

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

|              |             |                |
|--------------|-------------|----------------|
| ▶ Domestic   | Part Number | EV-IRFP260N-T8 |
| ▶ Overseas   | Part Number | IRFP260N       |
| ▶ Equivalent | Part Number | IRFP260N       |

"T8" means TO-247

EV is the abbreviation of name EVVO

## N-Channel Enhancement Mode Power MOSFET

### Description

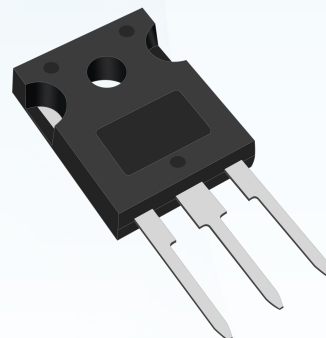
The EV-IRFP260N-T8 uses advanced trench technology and design to provide excellent  $R_{DS(ON)}$  with low gate Charge It can be used in a wide variety of applications.

### Application

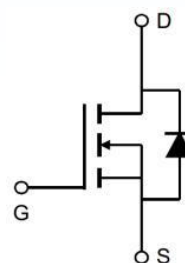
- ☐ Power switching application.
- ☐ Hard switched and high frequency circuits.
- ☐ Uninterruptible power supply.

### Features

- ☐  $V_{DS} = 200V, I_D = 50A$
- ☐  $R_{DS(ON)} : 50m\Omega @ V_{GS}=10V$
- ☐ Low gate charge.
- ☐ Green device available.
- ☐ Advanced high cell density trench technology for ultra low on-resistance.
- ☐ Excellent package for good heat dissipation.



Marking and pin assignment



N-Channel MOSFET

### Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ unless otherwise noted)

| Symbol                        | Parameter                                          | Rating     | Units              |
|-------------------------------|----------------------------------------------------|------------|--------------------|
| $V_{DS}$                      | Drain- Source Voltage                              | 200        | V                  |
| $V_{GS}$                      | Gate Source Voltage                                | $\pm 20$   | V                  |
| $I_D @ T_C=25^\circ\text{C}$  | Continuous Drain Current <sup>1</sup>              | 50         | A                  |
| $I_D @ T_C=100^\circ\text{C}$ | Continuous Drain Current <sup>1</sup>              | 35         | A                  |
| $I_{DM}$                      | Pulsed Drain Current <sup>3</sup>                  | 200        | A                  |
| $E_{AS}, E_{AR}$              | Avalanche Energy <sup>5</sup>                      | 560        | mJ                 |
| $I_{AS}, I_{AR}$              | Avalanche Current <sup>5</sup>                     | 50         | A                  |
| $P_D @ T_C=25^\circ\text{C}$  | Total Power Dissipation <sup>4</sup>               | 300        | W                  |
| $T_{STG}$                     | Storage Temperature Range                          | -55 to 175 | $^\circ\text{C}$   |
| $T_J$                         | Operating Junction Temperature Range               | -55 to 175 | $^\circ\text{C}$   |
| $R_{\theta JC}$               | Thermal Resistance, Junction-to- Case <sup>2</sup> | 0.5        | $^\circ\text{C/W}$ |
| $R_{\theta JA}$               | Thermal Resistance Junction-Ambient <sup>2</sup>   | 40         | $^\circ\text{C/W}$ |

