

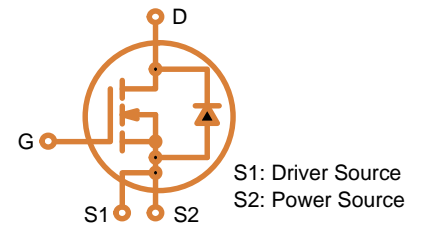
**II** **Q** **I** **e** **(IC)**  
**MOFE** - **Ei e IC**,  
**40** , **1200V** , **M3** ,  
**O-247-4L**  
**N H4L040N120M3**

**Features**

- Typ.  $R_{DS(on)} = 40 \text{ m}\Omega$  @  $V_{GS} = 18 \text{ V}$
- Ultra Low Gate Charge ( $Q_{G(tot)} = 75 \text{ nC}$ )
- High Speed Switching with Low Capacitance ( $C_{oss} = 80 \text{ pF}$ )
- 100% Avalanche Tested
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb-Free 2LI (on second level interconnection)

**Typical Applications**

- Solar Inverters





# NTH4L040N120M3S

**Table 3. ELECTRICAL CHARACTERISTICS** ( $T_J = 25^\circ\text{C}$  unless otherwise specified) (continued)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>SOURCE-DRAIN DIODE CHARACTERISTICS</b>						
Continuous Source-Drain Diode Forward Current	$I_{SD}$	$V_{GS} = -3\text{ V}, T_C = 25^\circ\text{C}$ (Note 6)	-	-	45	A
Pulsed Source-Drain Diode Forward Current (Note 2)	$I_{SDM}$		-	-	134	
Forward Diode Voltage	$V_{SD}$	$V_{GS} = -3\text{ V}, I_{SD} = 20\text{ A}, T_J = 25^\circ\text{C}$	-	4.5	-	V
Reverse Recovery Time	$t_{RR}$	$V_{GS} = -3/18\text{ V}, I_{SD} = 20\text{ A},$ $dI_S/dt = 1000\text{ A}/\mu\text{s}, V_{DS} = 800\text{ V}$ (Note 6)	-	16.8	-	ns
Reverse Recovery Charge	$Q_{RR}$		-	82	-	nC
Reverse Recovery Energy	$E_{REC}$		-	44	-	$\mu\text{J}$
Peak Reverse Recovery Current	$I_{RRM}$		-	9.8	-	A
Charge Time	$T_A$		-	9.6	-	ns
Discharge Time	$T_B$		-	7.2	-	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

5.  $E_{ON}/E_{OFF}$  result is with body diode.

6. Defined by design, not subject to production test.

# NTH4L040N120M3S

## TYPICAL CHARACTERISTICS






TO-247-4LD  
CASE 340CJ  
ISSUE A

DATE 16 SEP 2019

A E A B  
A2 E1  $\emptyset$ p1  
D2

E/2 Q

D D1

$\emptyset$

L1

b2 A1

b1 (3X) L

1 4

e1 b(4X) c

e 2X

$\oplus$  0.254 (M) B A (M)

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