



VISHAY INTERTECHNOLOGY, INC.



# SUPER 12

FEATURED PRODUCTS



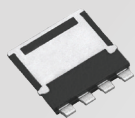
2017



[www.vishay.com/ref/2017s12](http://www.vishay.com/ref/2017s12)



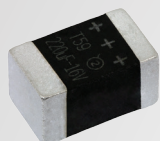
## Table of Contents



### **SQJQ480E**

TrenchFET® Gen IV MOSFET

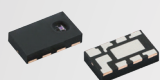
01



### **T59 Series**

vPolyTan™ Polymer Capacitors

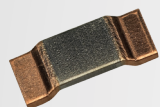
02



### **VCNL4035X01**

Optical Sensor

03



### **WSLF2512**

6 W Power Metal Strip® Resistor

04



### **VTVS5V0ASM to VTVS63GSMF**

400 W Transient Voltage Suppressor Diodes

05

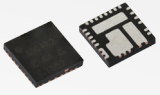


### **IHLE-5A Series**

High Current Inductors with E-Field Shield

06





### SiC462

Synchronous microBUCK® Regulator

07



### MKP1847H

AC Filtering Film Capacitor

08



### 10 A to 30 A FRED Pt®

Ultrafast Rectifiers in SMPD Package

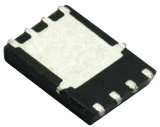
09



### IHXL Series

Very High Current Inductors

10



### SiRA20DP

TrenchFET® Gen IV MOSFET

11

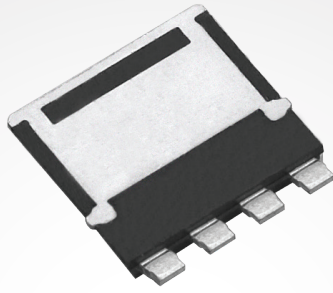


### DCRF

Direct Water-Cooled Power Wirewound Resistor

12





## SQJQ480E

### TrenchFET® Gen IV MOSFET

80 V, 3 m $\Omega$  N-Channel MOSFET in  
PowerPAK® 8x8L Package

# 01

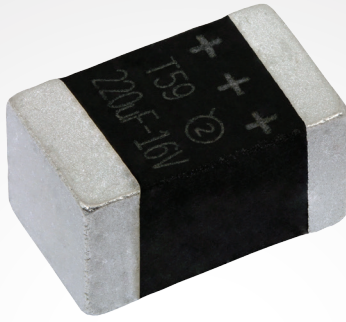


#### FEATURES

- TrenchFET® power MOSFET
- AEC-Q101 qualified
- 100 % R<sub>g</sub> and UIS tested
- Fully lead (Pb)-free device
- Low profile height: 1.9 mm
- PowerPAK® SO-8 and PowerPAK® 8x8L packages achieve the best R<sub>DS</sub>, Q<sub>g</sub>, and Q<sub>OSS</sub> by minimizing the package resistance and parasitic resistance

#### APPLICATIONS / MARKET SEGMENTS

- Automotive
- Transportation / intralogistics



## T59 Series

### vPolyTan™ Polymer Capacitors

Low ESR, High Energy Polymer  
Capacitors in MAP Package

# 02

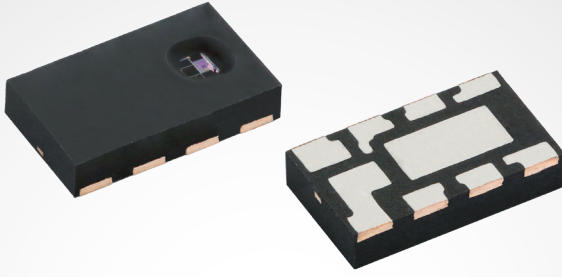


#### FEATURES

- Wide capacitance range: 15  $\mu\text{F}$  to 470  $\mu\text{F}$
- Voltage ratings up to 75 V
- Ultra low ESR down to 25 m $\Omega$
- Patented MAP packaging offers 25 % improvement in volumetric efficiency to yield the industry's highest capacitance density
- Low ESR: multi-anode construction reduces ESR by 50 %
- L-terminations reduce equivalent series inductance (ESL) by 33 % while improving the electrical and mechanical connection to the PCB