**Electrical Characteristics (TC=25°C unless otherwise noted)**

| Symbol       | Parameter                                      | Conditions                                                 | Min. | Typ. | Max. | Unit |
|--------------|------------------------------------------------|------------------------------------------------------------|------|------|------|------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage                 | $V_{GS}=0V, I_D=250\mu A$                                  | 200  | ---  | ---  | V    |
| $R_{DS(ON)}$ | Static Drain-Source On-Resistance <sup>2</sup> | $V_{GS}=10V, I_D=10A$                                      | ---  | 50   | ---  | mΩ   |
| $V_{GS(th)}$ | Gate Threshold Voltage                         | $V_{GS}=V_{DS}, I_D=250\mu A$                              | 2    | 3    | 4    | V    |
| $I_{DSS}$    | Drain-Source Leakage Current                   | $V_{DS}=200V, V_{GS}=0V, T_J=25^\circ C$                   | ---  | ---  | 1    | μA   |
|              |                                                | $V_{DS}=160V, V_{GS}=0V, T_J=125^\circ C$                  | ---  | ---  | 10   |      |
| $I_{GSS}$    | Gate-Source Leakage Current                    | $V_{GS}=\pm 20V, V_{DS}=0V$                                | ---  | ---  | ±100 | nA   |
| $g_{FS}$     | Forward Transconductance                       | $V_{DS}=10V, I_D=10A$                                      | ---  | 27   | ---  | S    |
| $Q_g$        | Total Gate Charge                              | $V_{DS}=160V, V_{GS}=10V, I_D=28A$                         | ---  | 234  | ---  | nC   |
| $Q_{gs}$     | Gate-Source Charge                             |                                                            | ---  | 38   | ---  |      |
| $Q_{gd}$     | Gate-Drain Charge                              |                                                            | ---  | 110  | ---  |      |
| $T_{d(on)}$  | Turn-On Delay Time                             | $V_{DD}=100V, I_{DS}=28A,$<br>$V_{GEN}=10V, R_G=1.8\Omega$ | ---  | 17   | ---  | nS   |
| $T_r$        | Rise Time                                      |                                                            | ---  | 60   | ---  |      |
| $T_{d(off)}$ | Turn-Off Delay Time                            |                                                            | ---  | 55   | ---  |      |
| $T_f$        | Fall Time                                      |                                                            | ---  | 48   | ---  |      |
| $C_{iss}$    | Input Capacitance                              | $V_{DS}=30V, V_{GS}=0V, f=1MHz$                            | ---  | 4057 | ---  | pF   |
| $C_{oss}$    | Output Capacitance                             |                                                            | ---  | 603  | ---  |      |
| $C_{rss}$    | Reverse Transfer Capacitance                   |                                                            | ---  | 161  | ---  |      |

