

## Product Overview

### FCH125N65S3R0: Power MOSFET, N-Channel, SUPERFET® III, Easy Drive, 650 V, 24 A, 125 mΩ , TO-247

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 @  $T_J = 150\text{ }^{\circ}\text{C}$
- Low Effective Output Capacitance (Typ.  $C_{oss}(eff.) = 439\text{ pF}$ )
- Ultra Low Gate Charge (Typ.  $Q_g = 46\text{ nC}$ )
- Optimized Capacitance
- 100% Avalanche Tested
- RoHS Compliant
- Typ.  $R_{DS}(on) = 105\text{ m}\Omega$
- Internal Gate Resistance: 0.5  $\Omega$

#### Benefits

- Higher system reliability at low temperature operation
- Low switching loss
- Low switching loss
- Lower peak  $V_{ds}$  and lower  $V_{gs}$  oscillation

#### Applications

- Telecommunication
- Cloud system
- Industrial

#### End Products

- Telecom power
- Server power
- EV charger
- Solar / UPS

### Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Channel Polarity	Configuration	$V_{DSS}^{(BR)}$ Min (V)	$V_{GS}^{Max}$ (V)	$V_{GS}^{(th)}$ Max (V)	$I_D^{Max}$ (A)	$P_D^{Max}$ (W)	$R_{DS(on)}^{n}^{Max}$ @ $V_{GS} = 2.5\text{ V}$ (m $\Omega$ )	$R_{DS(on)}^{n}^{Max}$ @ $V_{GS} = 4.5\text{ V}$ (m $\Omega$ )	$R_{DS(on)}^{n}^{Max}$ @ $V_{GS} = 10\text{ V}$ (m $\Omega$ )	$Q_g^{Typ}$ @ $V_{GS} = 4.5\text{ V}$ (nC)	$Q_g^{Typ}$ @ $V_{GS} = 10\text{ V}$ (nC)	$C_{iss}^{Typ}$ (pF)	Package Type
FCH125N65S3R0-F155	1.716	Pb-free Halide free non AEC-Q and PPAP	Active	N-Channel	Single	650	30	4.5	24	181	-	-	105	-	46	1940	TO-247-3

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

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