

## Product Overview

### NTHL040N65S3F: Power MOSFET, N-Channel, SUPERFET® III, FRFET®, 650 V, 65 A, 40 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 is very suitable for the various power systems for miniaturization and higher efficiency. SUPERFET III FRFET MOSFET's optimized reverse recovery performance of body diode can remove additional component and improve system reliability.

#### Features

- 700 V @ T<sub>J</sub> = 150 °C
- Ultra Low Gate Charge (Typ. Q<sub>g</sub> = 158 nC)
- Low Effective Output Capacitance (Typ. C<sub>oss</sub>(eff.) = 1366 pF)
- Excellent body diode performance (low Q<sub>rr</sub>, robust body diode)
- Optimized Capacitance
- RoHS Compliant
- 100% Avalanche Tested
- Typ. R<sub>DS(on)</sub> = 32 mΩ

#### Applications

- Telecommunication
- Cloud system
- Industrial

#### Benefits

- Higher system reliability at low temperature operation
- Lower switching loss
- Lower switching loss
- Higher system reliability in LLC and Phase shift full bridge circuit
- Lower peak V<sub>ds</sub> and lower V<sub>gs</sub> oscillation

#### End Products

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

### 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
NTHL040N65S3F	4.7952	Pb-free	Active	N-Channel	Single	650	30	5	65	446	-	-	40	-	158	5940	TO-247-3

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

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