vishay.com/ref/et3te2b)



# Transmitters / Base Stations



RESISTORS

**Conductive Plastic Motion Transducer KIT** 

[LMF](#)

- Electrical stroke can be set up at any length, easy mounting in the base station
- Reduced bulk for fitting in small spaces, flying leads, tighter linearity

MOSFETs

**P-Channel 8 V (D-S) MOSFET** 

[SiA427ADJ](#)

- Low on-resistance guaranteed with gate voltages down to 1.2 V
- 2 mm x 2 mm PowerPAK® SC-70 packaging


RESISTORS

**Power Metal Strip® Resistors, Low Value (Down to 0.0005 Ω), Surface-Mount** 

[WSL](#)

- Low TCR element (< 20 ppm/°C) results in accurate current sensing in application
- Power Metal Strip construction offers high reliability in critical applications


RECTIFIERS

**Dual High-Voltage Trench MOS Barrier Schottky Rectifier** 

[VB30100C-E3](#)

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses

DIODES

**Surface-Mount PAR® Transient Voltage Suppressors** 

[3KASMCxx](#)

- T<sub>J</sub> = 185 °C capability suitable for high reliability
- 3000 W peak pulse power capability with a 10/1000 μs waveform

MOSFETs

**N-Channel 80 V (D-S) MOSFET** 

[SiR880ADP](#)

- ThunderFET® technology providing maximum R<sub>DS(on)</sub> of 6.3 mΩ and low gate charge
- Efficient high-frequency switching in the PowerPAK SO-8 package


RESISTORS

**Thin Film Top-Contact Miniature Wirebondable Resistor** 

[MSFM](#)

- 0.015 in x 0.015 in ultra-small form factor with value range from 2.5 Ω to 400 KΩ
- Self-passivating tantalum nitride film well suited for high-moisture environments

OPTOELECTRONICS

**Optocoupler with Phototransistor Output in an SSOP-4, Half Pitch, Mini-Flat Package** 

[VO617A](#)

- Low input current I<sub>F</sub> = 5 mA with current transfer ratios of 600 % maximum
- SSOP-4 package provides 5 mm of clearance, isolation test voltage = 3750 V<sub>RMS</sub>


MOSFETs

**E Series 600 V N-Channel Power MOSFET** 

[SiHG33N60E](#)

- High-performance E Series, high-voltage technology, maximum R<sub>DS(on)</sub> 99 mΩ
- Popular TO-247 packaging, maximum continuous current of 33 A


TANTALUM CAPACITORS

**vPolyTan™ Polymer Tantalum Capacitors** 

[T55 Series](#)

- High-capacitance, low-ESR polymer tantalum capacitors
- Stable electrical performance over temperature and voltage


NON-LINEAR RESISTORS

**For Transient and Overvoltage Protection** 

[VDRS10P060TME](#)

- Standard overvoltage surge protector
- UL recognized

INDUCTORS

**Low-Profile, High-Current IHLP® Inductors** 

[IHLP-6767GZ](#)

- Very large SMD, high-current power inductor for DC/DC conversion and filtering
- Current handling capacity up to 100 A

View datasheets for these products [www.vishay.com/ref/et3te2c](http://www.vishay.com/ref/et3te2c)




# DC/DC Bricks



**MOSFETs**

**N-Channel 100 V (D-S) MOSFET**



[SiR846ADP](#)

- ThunderFET® technology providing maximum  $R_{DS(on)}$  of 7.8 mΩ and low gate charge
- Efficient high-frequency switching in the PowerPAK® SO-8 package

**RESISTORS**

**Thick Film Surface-Mount Chip Resistors, Wraparound, Extremely Low Value**




[RCWE0402](#)

- Low resistance values from 0.01 Ω to 0.99 Ω and tolerance of 1 %
- Thick film construction with high power, 2x power capacity

**OPTOELECTRONICS**

**High-Speed, SPST Normally Open (1 form A), Solid-State Relay in a DIP-6 Package**



[VO14642AAB](#)

- Isolation test voltage 5300 V<sub>RMS</sub>, load voltage 60 V, DC load current 2 A
- Can be configured for AC/DC or DC only operation w/clean, bounce-free switching

**RESISTORS**

**Professional Thin Film MELF Resistors**




[MMB0207](#)

- Unrivaled surge handling capability, ultimate stability over lifetime
- AEC-Q200 qualified, approved acc. EN 140401-803, sulfur resistant, GREEN product

**RECTIFIERS**

**High Current Density Surface-Mount Trench MOS Barrier Schottky Rectifier**




[V10P10](#)

- Very low profile: typical height of 1.1 mm
- Trench MOS Schottky technology

**MOSFETs**

**N-Channel 30 V (D-S) MOSFET**




[SiRA02DP](#)

- TrenchFET® Gen IV synchronous rectifier with maximum  $R_{DS} = 2$  mΩ and low gate charge
- Low power losses in the thermally enhanced PowerPAK SO-8 packaging

**INDUCTORS**

**Low-Profile, High-Current IHLP® Inductors**




[IHLP-2525](#)

- Compact, high-current power inductor for DC/DC conversion and filtering
- High-frequency energy storage up to 5 MHz

