

vision statement

**we aspire to be the preferred manufacturer of
the most innovative discrete semiconductors
in the industry**

2019 Corporate Profile

condensed version

CentralTM
Semiconductor Corp.

Discretes do MatterTM

core values

purpose

Customer satisfaction is our passion.

innovation

Overcome challenges through
creative solutions.

enthusiasm

The resolve to achieve excellence.

trust

Empower to succeed.

teamwork

Results through dynamic
collaboration.

heritage

Exceptional past,
exciting future.





- Established in 1974 with over 45 years of proven success
- Privately held, zero debt, continuously growing and profitable
- ISO9001-2015 certified: **Design and Manufacture of Discrete Semiconductors**
- World wide support for leading OEMs, ODMs and CMs
- Corporate Headquarters – Hauppauge, Long Island, NY

transistors - small signal

- **General Purpose:** 10V thru 250V - 30mA thru 800mA
- **High Current:** 20V thru 120V - 500mA thru 1.0A
- **High Voltage:** 60V thru 700V - 10mA thru 1.0A
- **Darlington:** 25V thru 60V - 300mA thru 800mA
- **Low Noise Amplifier:** 18V thru 110V - 10mA thru 500mA, NF = 2.0 & 3.0 (dB)
- **RF Oscillator:** 12V thru 50V - 25mA thru 500mA - $f_T = 600$ thru 900 (MHz)
- **Saturated Switch:** 12V thru 30V - 50mA thru 600mA
- **Chopper:** 35V - 150mA - PNP only



transistors - bipolar power

- **General Purpose:** 25V thru 175V - 1.0A thru 30A
- **Low $V_{CE(SAT)}$** 15V thru 140V - 1.0A thru 6.0A - $V_{CE(SAT)}$ as low as 0.25V @ $I_C = 3.0A$
- **High Voltage:** 60V thru 700V (BV_{CEV}) - 1.0A thru 20A - NPN only
- **Darlington:** 30V thru 400V - 1.0A thru 30A



MOSFETs / JFETs

MOSFETs

- **N-Channel** $V_{DS} = 20V$ thru 850V - $I_D = 100mA$ thru 12A - $r_{DS(ON)}$ = as low as 20m Ω
- **P-Channel** $V_{DS} = 20V$ thru 50V - $I_D = 100mA$ thru 11A - $r_{DS(ON)}$ = as low as 20m Ω
- **Complementary N-Channel/P-Channel**

JFETs

- **N-Channel** $BV_{GSS} = 25V$ thru 40V - $I_{DSS} = 1mA$ thru 150mA
- **P-Channel** $BV_{GSS} = 30V$ & 40V - $I_{DSS} = 0.9mA$ thru 60mA



diodes

• Schottky	20V thru 100V - 15mA thru 500mA
• Fast Switching	35V thru 600V - 50mA thru 400mA
• Current Limiting (CLD)	35μA thru 22.5mA
• Stabistor	0.9V thru 4.1V
• Zener	100mW thru 250W - 1.8V thru 330V
• Temperature Compensated Zener	325mW & 350mW - 6.2V & 9.0V
• Low and Ultra Low Leakage	As low as 5pA



rectifiers

• General Purpose:	50V thru 1600V - 1.0A thru 40A
• Fast Recovery (<500ns)	50V thru 1000V - 1.0A thru 6.0A
• Ultra Fast Recovery (<100ns)	50V thru 1300V - 1.0A thru 15A
• Super Fast Recovery (<35ns)	100V thru 600V - 1.0A thru 10A
• HyperFast Recovery (<25ns)	200V thru 600V - 1.0A thru 10A
• Schottky	20V thru 200V - 1A thru 75A
• Schottky Bridge	40V thru 200V - 1.0A thru 2.0A
• Bridge	60V thru 1000V - 140mA thru 35A



thyristors

• SCR	25V thru 1200V - 250mA thru 63A
• TRIAC	200V thru 800V - 1.0A thru 40A



protection devices

• Transient Voltage Suppressor (TVS)	200W thru 5000W - 5.0V thru 440V
• ESD Transient Voltage Suppressor	HBM 2KV thru 30KV - 1.5V thru 24V - (Capacitance as low as 0.2pFTYP)

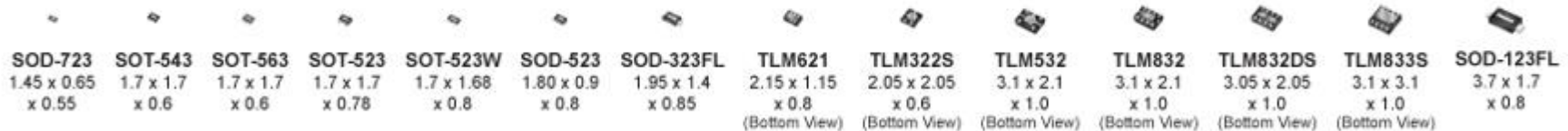


From larger power packages to the industries smallest low power types, Central Semiconductor can satisfy any size requirement.