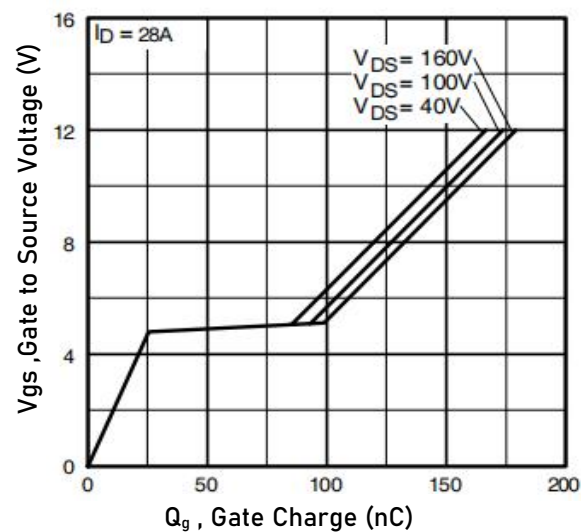
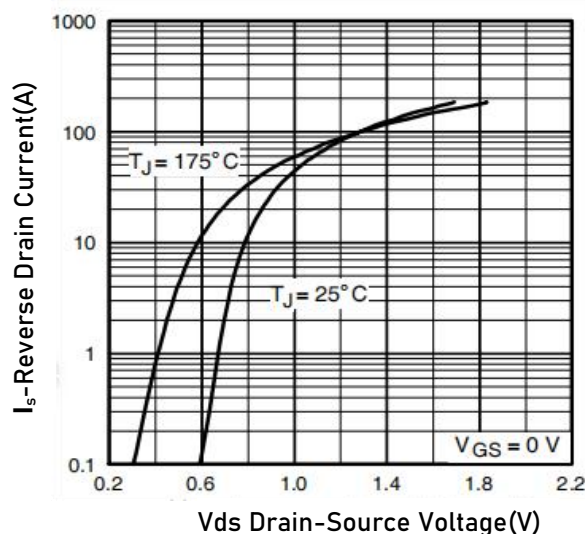
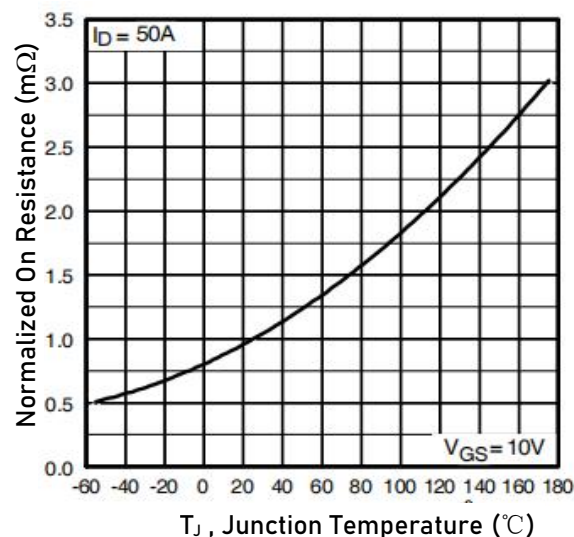
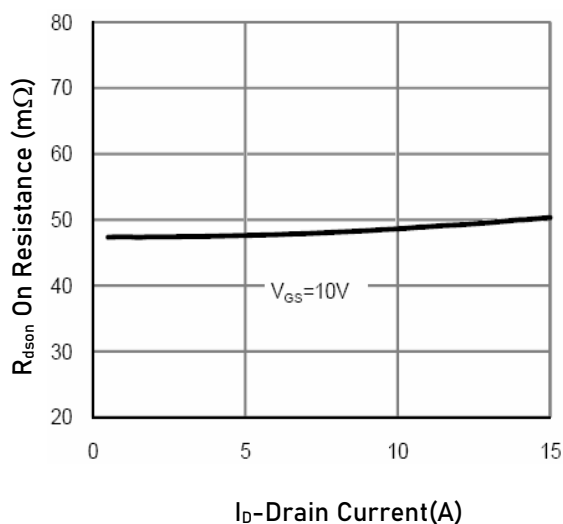
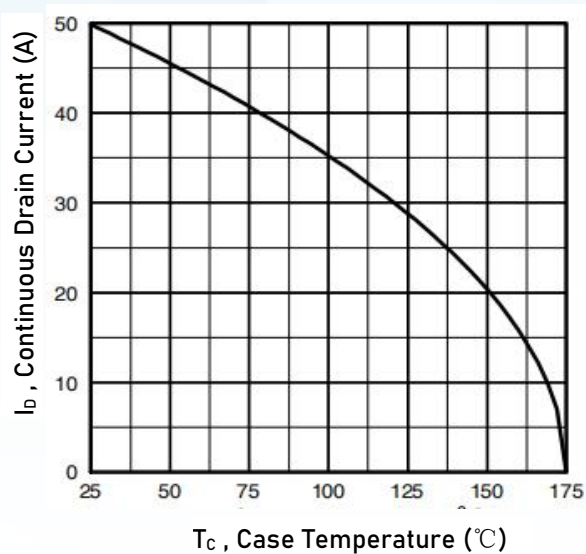
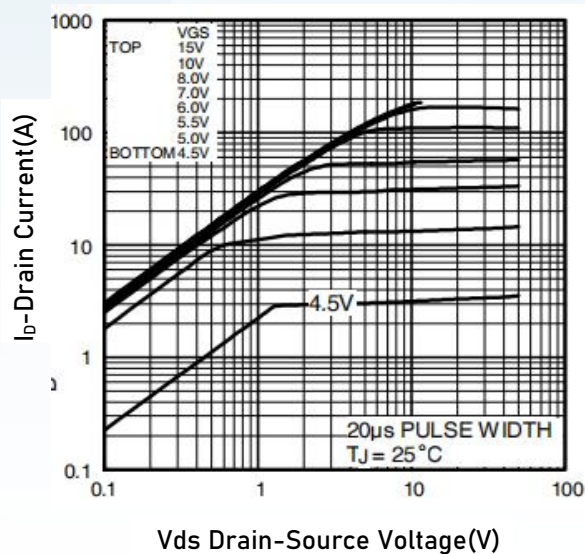
**Diode Characteristics**

| Symbol   | Parameter                                | Conditions                                                   | Min. | Typ. | Max. | Unit |
|----------|------------------------------------------|--------------------------------------------------------------|------|------|------|------|
| $I_S$    | Continuous Source Current <sup>1,4</sup> | $V_G=V_D=0V$                                                 | ---  | ---  | 50   | A    |
| $I_{SM}$ | Pulsed Source Current                    |                                                              | ---  | ---  | 200  | A    |
| $V_{SD}$ | Diode Forward Voltage <sup>2</sup>       | $V_{GS}=0V, I_{SD}=28A, T_J=25^\circ C$                      | ---  | ---  | 1.3  | V    |
| $T_{rr}$ | Reverse Recovery Time                    | $I_S=28A, V_{GS}=10V,$<br>$di/dt=100A/\mu s, T_J=25^\circ C$ | ---  | 268  | ---  | nS   |
| $Q_{rr}$ | Reverse Recovery Charge                  |                                                              | ---  | 1.9  | ---  | μC   |