**TANTALUM CAPACITORS**

**vPolyTan™ Polymer Tantalum Capacitors**



[T55 Series](#)

- High-capacitance, low-ESR polymer tantalum capacitors
- Stable electrical performance over temperature and voltage

**DIODES**

**Small-Signal Zener Diodes, Dual**



[AZ23-C12](#)

- Dual silicon planar Zener diodes, common anode
- AEC-Q101 qualified

**RESISTORS**

**Power Metal Strip® Resistors, Low Value (Down to 0.0005 Ω), Surface-Mount**




[WSL](#)

- Low TCR element (< 20 ppm/°C) results in accurate current sensing in application
- Power Metal Strip construction offers high reliability in critical applications

**CERAMIC CAPACITORS**

**Internal Design Reduces Risk of Shorts Caused by Board Flex, High Breakdown Voltage**




[MLCC OMD Capacitors](#)

- Compact, high-current power inductor for DC/DC conversion and filtering
- 100 % voltage conditioning available up to 630 V<sub>DC</sub> rating (process code “5H”)

**MOSFETs**

**N-Channel 150 V (D-S) MOSFET**



[SiR872ADP](#)


- TrenchFET technology providing maximum  $R_{DS} = 18$  mΩ and low gate charge
- Reducing power loss from conduction and switching simultaneously

View datasheets for these products [www.vishay.com/ref/et3te2d](http://www.vishay.com/ref/et3te2d)




# AC/DC SMPS




RECTIFIERS  
**Hyperfast Rectifier, 8 A FRED Pt®**  
  
[ETH0806-M3](#)  

- 175 °C operating junction temperature
- Hyperfast soft recovery time

MOSFETS  
**N-Channel 30 V (D-S) MOSFET**  
  
[SIRA00DP](#)  

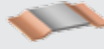
- TrenchFET® Gen IV technology with very low maximum  $R_{DS} = 1 \text{ m}\Omega$  for hotswap and ORing
- Low power losses in the thermally enhanced PowerPAK® SO-8 packaging

RECTIFIERS  
**Hyperfast Rectifier, 6 A FRED Pt**  
  
[6ESH06](#)  


- 175 °C maximum operating junction temperature
- For PFC, CRM / CCM, and snubber operation

RECTIFIERS  
**Dual High-Voltage Trench MOS Barrier Schottky Rectifier**  
  
[V40120C](#)  


- Trench MOS Schottky technology
- Low forward voltage drop, low power losses

RESISTORS  
**Power Metal Strip® SMD Resistors, Very High Power (to 9 W), Low Value (Down to 0.0002  $\Omega$ )**  
  
[WSL3921](#)  

- High power rating of 5 W to 9 W in WSLP3921 package
- Very low resistance values from 0.0002  $\Omega$  to 0.004  $\Omega$ , with tolerance of 1 %

OPTOELECTRONICS  
**Optocoupler with Phototransistor Output with Reinforced, CAT IV Isolation**  
  
[CNY651](#)  

- Reinforced isolation for class I to IV at mains voltage  $\leq 600 \text{ V}$
- Rated recurring peak voltage (repetitive)  $V_{IORM}$  of 1450  $V_{peak}$

OPTOELECTRONICS  
**Optocoupler with Phototransistor Output and Trigger Current of  $I_F = 5 \text{ mA}$**   
  
[VO617A](#)  


- High current transfer ratio, and high isolation voltage of 5300  $V_{RMS}$
- Operating temperature from -55 °C to +110 °C in a DIP-4 or SMD package

FILM CAPACITORS  
**Interference Suppression Film Capacitors, MKP Radial Potted Type**  
  
[MKP339](#)  


- RFI X2 capacitor for standard across-the-line applications

CERAMIC CAPACITORS  
**IEC 60384-14:2005, CAN/CSA/cCSAus, and ANSI/UL CB Certificates**  
  
[MLCC SMD Safety Capacitors](#)  


- Surface-mount design: simpler assembly and reduced board space requirement
- Available in NP0 (C0G) or X7R dielectrics

MOSFETS  
**High-Voltage E Series Power MOSFET**  
  
[SiHG73N60E](#)  

- Low figure of merit (FOM):  $R_{ON} \times Q_g$ , low input capacitance ( $C_{iss}$ )
- Reduced switching and conduction losses

RECTIFIERS  
**High-Performance Schottky Rectifier, 2 x 30 A**  
  
[VS-60CTQ150PbF](#)  

- 175 °C  $T_J$  operation, low forward voltage drop, high-frequency operation
- Guard ring for enhanced ruggedness and long-term reliability

OPTOELECTRONICS  
**Optocoupler with Phototransistor Output and Trigger Current of  $I_F = 1 \text{ mA}$**   
  
[VO618A](#)  

- High current transfer ratio, and high isolation voltage of 5300  $V_{RMS}$
- Operating temperature from -55 °C to +110 °C in a DIP-4 or SMD package

View datasheets for these products  
[www.vishay.com/ref/et3te2e](http://www.vishay.com/ref/et3te2e)







Vishay Intertechnology, Inc.



A *WORLD OF*  
*SOLUTIONS*