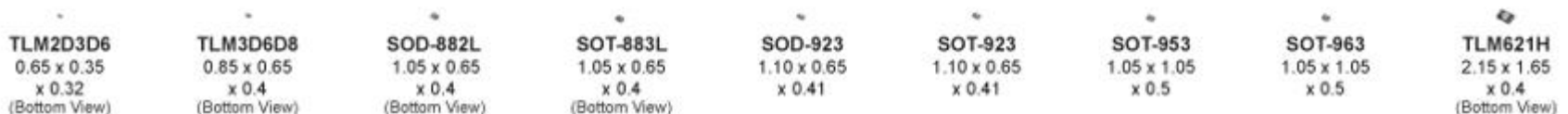
> 1.0mm Profile



< 1.0mm Profile



< 0.5mm Profile



Popular Through-hole packages (over 50 package types still supported)

Hermetically sealed metal can packages



TO-3



TO-66



TO-18



TO-39



TO-72

Axial leaded packages



DO-35



DO-41



GPR-1A



GPR-4AM

Epoxy molded packages



TO-92



TO-237



TO-220



TO-220FP



TO-202

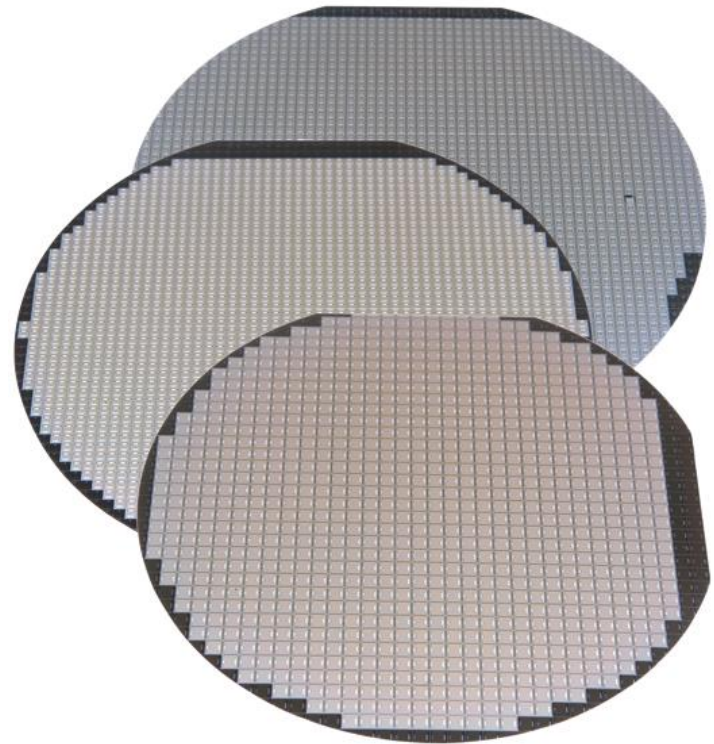


TO-116

Bare Die for space constrained designs...

- Central provides many of its products in bare die for hybrid applications
- This is rather unique in the semiconductor industry

- Device families include:
 - Small signal and power transistors
 - MOSFETs
 - Schottky diodes and rectifiers
 - Zener diodes
 - High speed switching diodes
 - Transient Voltage Suppressors
 - Silicon Carbide devices
 - Fast, UltraFast, SuperFast and HyperFast recovery rectifiers





A Balanced Approach

Traditional discrete components

We are one of the few manufacturers left

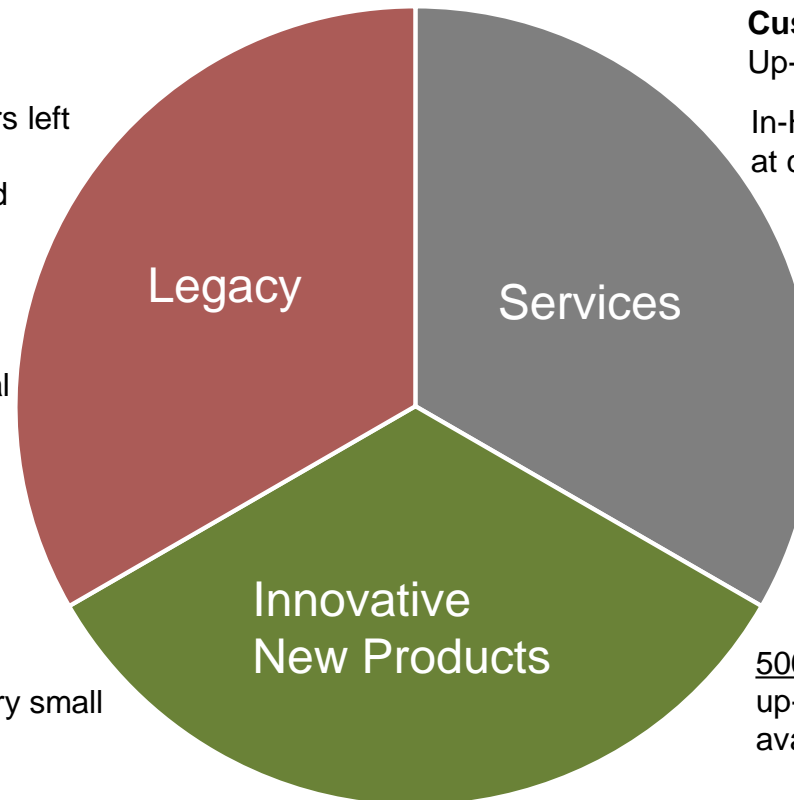
Excellent reason to get qualified and known for our entire offer

