

## ONE SOURCE ONE SOLUTION

*The Most Complete Provider of Advanced Microelectronic Services and Component, Die & Wafer Solutions*



### Die & Wafer Solutions



- › Largest Global Die Distributor
- › Next-Gen Materials: GaN, SiC
- › Die Express Quick Turn Service
- › Wafer Bumping
- › Turnkey Wafer Processing: Wafer Probe, Thinning, Mapping & Inking, Dicing, Pick & Place, Visual Inspection
- › Customized Output: Sawn on Foil, Waffle Tray, Gel Pack, Tape & Reel
- › Long-term Die & Wafer Storage, VMI
- › EOL Die Sustainment Program (EDSP)
- › Element Evaluation and Lot Acceptance Testing

### Hi-Rel Products



- › Hermetic: DIP, SOJ, LLC, Gull Wing, QFP, CQFP, CPGA, Metal Can
- › Plastic: CSP, BGA, QFN, ZIP
- › QML Level Packaging
- › Adv. Packaging: SiP, Precision Die Attach, Optoelectronic Assembly
- › Adv. Interconnect: Flip-Chip, 2.5/3DHI, Wafer-Level-Packaging (WLP), RDLs
- › Custom PCBs, MCMs, PEMS, ASICs
- › Turnkey Assembly, Test, and Kitting
- › SMD/5962, COTS, Memory, Logic, Analog, Diodes, RF/Microwave, DC/DC Converters (Hybrids & PCBs), Data Bus Couplers & Harnesses

### Advanced Testing & Qualification



- › Electrical & Environmental Testing
- › Device Characterization Testing
- › FPGA, ASIC, RF, Memory, Analog, Logic, Mixed Signal & Discretes
- › DMEA Trusted Source: Comprehensive Test and Process Screening
- › PEMS / COTS Upscreening & Qual, Reliability Testing
- › Adv. Chamberless Burn-in, HTOL/ TOL
- › ESD Characterization
- › Acoustic Microscopy, X-Ray, XRF, PIND, Fine/Gross Leak Testing
- › Counterfeit Mitigation Services

### Component Modification



- › Robotic Hot Solder Dip
- › BGA Reballing
- › CGA Attach
- › Lead Attach & Component Preparation
- › Trim & Form, and Reconditioning
- › PCB Solutions: Rework, Repair
- › Component Harvesting
- › Support Solutions: IC Programming, Tape and Reel, 3D Scan, Bake and Package, Marking, Labeling & Kitting,
- › Supplier Managed Inventory (SMI)
- › Serving all Standard Package Types
- › All Facilities are Nadcap Certified

**One Source Sustainment Solutions** – keeping mission-critical systems & platforms operational

#### Original Qualified Product

With exclusive access to the broadest supply of die, Microcross will source original qualified parts that have or will become EOL, avoiding costly requalification.

#### Form-Fit-Function Recreation

When original qualified die or components are not available, Microcross has the expertise to reverse engineer devices and recreate equivalent devices.

#### Program Sustainment Management

Uninterrupted product supply through BOM monitoring, long term die & wafer storage, and turnkey and supplier managed inventory (SMI)



# Facilities & Locations

17 World Class Manufacturing Operations (550,000+ ft<sup>2</sup>) in North America & Europe. AS9100 & ISO9001 certified.

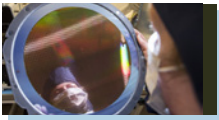
## Die & Wafer Solutions



**Apopka, FL – Die & Wafer Solutions**  
Wafer Processing & Test, and Die Distribution



**Los Alamitos, CA – SemiDice**  
Wafer Processing & Test, and Die Distribution



**Norwich, UK – Die & Wafer Solutions**  
Wafer Processing & Test, and Die Distribution



**Woburn, MA – Micross Express**  
Die Distribution, Passive Components, Same-Day Service, & Vendor Managed Inventory

## Hi-Rel Products



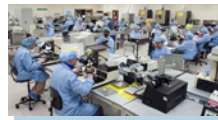
**Apopka, FL – Hi-Rel Components**  
QML Level Packaging, Assembly, Test, and Products



**Portchester, UK – Hi-Rel Components**  
MCM / Hybrid Packaging & Assembly, Test, and Hi-Rel Products



**Sunrise, FL – Data Bus Products**  
Hi-Rel MIL-STD-1553 Data Bus Couplers and Harness Assemblies



**Portsmouth, UK – Hi-Rel Components**  
Hybrid ICs, RF & Microwave Products, Optoelectronics, and PCB Assembly



**Shirley, MA – Hi-Rel RF Solutions**  
GaN/GaAs RF & Microwave Switches, Attenuators & Amplifiers



**Reynosa, MX – Hi-Rel Diodes**  
Hi-Rel Discrete Diodes and Assemblies



**San Jose, CA – Hi-Rel Power Solutions**  
DC-DC Converters, Hybrids and Custom Board Based Power Products



**Herlev, DK – Hi-Rel Power Solutions**  
Design Center for Hi-Rel Power Solutions, and Custom Board Based Power Products

## Advanced Testing & Qualification



**Milpitas, CA – Silicon Turnkey Solutions**  
Electrical and Reliability Test, PEMs Upscreening, & Qualification



**Raleigh, NC – Adv. Interconnect Technology**  
Wafer Level Packaging (WLP) & 2.5/3D Heterogeneous Integration



**Clearwater, FL – Counterfeit Mitigation**  
Counterfeit Detection Testing, Upscreening, and IC Programming

## Component Modification Services



**Manchester, NH – Component Modification**  
Robotic Hot Solder Dip (RHSD), & Lead Attach / Trim & Form



**Round Rock, TX – Component Modification**  
BGA Reballing, Components Harvesting & Reconditioning, and Solderability



**Crewe, UK – Component Modification**  
Robotic Hot Solder Dip (RHSD), TCE, BGA Reballing, CGA, and Plating

## Corporate Headquarters



**Melville, NY**  
Micross Headquarters

## Engineering & Program Management Support

Micross' highly experienced global field sales, and expert engineering teams provide complete application support from design specification to post production sustainment & program management.