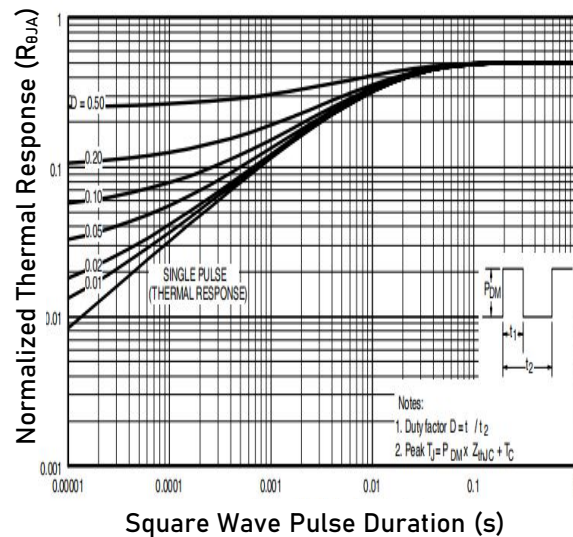
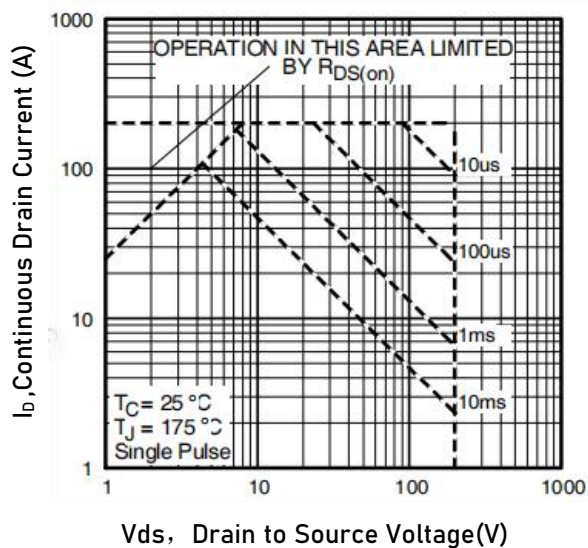
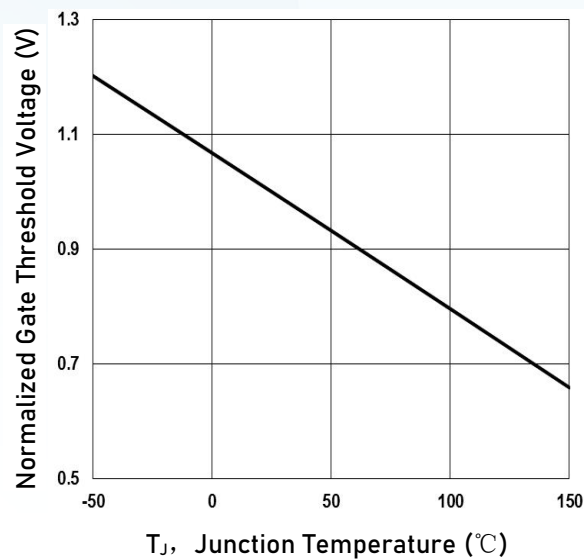
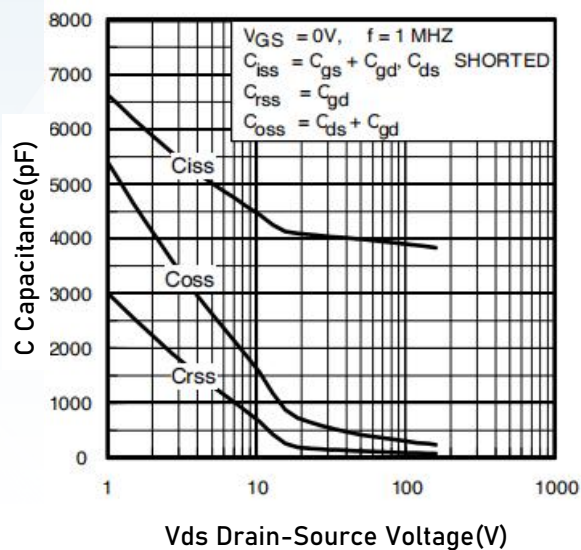
**Notes:**