JFET complete product family. Nobody has the same portfolio. Ideal for Audio applications!

New Current Limiting Diodes

New Schottky Bridge rectifiers in very small package

SiC technology soon available in bare die, GaN also in package



Customization (package, die, materials)
Up-screening, Multi-Discrete-Modules)

In-House capabilities to do them internally at competitive price and reasonable MOQ

Super Industrial product family for rugged environment

Spacellite product family for Commercial space applications

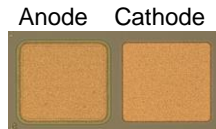
500-800V MOSFETs up to 12A also up-screened for Space applications soon available

Services

Custom Device Development

✓ Bare Die

- Custom diffusion
- Special Metallization
- Lateral die development



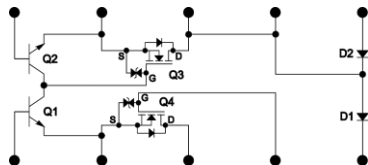
✓ Packaging

- Plastic or Hermetic packages
- Custom lead frames



✓ Interconnect/assembly

- Gold wire bond
- Custom device integration
- MDM™ (Multi-discrete Modules)



✓ Testing

- JAN equivalent to
 - ✓ MIL-PRF-19500
 - ✓ MIL-PRF-38534
- Customer specific testing



Services

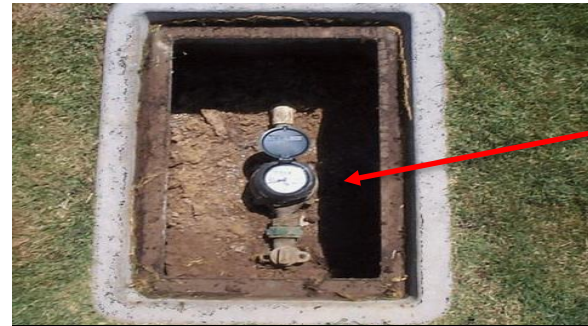
Super Industrial™



- Designed to meet the rigorous environmental conditions standard Industrial products cannot meet.

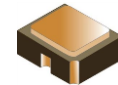


Aviation systems



Moisture sensitive environments

Silver removed from bond to avoid moisture



Down-hole drilling



Deep Sea communications

Custom packaging, interconnect and testing to withstand severe environmental conditions and ensure zero failures



- Discrete Semiconductors large product offer
- Central is an independent semiconductor manufacturer with 45 years of experience!
- Excellent Quality, full product traceability
- Shorter L/T than competition, large inventory, >99% on time delivery!
- Large selection of Legacy devices, obsoleted by most of our competitors but still in full production with us
- Constant innovation with state of the art products periodically launched
- All of our products also offered in Bare Die version
- Super Industrial™ products to address special applications that require stronger performances, suitable for harsh environment
- Spacellite™ products to offer Military and Space grade products
- We have invested in Production and Testing Equipment to provide the best in-house support



alternative energy



- Bypass diode for solar panel
- DC-AC inverter
- DC-DC Boost converter
- Buck converter
- Micro inverter

networking



- Power over Ethernet (PoE)
- Data/User interface
- I/O interface
- Micro controller protection
- Audio amp

consumer



- Data/User interface
- Battery charging & control
- DC-DC converter
- High voltage power supply
- Audio processing
- Power management

industrial • scientific • medical (ISM)



- Power Factor Correction (PFC)
- Motor control
- Rectification
- Filter/Protection
- I/O interface
- DC-DC converter



- DC-AC inverter
- Battery and charging circuit
- Power management
- Data/User interface
- Sense and measure
- DSP/Micro controller protection

mil/aero



- High reliability up-screened devices
- MIL-PRF-38534 bare die equivalents
- MIL-PRF-19500 bare die and packaged equivalents

Typical Applications (see also <https://www.centalsemi.com/applications>)

- **High Quality Audio** – we have an unparalleled selection of JFETs, extremely interesting for excellent noise performances

Microphones, headsets, amplifiers, etc

- **Military/Avionics** – the combination of legacy products, flexibility with customizations, Super Industrial concept for harsh environments, makes us the perfect partner for these customers

TVS protection, power supplies, EW and many others

- **Space** – *Spacelite* approach with flexible up-screening makes us the ideal partner for Commercial Space applications requiring excellent price/quality ratio. 45 year of experience and long heritage are extremely important in this market.

