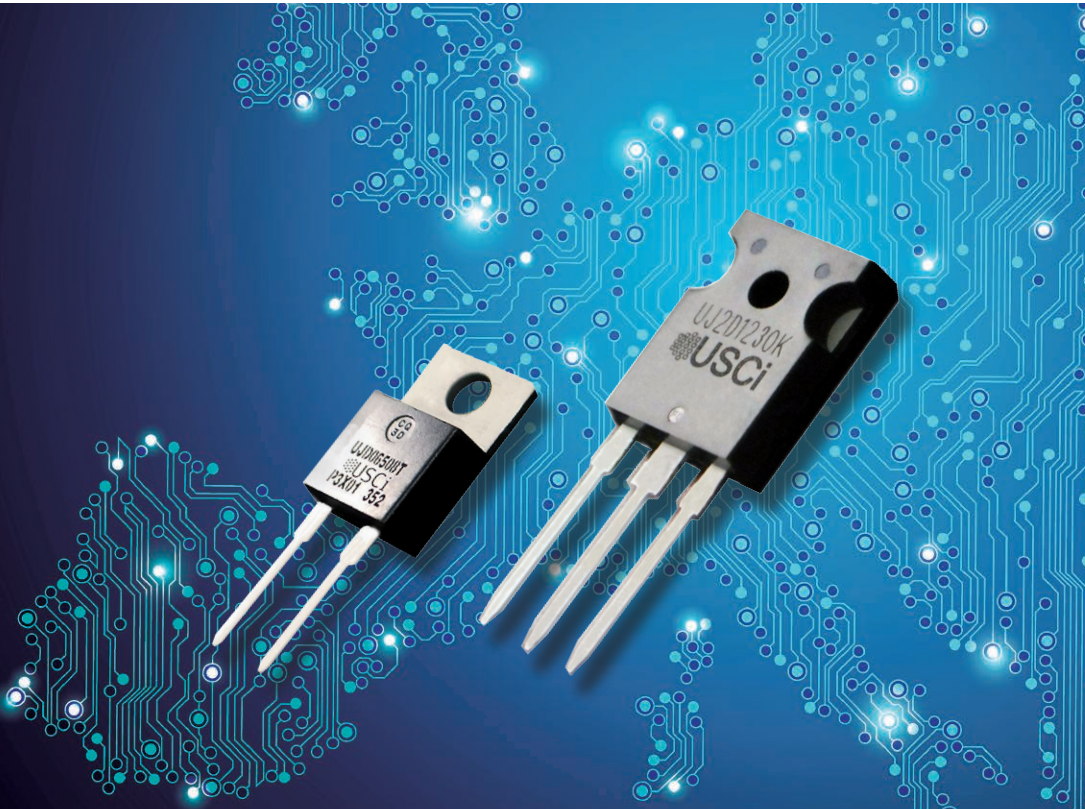


*The major component  
in your success!*



USCi MANUFACTURES  
BEST IN CLASS SILICON CARBIDE –  
TRANSISTORS (SiC),  
SCHOTTKY DIODES (SiC)  
AND CUSTOM DEVICES (SiC)



Schottky Diodes



SiC JFETs



SiC Cascodes



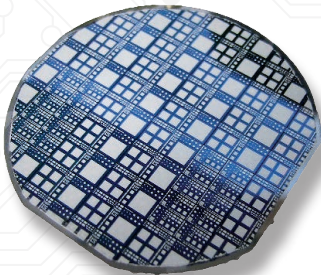
United Silicon Carbide, inc.

## POWER EFFICIENCY IN KEY MARKETS

### The Power to Do More With Less.

#### United Silicon Carbide based devices in 650V and up to 1200V.

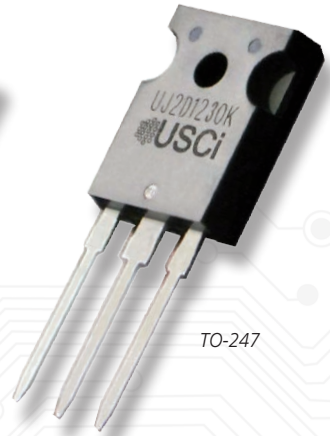
United Silicon Carbide, Inc. (USCi) manufactures discrete power products made from silicon carbide substrates. These products deliver higher efficiency, greater power density and higher reliability than comparable silicon based devices. Standard products include Schottky diodes and switches such as JFETs and Cascodes.



