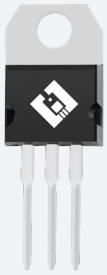
CoolCAD
ELECTRONICS
SiC for the rest of us

SiC POWER DISCRETES



CoolCAD Power MOSFETs exceed power, efficiency and portability capabilities of standard silicon devices and are available in a variety of breakdown voltages (650V, 1200V, 1700V & 3300V) and current ratings. They have low on-resistance and low leakage in the blocking state. Fabricated on high-quality SiC epitaxial layers, our proprietary fabrication process includes carefully chosen annealing procedures to ensure high-quality SiC-SiO_2 gate oxide dielectric layer. The doping profile, neck region and edge termination ensure extremely low Ron and high breakdown voltage.

SiC Solutions for Demanding Industries

CoolCAD designs and fabricates SiC semiconductor devices for a variety of industries, each with their own demanding specifications. However, they all have one thing in common – they need to operate reliably and efficiently in harsh environments.

GREEN ENERGY

MILITARY & DEFENSE

AUTOMOTIVE

PUBLIC INFRASTRUCTURES

DATA CENTERS

POWER SUPPLIES

INDUSTRIAL EQUIPMENT

AEROSPACE

POWER GENERATION

650–1200V

FET Type	N-Channel
Technology	SiC MOSFET
Drain to Source Voltage (Vdss)	650 – 1200
Current - Continuous Drain (Id) at 25°C	5 – **100A** (Ta)
Drive Voltage (Max Rds On, Min Rds On)	15 – 20V
Rds On at Id, Vgs	20 – 500mOhm
Vgs(th) at Id/10K	2 – 3V
Gate Charge (Qg) at Vgs	10 – 50nC
Vgs	15 – 20V, -5 – -8V
Input Capacitance (Ciss) at Vds	200 – 2500pF at 200V
FET Feature	Standard
Technology	100 – 300W (Tc)
Operating Temperature	175 – 230°C (Tj)
Mounting Type	Through Hole
Supplier Device Package	TO-247
Package / Case	TO-247-3L/4L and SOT

1200–1700V

FET Type	N-Channel
Technology	SiC MOSFET
Drain to Source Voltage (Vdss)	1200 – 1700V
Current - Continuous Drain (Id) at 25°C	5 – **80A** (Ta)
Drive Voltage (Max Rds On, Min Rds On)	15 – 20V
Rds On at Id, Vgs	50 – 1000mOhm
Vgs(th) at Id/10K	2 – 3V
Gate Charge (Qg) at Vgs	10 – 50nC
Vgs	15 – 20V, -5 – -8V
Input Capacitance (Ciss) at Vds	400 – 2500pF at 200V
FET Feature	Standard
Technology	100 – 300W (Tc)
Operating Temperature	175 – 230°C (Tj)
Mounting Type	Through Hole
Supplier Device Package	TO-247
Package / Case	TO-247-3L/4L and SOT

1700–3300V

FET Type	N-Channel
Technology	SiC MOSFET
Drain to Source Voltage (Vdss)	1700 – 3300V
Current - Continuous Drain (Id) at 25°C	5 – **60A** (Ta)
Drive Voltage (Max Rds On, Min Rds On)	15 – 20V
Rds On at Id, Vgs	80 – 5500mOhm
Vgs(th) at Id/10K	2 – 3V
Gate Charge (Qg) at Vgs	10 – 50nC
Vgs	15 – 20V, -5 – -8V
Input Capacitance (Ciss) at Vds	600 – 2500pF at 200V
FET Feature	Standard
Technology	100 – 300W (Tc)
Operating Temperature	175°C (Tj)
Mounting Type	Through Hole
Supplier Device Package	TO-247
Package / Case	TO-247-3L/4L and SOT

>3300V

FET Type	N-Channel
Technology	SiC MOSFET
Drain to Source Voltage (Vdss)	1200V
Current - Continuous Drain (Id) at 25°C	5 – **40A** (Ta)
Drive Voltage (Max Rds On, Min Rds On)	15 – 20V
Rds On at Id, Vgs	120 – 7500mOhm
Vgs(th) at Id/10K	2 – 3V
Gate Charge (Qg) at Vgs	10 – 50nC
Vgs	15 – 20V, -5 – -8V
Input Capacitance (Ciss) at Vds	800 – 2500pF at 200V
FET Feature	Standard
Technology	100 – 300W (Tc)
Operating Temperature	175°C (Tj)
Mounting Type	Through Hole
Supplier Device Package	TO-247
Package / Case	TO-247-4L