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. The data is theoretically the same as  $I_D$  and  $I_{DM}$ , in real applications, should be limited by total power dissipation.
5. The EAS test condition is  $V_{DD}=30V, V_{GS}=10V, L=1.5mH, I_{AS}=50A$

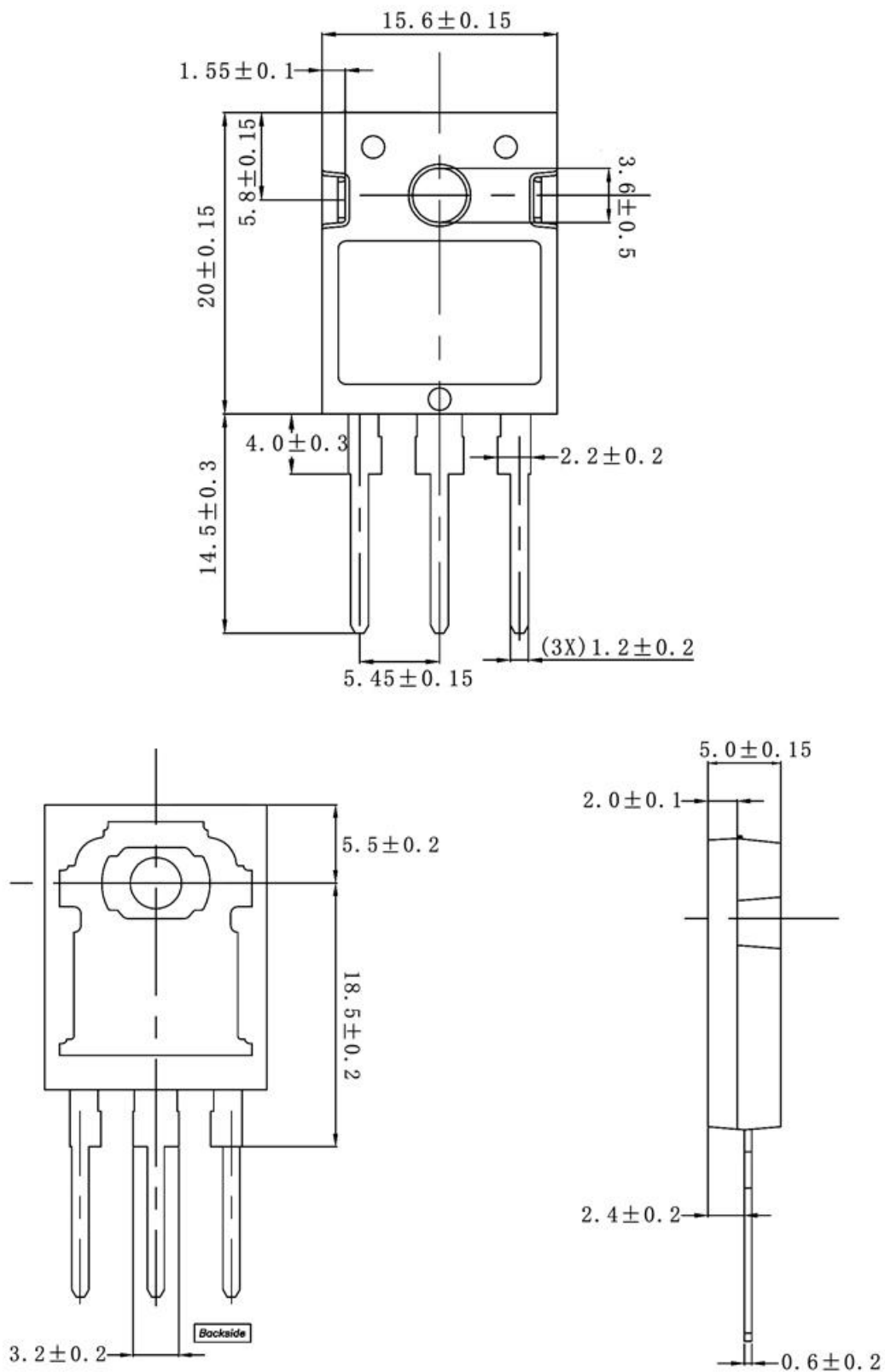
## N-Ch 200V Fast Switching MOSFETs



## N-Ch 200V Fast Switching MOSFETs



## TO-247 Package Information



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