High-Performance 80V to 150V N-Channel MOSFETs

REXFET™ POWER MOSFETs

MOSFETs for High-Current, High-Efficiency Power Conversion and Motor Control

With over 30 years' experience supplying power MOSFETs to the Automotive, Industrial, Infrastructure and Consumer markets, Renesas has a proven track record for high-performance operation and long-term reliability.

The new REXFET power MOSFET families utilize split-gate technology and are available in a range of packaging options to achieve low on-resistance (Rdson) and low figure-of-merit (FOM) to reduce system losses and increase power density.

Market Leading Split-Gate Technology

- Low FOM / low RSP for low loss performance and high power density
- Outstanding ruggedness with high Avalanche capability and high SOA ruggedness
- 80V, 100V and 150V families

High-Power Density Package Lineup

- Copper clip bonding for high current, low inductance and low package resistance
- Top-side cooling options for superior thermal performance
- Broad package portfolio

Proven History and High Quality

- Both AEC-Q101 and JEDEC standard reliability
- Exceptional quality <0.05 DPPM with billions of units shipped
- Wettable flank technology for outstanding solder reliability

Benefits

- Split-gate technology enables lower Rdson at better cost
- High-efficiency and high-power density designs with small, thermally-capable package technology
- Built for reliability, REXFET MOSFETs are rigorously qualified to meet JEDEC industrial standards and AEC-Q101 automotive certification
- Standard package and pinout allow for easy drop-in replacement

Target Markets

- Industrial
  - DC motor drive, e-Mobility, power tools, robotics
  - Industrial power supplies
  - Battery management systems
- Automotive
  - Motor drive: 3-phase and full-bridge
  - OBC and DC/DC converter
  - Zonal control, power distribution, switches

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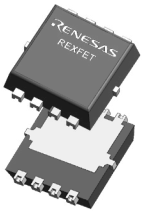
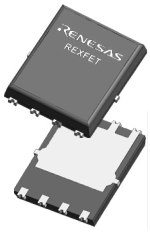
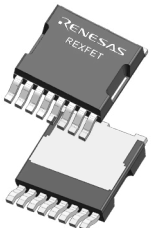
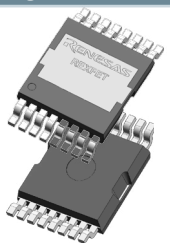
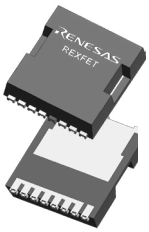
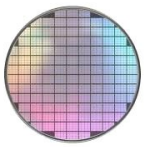
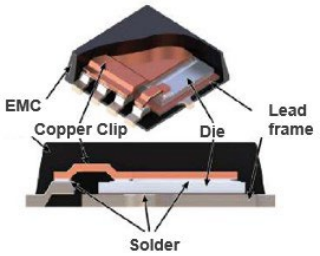
REXFET Packaging

Small Footprint		High Current			Modules
					
3x3 µSO8-FL WF	PQFN 56	TOLG	TOLT	TOLL	Bare Die

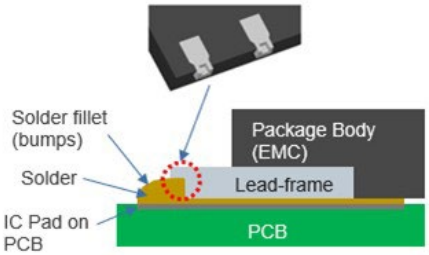
Copper Clip Bonding

Copper clip bonding enables a large connection area to the die, reducing the overall package resistance and parasitic inductance. This enables the FET to operate at higher drain current and higher switching frequencies. Another benefit is low thermal resistance, which helps prevent hot spots inside the FET.



Wettable Flank

Wettable flank packaging refers to the modification of the package's exposed leads that all solder to flow up the sides, creating a visible bump or "fillet" between the lead and the PCB pad. This allows for visual inspection or AOI and improved solder joint reliability.



REXFET Family Overview

Breakdown Voltage	On-Resistance	Drain Current	Gate Drive	Qualification	Package
80V	1.06 – 17.2 mΩ	30 – 360A	Standard (Vth=2V-4V)	Automotive, Industrial	3x3 µSO8-FL WF, 5x6 SO8-FL WF, TOLL, TOLT
100V	1.2 – 21 mΩ	20 – 350A			3x3 µSO8-FL WF, 5x6 SO8-FL WF, TOLL, TOLG, TOLT
150V	3.4 – 3.9 mΩ	190 – 200A			TOLL, TOLT

Bare die: Contact Renesas for availability.

For more information including tools, models, documentation and samples, visit renesas.com/mosfets

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