Technology - SiC:

- MOSFET (N)
- IGBT (N and P)
- Diode (JBS, MPS, TVS)
- JFET (N and P)
- Normally-On and Normally-Off

Package:

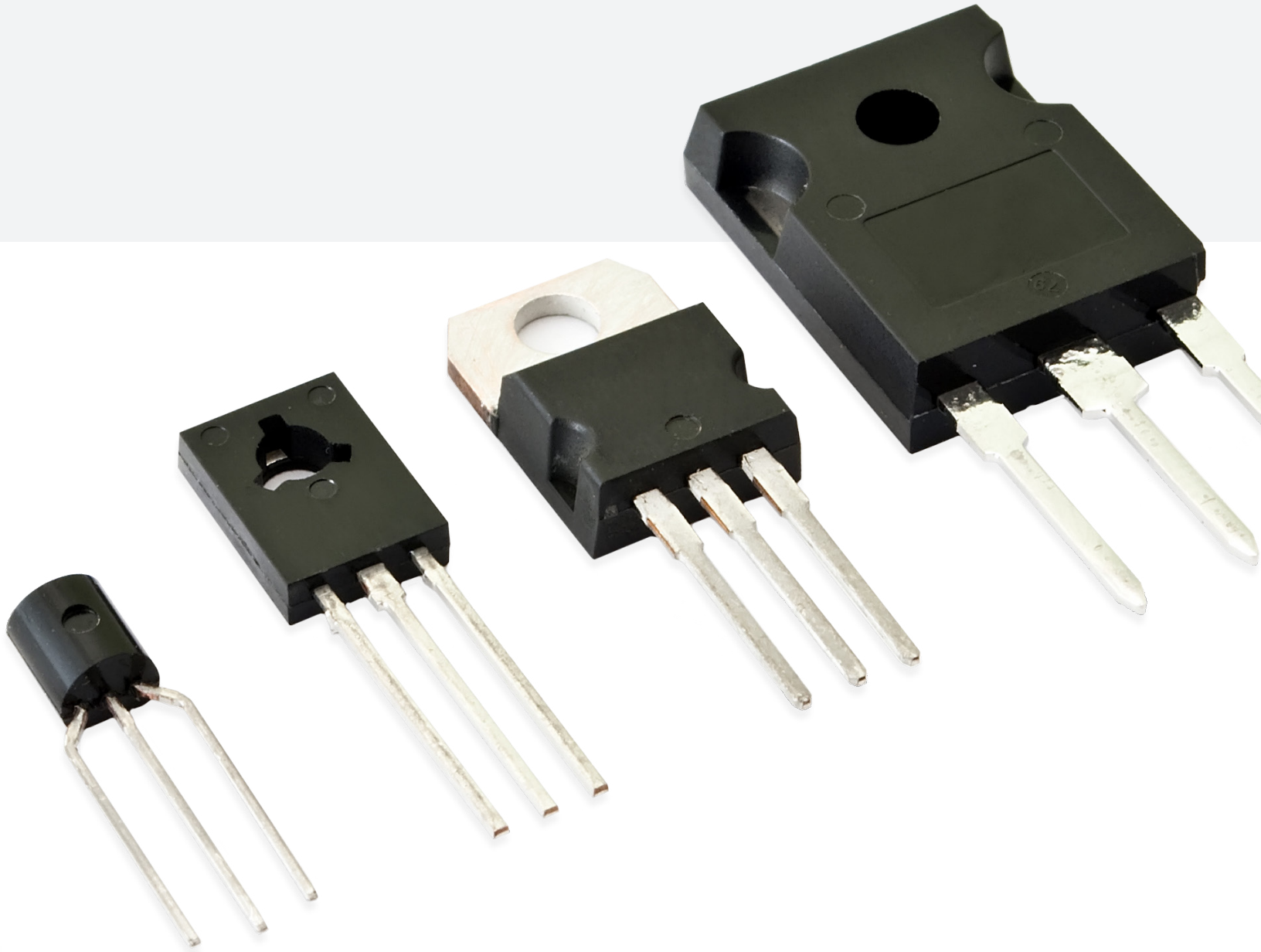
- TO 247 3L / 4L
- TO 252 / 263
- D2PAK
- SOT 23 / 89 & TSOT 223
- SOT 227 & VPM (Modules)

