

## Product Overview

### FCP600N65S3R0: Power MOSFET, N-Channel, SUPERFET® III, Easy Drive, 650 V, 6 A, 600 mΩ, TO-220

For complete documentation, see the data sheet.

SUPERFET III MOSFET is ON Semiconductor's brand-new high voltage super-junction (SJ) MOSFET family that is utilizing charge balance technology for outstanding low on-resistance and lower gate charge performance. This advanced technology is tailored to minimize conduction loss, provide superior switching performance, and withstand extreme dv/dt rate. Consequently, SUPERFET III MOSFET Easy drive series helps manage EMI issues and allows for easier design implementation.

#### Features

- 700 V @ T<sub>J</sub> = 150 °C
- Low Effective Output Capacitance (Typ. C<sub>oss</sub>(eff.) = 127 pF)
- Ultra Low Gate Charge (Typ. Q<sub>g</sub> = 11 nC)
- Optimized Capacitance
- 100% Avalanche Tested
- RoHS Compliant
- Typ. R<sub>DS(on)</sub> = 493 mΩ
- Internal Gate Resistance: 0.9 Ω

#### Applications

- Computing
- Consumer
- Industrial

#### Benefits

- Higher system reliability at low temperature operation
- Low switching loss
- Low switching loss
- Lower peak V<sub>ds</sub> and lower V<sub>gs</sub> oscillation

#### End Products

- Notebook / Desktop computer / Game consol
- Telecom / Server
- LCD / LED TV
- LED Lighting / Ballast
- Adapter

### Part Electrical Specifications

| Product       | Pricing (\$/Unit) | Compliance             | Status | Channel Polarity | Configuration | V <sub>DS(BR)</sub> Min (V) | V <sub>GS</sub> Max (V) | V <sub>GS(th)</sub> Max (V) | I <sub>D</sub> Max (A) | P <sub>D</sub> Max (W) | R <sub>DS(on)</sub> Max @ V <sub>GS</sub> = 2.5 V (mΩ) | R <sub>DS(on)</sub> Max @ V <sub>GS</sub> = 4.5 V (mΩ) | R <sub>DS(on)</sub> Max @ V <sub>GS</sub> = 10 V (mΩ) | Q <sub>g</sub> Typ @ V <sub>GS</sub> = 4.5 V (nC) | Q <sub>g</sub> Typ @ V <sub>GS</sub> = 10 V (nC) | C <sub>iss</sub> Typ (pF) | Package Type |
|---------------|-------------------|------------------------|--------|------------------|---------------|-----------------------------|-------------------------|-----------------------------|------------------------|------------------------|--|--|---|---|--|---------------------------|--------------|
| FCP600N65S3R0 | 0.593             | Pb-free<br>Halide free | Active | N-Channel        | Single        | 650                         | 30                      | 4.5                         | 6                      | 54                     | -  | -  | 600   | -   | 11   | 465                       | TO-220-3     |

For more information please contact your local sales support at [www.onsemi.com](http://www.onsemi.com).

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