

### General Description

The CMH029N10 is fabricated using an advanced high voltage MOSFET process that is designed to provide excellent RDS(ON) .These devices are well suited for high efficient switched mode power supplies and active power factor correction.

### Features

- Low on-resistance
- Fast Switching
- RoHS Compliant

### Absolute Maximum Ratings

| Symbol                      | Parameter                                  | Rating     | Units            |
|-----------------------------|--------------------------------------------|------------|------------------|
| $V_{DS}$                    | Drain-Source Voltage                       | 100        | V                |
| $V_{GS}$                    | Gate-Source Voltage                        | $\pm 20$   | V                |
| $I_D@T_C=25^\circ\text{C}$  | Continuous Drain Current                   | 150        | A                |
| $I_D@T_C=100^\circ\text{C}$ | Continuous Drain Current                   | 120        | A                |
| $I_{DM}$                    | Pulsed Drain Current                       | 600        | A                |
| EAS                         | Single Pulse Avalanche Energy <sup>1</sup> | 3240       | mJ               |
| $P_D@T_C=25^\circ\text{C}$  | Total Power Dissipation                    | 500        | W                |
| $T_{STG}$                   | Storage Temperature Range                  | -55 to 175 | $^\circ\text{C}$ |
| $T_J$                       | Operating Junction Temperature Range       | -55 to 175 | $^\circ\text{C}$ |

### Thermal Data

| Symbol          | Parameter                                         | Typ. | Max. | Unit                      |
|-----------------|---------------------------------------------------|------|------|---------------------------|
| $R_{\theta JA}$ | Thermal Resistance Junction-ambient(Steady-State) | ---  | 40   | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JC}$ | Thermal Resistance Junction-case(Steady-State)    | ---  | 0.3  | $^\circ\text{C}/\text{W}$ |

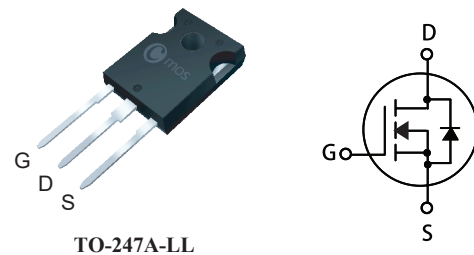
### Product Summary

| BVDSS | RDSON         | ID   |
|-------|---------------|------|
| 100V  | 2.9m $\Omega$ | 150A |

### Applications

- DC-AC converters
- SMPS Power
- UPS (Uninterruptible Power Supply)

### TO-247A-LL Pin Configuration



| Type      | Package | Marking   |
|-----------|---------|-----------|
| CMH029N10 | TO-247  | CMH029N10 |

Electrical Characteristics ( $T_J=25^{\circ}\text{C}$  , unless otherwise noted)

| Symbol       | Parameter                         | Conditions                            | Min. | Typ.  | Max.      | Unit      |
|--------------|-----------------------------------|---------------------------------------|------|-------|-----------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage    | $V_{GS}=0V$ , $I_D=250\mu A$          | 100  | ---   | ---       | V         |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance | $V_{GS}=10V$ , $I_D=28A$              | ---  | 2.4   | 2.9       | $m\Omega$ |
| $V_{GS(th)}$ | Gate Threshold Voltage            | $V_{GS}=V_{DS}$ , $I_D=250\mu A$      | 2    | ---   | 4         | V         |
| $I_{DSS}$    | Drain-Source Leakage Current      | $V_{DS}=100V$ , $V_{GS}=0V$           | ---  | ---   | 1         | $\mu A$   |
| $I_{GSS}$    | Gate-Source Leakage Current       | $V_{GS}=\pm 20V$ , $V_{DS}=0V$        | ---  | ---   | $\pm 100$ | nA        |
| $g_{fs}$     | Forward Transconductance          | $V_{DS}=10V$ , $I_D=25A$              | ---  | 60    | ---       | S         |
| $Q_g$        | Total Gate Charge                 | $I_D=50A$                             | ---  | 150   | ---       | nC        |
| $Q_{gs}$     | Gate-Source Charge                | $V_{DS}=50V$                          | ---  | 42    | ---       |           |
| $Q_{gd}$     | Gate-Drain Charge                 | $V_{GS}=10V$                          | ---  | 30    | ---       |           |
| $T_{d(on)}$  | Turn-On Delay Time                | $V_{DD}=50V$                          | ---  | 35    | ---       | ns        |
| $T_r$        | Rise Time                         | $I_D=50A$                             | ---  | 20    | ---       |           |
| $T_{d(off)}$ | Turn-Off Delay Time               | $R_G=3\Omega$                         | ---  | 125   | ---       |           |
| $T_f$        | Fall Time                         | $V_{GS}=10V$                          | ---  | 50    | ---       |           |
| $C_{iss}$    | Input Capacitance                 | $V_{DS}=25V$ , $V_{GS}=0V$ , $f=1MHz$ | ---  | 15000 | ---       | pF        |
| $C_{oss}$    | Output Capacitance                |                                       | ---  | 4000  | ---       |           |
| $C_{rss}$    | Reverse Transfer Capacitance      |                                       | ---  | 850   | ---       |           |

## Diode Characteristics

| Symbol   | Parameter                 | Conditions                                         | Min. | Typ. | Max. | Unit |
|----------|---------------------------|----------------------------------------------------|------|------|------|------|
| $I_S$    | Continuous Source Current | $V_G=V_D=0V$ , Force Current                       | ---  | ---  | 150  | A    |
| $I_{SM}$ | Pulsed Source Current     |                                                    | ---  | ---  | 600  | A    |
| $V_{SD}$ | Diode Forward Voltage     | $V_{GS}=0V$ , $I_S=28A$ , $T_J=25^{\circ}\text{C}$ | ---  | 0.81 | 1.2  | V    |

Notes:

1.The EAS data shows Max. rating .The test condition is  $V_{DS}=80V$  ,  $V_{GS}=10V$  ,  $L=20mH$  ,  $I_{AS}=18A$ .

This product has been designed and qualified for the consumer market.

Cmos assumes no liability for customers' product design or applications.

Cmos reserves the right to improve product design ,functions and reliability without notice.

## Typical Characteristics