#### APPLICATIONS / MARKET SEGMENTS

- Bulk energy storage in solid-state drives
- Filtering and voltage holdup in power conversion applications



## VCNL4035X01

### Optical Sensor

Integrated Proximity and Ambient Light  
Sensor for Gesture Applications

# 03

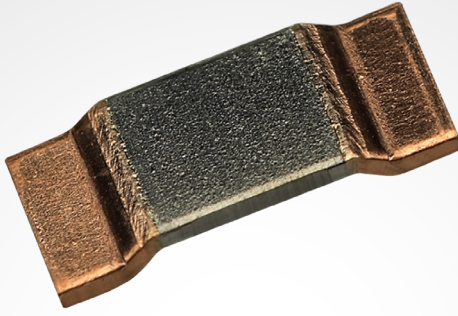


### FEATURES

- AEC-Q101 qualified
- 16-bit resolution for ambient light and proximity sensors
- Integrated current driver with internal logic to drive up to three IREDS for gesture recognition
- Excellent background light cancellation
- Outstanding sensitivity allowing high object detection distance
- Low profile package: 0.75 mm

### APPLICATIONS / MARKET SEGMENTS

- Displays
  - Wake-up and touch screen locking
  - Backlight and contrast control
- Gesture recognition with two or three external emitters to detect swipe gestures



## WSLF2512

6 W Power Metal Strip® Resistor with  
Low Resistance and Low TCR

# 04

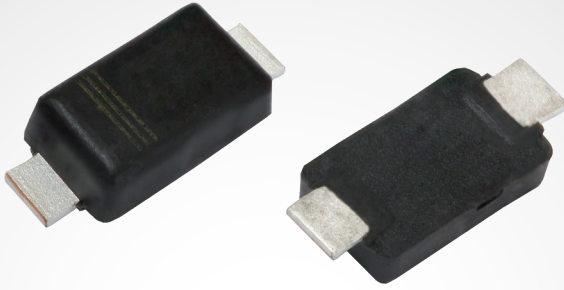


### FEATURES

- High power rating up to 6 W
- Low resistance values down to 0.0003  $\Omega$
- TCR down to 70 ppm/°C
- Small case for power rating: 2512

### APPLICATIONS / MARKET SEGMENTS

- Current sensing, voltage division, and pulse applications in power management for:
  - Automotive electronic controls (engine, transmission, anti-lock brakes, audio, and climate controls)
  - Inverter controls for down-hole test and measurement equipment
  - Inverter controls for HVAC systems
  - VRMs for servers
  - Current sensing in power semiconductor modules



## VTVS5V0ASMF to VTVS63GSMF

400 W Transient Voltage Suppressor  
(TVS) Diodes in SMF Package

# 05



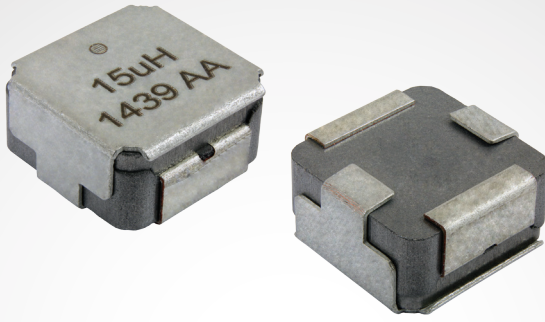
### FEATURES

- 400 W peak pulse power capability with 10/1000  $\mu$ s waveform
- 2 % tolerance of avalanche breakdown voltage
- Low profile SMF package (1 mm height)
- Low clamping ratio
- High surge current
- Wave and reflow solderable
- Operating temperature: -55 °C to +175 °C