Payloads, Solar Panels, launchers, satellite and many others

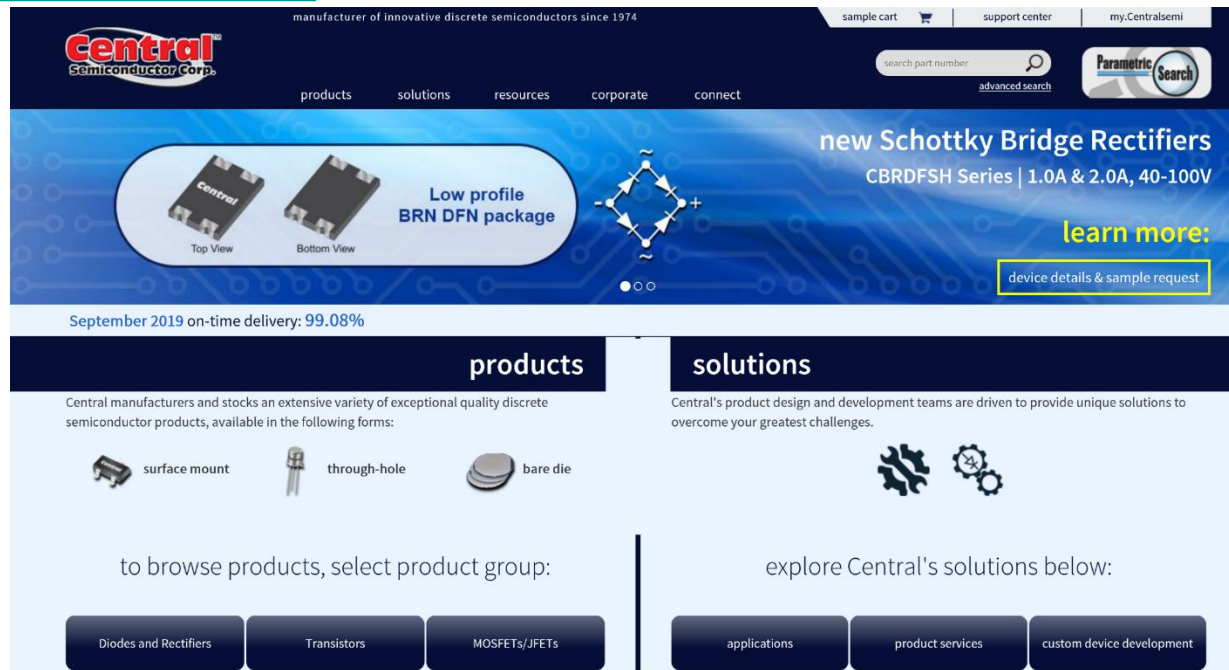
- **Industrial/Scientific** – large selection of discrete products, L/T shorter than competition, capability to customize for reasonable volume, superior quality, full product traceability are all key parameters in this market.

Motor control, Power Supply, PFC, Lighting, IoT, Automation, Submarine cables, Medical Instrumentation, UPS and many others

- **Consumer** – We can be successful also in the most competitive, large volume, commodity applications, in particular when customer requires a level of customization to solve a problem and improve the overall efficiency.

Energy meters, Power over Ethernet, Set Top Box, Networking, Home appliance, Coffee machine, cameras, smartphones and many others

- Completely redesigned website www.centrasemi.com with the possibility to get all information on Products (including Parametric Search) and Applications
- Full access to all Brochures at www.centrasemi.com/literature
- Technical Questions and FA online procedure
- Possibility to get Trainings, PCN notice and additional material by subscribing to <https://my.centrasemi.com/>



Central is a well established US semiconductor manufacturer, with 45 year of experience and totally independent. How many change their focus or ownership, leaving customers alone?

With our broad range of discrete products, virtually every customer can be interested in Central

We have proved our value being qualified with top level OEMs around the world for many years.

Quality is our focus. 100% testing at wafer and packaged product level

If a customer only cares about low price we may not be the first partner, but if they need reliability, quality, support, flexibility and customization, we may win any kind of business in the discrete semiconductor market.

Other suppliers may be involved in several fields, but for us:



If you don't find what you need...



challenges are welcome!



Service is our passion
2019

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