

## Product Overview

### NTPF082N65S3F: Power MOSFET, N-Channel, SUPERFET® III, FRFET®, 650 V, 40 A, 82 mΩ , TO-220F

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 @  $T_{J} < 150^{\circ}\text{C}$
- Ultra Low Gate Charge (Typ.  $Q_g = 70 \text{ nC}$ )
- Low Effective Output Capacitance (Typ.  $C_{oss}(\text{eff.}) = 680 \text{ pF}$ )
- Optimized Capacitance
- Excellent body diode performance (low  $Q_{rr}$ , robust body diode)
- Typ.  $R_{DS(\text{on})} = 70 \text{ m}\Omega$
- 100% Avalanche Tested
- RoHS Compliant

#### Applications

- Telecommunication
- Cloud system
- Industrial

#### Benefits

- Higher system reliability at low temperature operation
- Lower switching loss
- Lower switching loss
- Lower peak Vds and lower Vgs oscillation
- Higher system reliability in LLC and Phase shift full bridge circuit

#### End Products

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

### Part Electrical Specifications

Product	Compliance	Status	Channel Polarity	Configuration	$V_{(BR)DSS} \text{ Min (V)}$	$V_{GS} \text{ Max (V)}$	$V_{GS(th)} \text{ Max (V)}$	$I_D \text{ Max (A)}$	$P_D \text{ Max (W)}$	$R_{DS(on), \text{ Max}} @ V_{GS} = 2.5 \text{ V (m}\Omega\text{)}$	$R_{DS(on), \text{ Max}} @ V_{GS} = 4.5 \text{ V (m}\Omega\text{)}$	$R_{DS(on), \text{ Max}} @ V_{GS} = 10 \text{ V (m}\Omega\text{)}$	$Q_g \text{ Typ} @ V_{GS} = 4.5 \text{ V (nC)}$	$Q_g \text{ Typ} @ V_{GS} = 10 \text{ V (nC)}$	$C_{iss} \text{ Typ (pF)}$	Package Type
NTPF082N65S3F	Pb-free Halide free	Active	N-Channel	Single	650	30	5	40	48	-	-	82	-	70	3240	TO-220-3 FullPak

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

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