### APPLICATIONS / MARKET SEGMENTS

- Line transient voltage protection in space-constrained electronics such as laptops, notebooks, tablets, external hard drives, and more





## IHLE-5A Series High Current Inductors with E-Field Shield

Provide 20 dB Electric Field Reduction  
at 1 cm for Automotive Applications

# 06

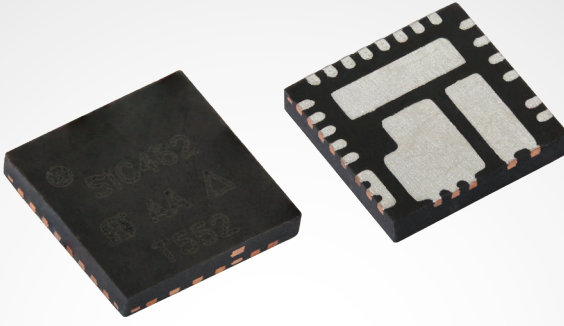


### FEATURES

- Integrates e-field shield into an IHLP® inductor package
- Reduces e-field up to 20 dB at 1 cm
- High efficiency with typical DCR from 1.55 mΩ to 167 mΩ
- Wide range of inductance values from 0.22 μH to 47 μH
- Available in three case sizes: 2525, 3232, and 4040
- Rated currents to 36 A and handle high transient current spikes without saturation
- Available in any standard IHLP inductance value
- Automotive Grade and AEC-Q200 qualified

### APPLICATIONS / MARKET SEGMENTS

- DC/DC converter circuits near noise-sensitive components
- Automotive control circuitry
- Computer and other high current, noisy power supplies



## SiC462

### Synchronous microBUCK<sup>®</sup> Regulator

4.5 V to 60 V Buck Regulator Capable of Delivering Up to 75 W Output Power

# 07



#### FEATURES

- Scalable solution for 3 A, 6 A, and 10 A
- Stable with any output capacitor
- 100 kHz to 1.5 MHz operating frequency
- Low quiescent current – 250  $\mu$ A, low shutdown current
- Single supply operation down to 5 V with internal linear regulator
- Protection and monitoring: OVP, OCP, UVP, OTP, UVLO, power good
- Operating ambient temperature: -40 °C to 105 °C

#### APPLICATIONS / MARKET SEGMENTS

- Industrial and automation
- Industrial computing
- Base station power supplies
- Wall transformer regulation
- Robotics
- Drones
- Battery management systems
- Power tools
- Vending, ATM, and slot machines



## MKP1847H

### AC Filtering Film Capacitor

Robust Design for High Humidity  
Environments

# 08

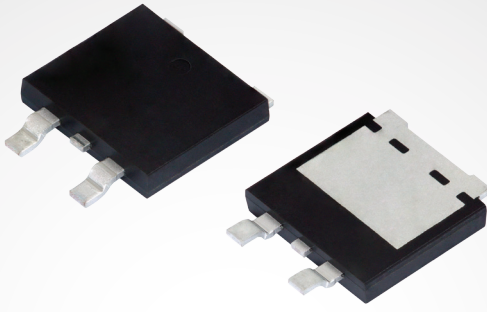


#### FEATURES

- 85 °C, 85 % relative humidity, 1000 h at rated UNAC
- Rated voltages: 250 VAC, 310 VAC, 350 VAC, and 480 VAC
- Rated capacitance range: 1 µF to 35 µF
- Segmented film
- UL 810 (electrical pending)

#### APPLICATIONS / MARKET SEGMENTS

- Outdoor applications
  - Inverters and converters
- High power supplies and large drives
- UPS
- Renewable energy
- Welding equipment
- AC harmonic filters



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## 10 A to 30 A FRED Pt<sup>®</sup>