DIE Wafer



TO-220-2L

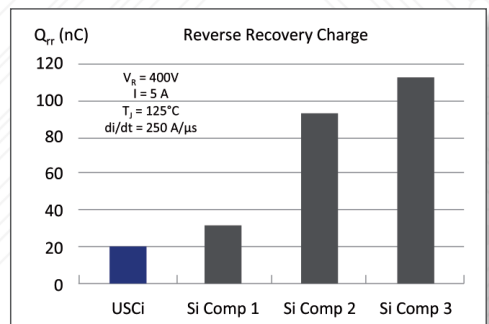


TO-247

### Benefits of Silicon Carbide based devices:

Applications to benefit range from battery charging to high-voltage DC-DC and AC-DC conversion, UPS, air-conditioning, appliances, heavy duty vehicles and on board charger.

SiC Schottky diodes enable fast switching with very low recovery charge compared to best-in-class Silicon devices.



# PERFORMANCE AND SPECIFICATION

## LINE-UP USCI: Products and technical parameter

Type	Package*	Voltage Rating [V]	Current Rating [A]	Q <sub>c</sub> typ. [nC]	V <sub>f</sub> typ. [V]	R <sub>DS(on)</sub> max. at 25°C [mΩ]
<b>SiC Schottky Diodes</b>	TO-220-2L / TO-247 / DIE	650 / 1200	4 to 200	6 to 386	1.5	–
<b>SiC Schottky with Surge Bypass Diodes</b>	TO-247 / DIE	650	4 to 10	6 to 16	1.5	–
<b>SiC Schottky Custom Diodes</b>	Bare DIE	3300 / 6500 / 8000	50 / 15 / 5	–	2.3 / 3.8 / 4.0	–
<b>SiC JFETs</b>	TO-247 / DIE	1200 / 1700	90 / 38	–	–	45 to 800
<b>SiC Cascodes</b>	TO-247	650 / 1200	20 / 35	–	–	45 / 60 to 100

\*SMD Packages and Modules on request.

## Performance Characteristics

### Schottky Barrier Diodes with or without bypass diode

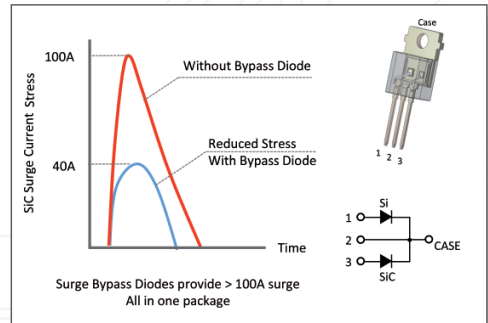
- No reverse recovery so losses significantly lower than Si or GaN
- Unaffected from junction temperature, improves stability
- Significantly reduce active switch turn-on losses
- Simplification and cost reduction of cooling requirements which also improves system reliability
- Capable of running at higher switching speeds which reduces BOM count and costs

### JFETs and Cascodes

- Higher switching speeds with lower loss
- Low device capacitance
- Limited increase in R<sub>ds(on)</sub> over temperature
- Stable high voltage operation
- Smaller magnetics, reduced thermal requirements and reduced output caps

### SiC Schottky with surge bypass diode

- Co-packaged surge bypass diode
- Reduce component count in PFC circuits



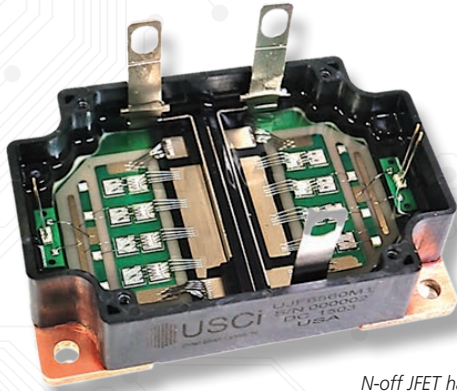
### Device Range

- SiC Schottky Barrier Diodes 650V to 1200V\*\*
- SiC Schottky with bypass diodes 650V
- SiC JFETs 1200V to 1700V
- SiC Cascodes 650V to 1200V

\*\*higher voltages on request

## CUSTOM DEVICES FOR SPECIAL APPLICATIONS

Custom Devices: United Silicon Carbide offers customized devices for special requirements. Please contact us to find out more.



*N-off JFET half-bridge module*

## OUR SERVICES

United Silicon Carbide devices are ideal for a variety of industrial and high-temperature power electronics applications such as power supplies, solar and wind inverters, motor drives, rectifiers, grid storage, and hybrid-electric devices.



ECOMAL Europe as the official distribution partner for United Silicon Carbide, Inc. is committed to assisting the manufacturer in launching this revolutionary technology into the market of power electronics. We support you in following services:

- **Sampling:** ECOMAL offers samples on all available United Silicon Carbide products ex stock
- **Logistic solutions and product availability:** support production volumes with stock and customised logistic solutions
- **Technical application support:** We help you to incorporate USCi into your design and pick the right peripheral discrete semiconductors and passive components.

**For technical questions please contact:**