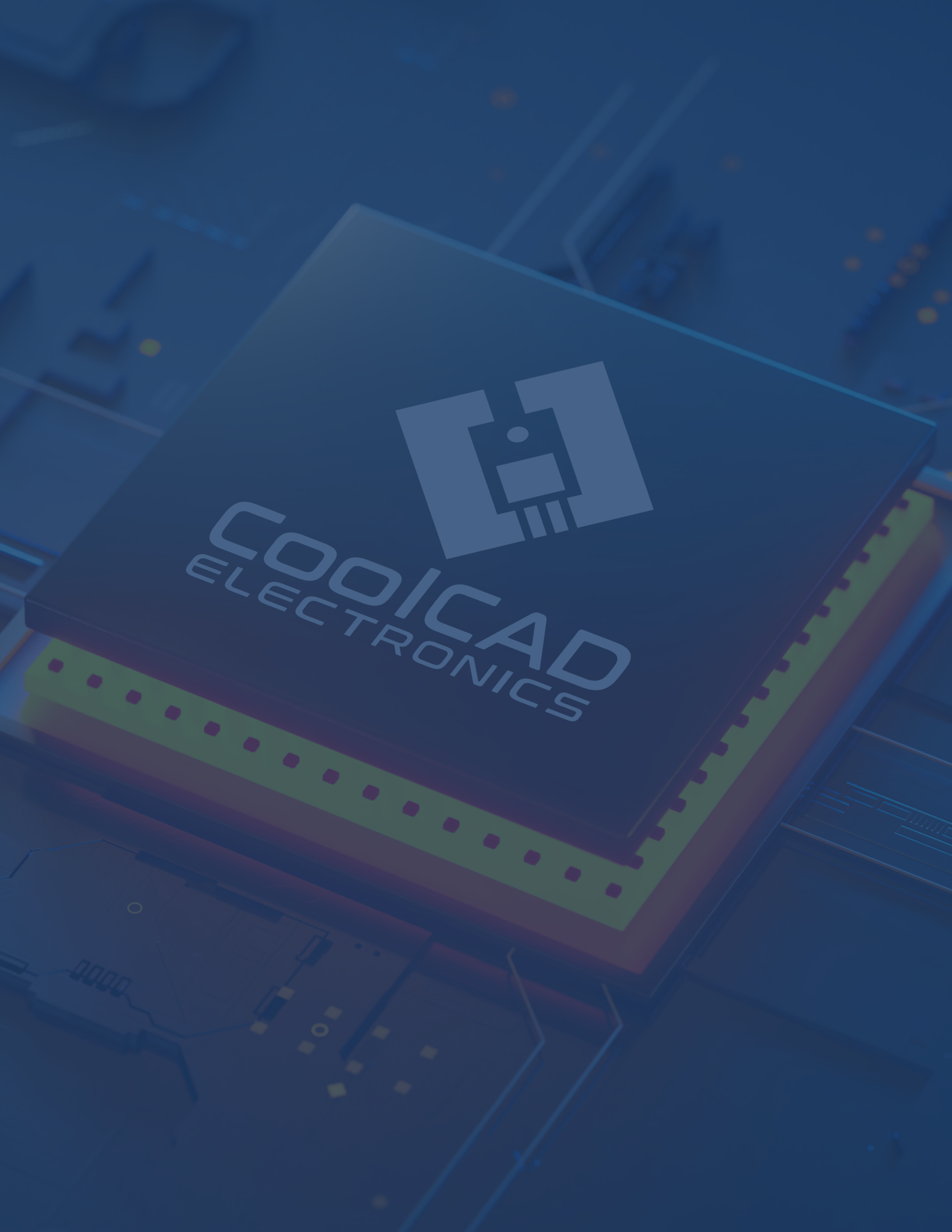
Voltage Rating:

- 650 – 3300V Standard and Custom
- >3300V Custom

Current:

- <1A to >100A in package
- <1A to >300A on die / module




COOICAD
ELECTRONICS

CoolCAD ELECTRONICS

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Our CoolCAD Team possess a unique combination of expertise in electronics, excelling in semiconductor physics, fabrication, design, and integrated and board-level circuit development and manufacturing. Together we have published over 100 research papers in professional scientific and engineering journals and have multiple patents on our key discoveries in the area of wide bandgap SiC electronics.