### Ultrafast Rectifiers in SMPD Package

Offer Higher Power Density

# 09

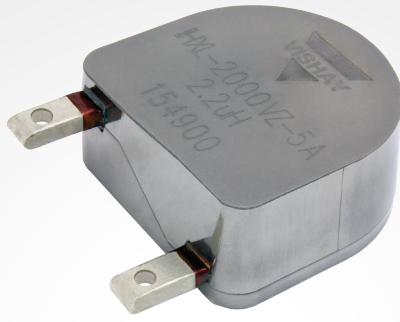


## FEATURES

- High operating temperature up to 175 °C
- Low forward voltage drop down to 0.75 V typical with fast recovery time down to 25 ns
- Soft recovery behavior over a temperature range of -40 °C up to 175 °C
- Low profile (< 1.7 mm height) SMPD (TO-263AC) package is footprint-compatible to TO-263 (D2PAK) package
- Available in AEC-Q101 qualified and standard versions

## APPLICATIONS / MARKET SEGMENTS

- Automotive
  - EV / HEV battery charging systems
  - Power supply PFC
- Industrial
  - APD in inverters for motor drives, UPS, and LED and HID lighting systems



## IHL Series

### Very High Current Inductors

Largest Composite Inductor Available;  
Up to 250 A Continuous Current Rating

# 10

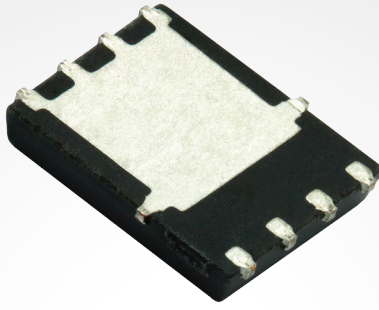


#### FEATURES

- Very high current operation: up to 250 A
- Soft saturation: 20 % saturation at 150 % of rated current
- Continuous operation at 155 °C
- Very low DCR:  $\leq 0.2 \text{ m}\Omega$
- AEC-Q200 qualified

#### APPLICATIONS / MARKET SEGMENTS

- Automotive
  - Input filter for 48 V DC/DC converters
  - EMI filter for power steering



## SiRA20DP

### TrenchFET® Gen IV MOSFET

25 V, 0.58 mΩ N-Channel MOSFET

Provides Lowest Maximum  $R_{DS(on)}$

# 11

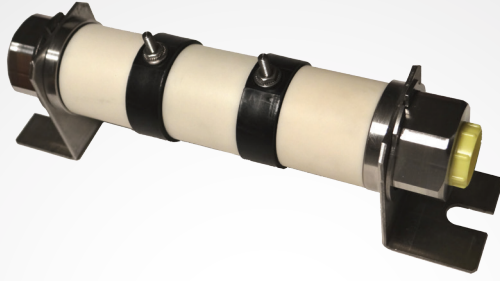


## FEATURES

- Provides the lowest maximum  $R_{DS(on)}$  rating at  $V_{GS} = 10\text{ V}$
- Increases power density as the  $R_{DS(on)}$  cuts conduction power loss
- Provides the lowest  $Q_g$  for devices with maximum  $R_{DS(on)} < 0.6\text{ m}\Omega$
- Low  $Q_g$  enables high efficiency for DC/DC conversion
- Available in the PowerPAK® SO-8 package

## APPLICATIONS / MARKET SEGMENTS

- OR-ing
- Battery management and load switching
- Synchronous rectification
- Synchronous buck



## DCRF (Direct Water-Cooled Power Wirewound Resistor)

Handles Almost 10x the Power of  
Naturally-Cooled Resistors in the Same Size

# 12



### FEATURES

- Very high power dissipation up to 9000 W
- High overload capacity (2x nominal power for 60 s)
- Customization upon request
- Compact modular design
- Easy to mount and connect

### APPLICATIONS / MARKET SEGMENTS

- High power snubber resistor for large drives and HVDC
- Filter resistor for large drives
- Fast discharge for battery banks (solar)