## Micross Heritage

With over 40+ years experience, Micross has strengthened its' capabilities to offer the broadest microelectronic solutions available from One Source.



Americas: 1.855.426.6766  
EMEA & APAC: +44 (0) 1603.788967  
China: +85 21.5459.1970  
India: +91 7760.990.545

### Need Information?

Quote Request: [micross.com/quotes](http://micross.com/quotes)  
General Requests: [micross.com/info](http://micross.com/info)  
Technical Support: [micross.com/tech-support](http://micross.com/tech-support)



Micross designs and manufactures discrete power products in axial and surface-mount packages, as well as custom assemblies in various configurations. These high performance, rugged and reliable products are utilized in a wide range of applications, and are deployed in rockets, satellites, and missiles.



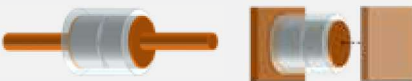
### Rectifier Diode Construction:

- Category I Eutectic Bond
- Passivation - Glass Slurry
- Terminations - OFHC Copper with Hot Solder Dip for Either Axial or Surface Mount



### Unipolar TVS Diode Construction:

- Category I Eutectic Bond
- Passivation - Die (Glass Sleeve for Added Strength)
- Terminations - OFHC Copper with Hot Solder Dip for Axial and Solder Plate Option for Surface Mount



### Bipolar TVS Diode Construction:

- Category I Eutectic Bond
- Passivation - Die (Glass Sleeve for Added Strength)
- Heat Spreader
- Terminations - OFHC Copper with Hot Solder Dip for Axial and Surface Mount. Solder Plate Option for Surface Mount



## ROBUST DESIGN & CONSTRUCTION

Micross' diodes are hermetic, non-cavity, double-plug construction with category I metallurgical bonds. They are listed on the Land & Maritime Qualified Products List, suitable for operation at temperatures ranging from -65°C to 175°C, and are qualified to JAN, JANTX, JANTXV, and JANS (Space) quality levels. Standard space-grade products include:

### Zener Diodes

- Power Ratings of 1.5W and 5W

### Rectifier Diodes

- JANS Standard, Fast, & Ultrafast Recovery

### TVS Diodes

- Power Ratings of 500W and 1500W

### Schottky Diodes

- 40V, 3A

Micross also offers catalog epoxy encapsulated rectifier assemblies (modules) and non-encapsulated, higher power density, open frame construction assemblies (ISOPACs). We offer the capability to perform custom screening and processing, as well as up-screening to Space grade equivalent and above.

# Engineered for the Most Unforgiving Environments

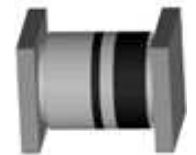
## ZENER DIODES

MIL-PRF-19500, Available in Axial Lead Packages & Surface Mount Packages

- /356: 5W Zener Voltage Regulators
- /406: 1.5W Zener Voltage Regulators



*Axial Package*



*Surface Mount Package*

## RECTIFIER DIODES

MIL-PRF-19500, Available in Axial Lead Packages

- /411: Rectifiers
- /427: Rectifiers
- /429: Rectifiers

MIL-PRF-19500, Available in Axial Lead Packages & Surface Mount Packages

- /420: Rectifiers
- /477: Rectifiers



*Axial Package*

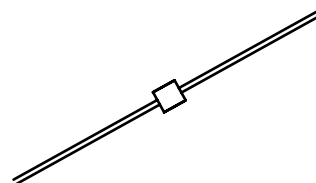


*Surface Mount Package*

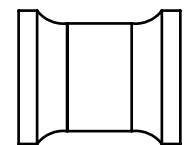
## TVS DIODES

MIL-PRF-19500, Available in Axial Lead Packages & Surface Mount Packages

- /516: TVS Devices



*Axial Package*



*Surface Mount Package*

## SCHOTTKY DIODES

MIL-PRF-19500, Available in Axial Lead Packages & Surface Mount Packages

- /620: Schottky Diodes



*Axial Package*



*Surface Mount Package*

## ADDITIONAL TESTING

- Traceability to Wafer Level
- Single Diffusion Lot
- Single Lot Date Code
- Serialization – Laser Mark
- Attribute and Variable Data Available
- Fallout Summary Provided
- Guaranteed Homogeneity
- Up-Screening Available for Non-JANS Products



Americas: 1.855.426.6766  
EMEA & APAC: +44 (0) 1603.788967  
China: +85 21.5459.1970  
India: +91 7760.990.545

### Need Information?

Quote Request: [micross.com/quotes](https://micross.com/quotes)  
General Requests: [micross.com/info](https://micross.com/info)  
Technical Support: [micross.com/tech-support](https://micross.com/tech-support)