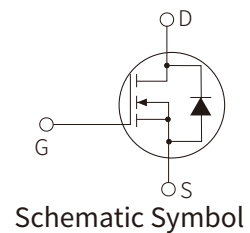
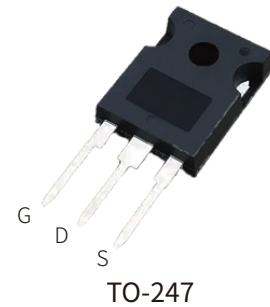


FEATURES

- | Multi-Epi Super Junction MOSFET
- | Fast Switching
- | Easy to Drive/Use

APPLICATION

- | SMPS
- | Motor Drivers
- | Charger/Power Supply
- | UPS



APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|----------------|-------------------------|---------------------------|
| Drain-Source Voltage $T_c=25^\circ\text{C}$ | V_{DSS} | 650 | V |
| Drain Current Pulse $T_c=25^\circ\text{C}$ | $I_{DS,pulse}$ | 69 | A |
| Drain Current Continuous | I_{DS} | $T_c=25^\circ\text{C}$ | 25 |
| | | $T_c=100^\circ\text{C}$ | 16 |
| Gate - Source Voltage DC | V_{GS} | ± 20 | V |
| Gate - Source Voltage $f > 1\text{Hz}$ | V_{GS} | ± 30 | V |
| Power Dissipation $T_c=25^\circ\text{C}$ | P_D | 185 | W |
| Thermal Resistance Junction - Case | $R_{th(J-C)}$ | 0.68 | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature | T_J | -40 to 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 to 150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS (T_A=25°C)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---------------------|---|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} =0V, I _D =250μA | 650 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 3.5 | 4.0 | 4.5 | V |
| Drain Leakage Current | I _{DSS} | V _{DS} =650V, V _{GS} =0V, T _J =25°C | | 0.01 | | μA |
| | | V _{DS} =650V, V _{GS} =0V, T _J =150°C | | 12.7 | | μA |
| Gate Leakage Current | I _{GSS} | V _{GS} =±30V, V _{DS} =0V | | | ±70 | nA |
| On-State Resistance | R _{DS(on)} | V _{GS} =10V, I _D =8A, T _J =25°C | | 130 | 140 | mΩ |
| | | V _{GS} =10V, I _D =8A, T _J =150°C | | 298 | 329 | mΩ |
| Gate Resistance | R _G | f=1MHz, Open Drain | | 4.9 | | Ω |
| Body Diode Reverse Characteristics | | | | | | |
| Diode Forward Voltage | V _{SD} | I _F =8A, V _{GS} =0V, T _J =25°C | | 0.8 | | V |
| Reverse Recovery Time | t _{rr} | V _P =400V, I _S =8A, d _{IF} /d _t =100A/μs See Fig. E and Fig. F | | 402 | | nS |
| Reverse Recovery Charge | Q _{rr} | | | 6.8 | | μC |
| Peak Reverse Recovery Current | I _{rrm} | | | 34 | | A |
| Dynamic Characteristics | | | | | | |
| Input capacitance | C _{iss} | V _{GS} =0V, V _{DS} =400V, f=250kHz | | 1943 | | pF |
| Output capacitance | C _{oss} | | | 50 | | pF |
| Reverse transfer capacitance | C _{rss} | | | 3.6 | | pF |
| Turn-on Delay Time | t _{d(on)} | V _P =400V, V _{GS} =12V R _G =10Ω, I _{DS} =8A See Fig. A and Fig. B | | 55 | | nS |
| Turn-on Rise Time | t _r | | | 20 | | nS |
| Turn-Off Delay Time | t _{d(off)} | | | 124 | | nS |
| Turn-Off Fall Time | t _f | | | 24 | | nS |
| Gate Charge Characteristics | | | | | | |
| Total Gate Charge | Q _g | V _P =400V, I _D =8A, V _{GS} =0-12V See Fig. C and Fig. D | | 62 | | nC |
| Gate-Source Charge | Q _{gs} | | | 16 | | nC |
| Gate-Drain Charge | Q _{gd} | | | 18 | | nC |
| Gate Plateau Voltage | V _{Plat} | | | 5.9 | | V |

PARAMETER CHARACTERISTIC CURVE

Fig1: Output Characteristics

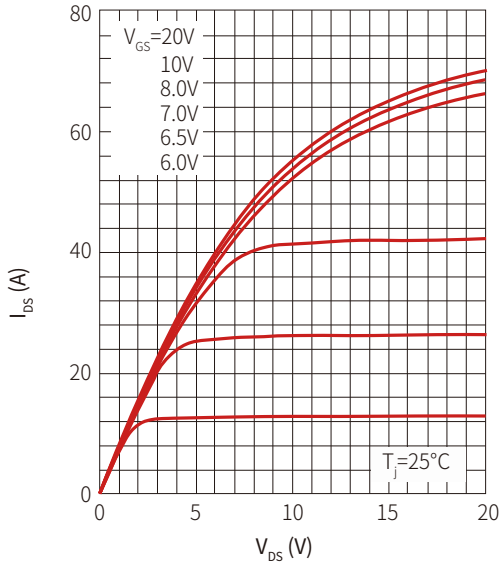


Fig2: Output Characteristics

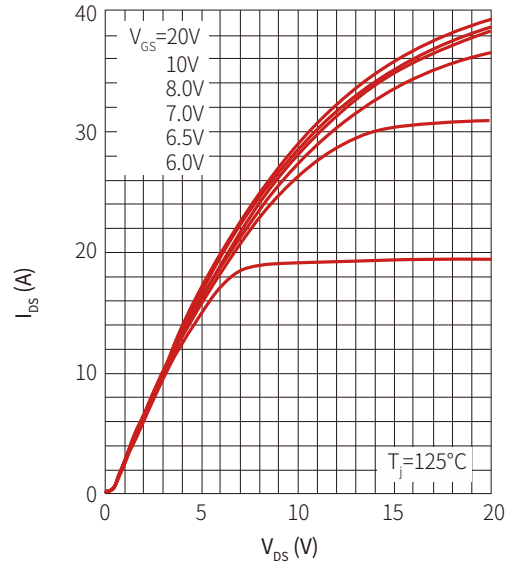


Fig3: $R_{DS(ON)}$ vs. Junction Temperature

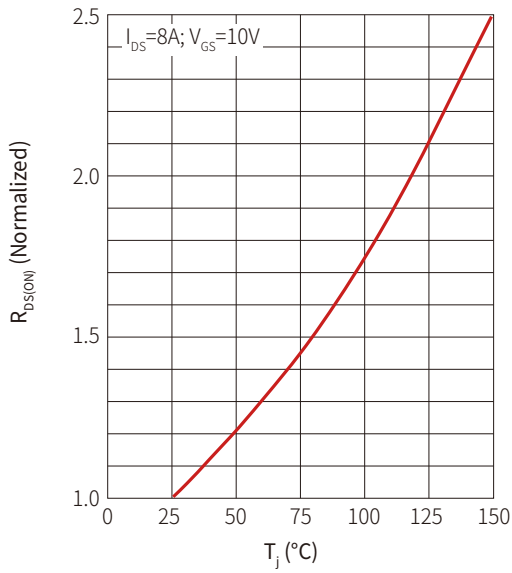


Fig4: Forward Characteristics of Body Diode

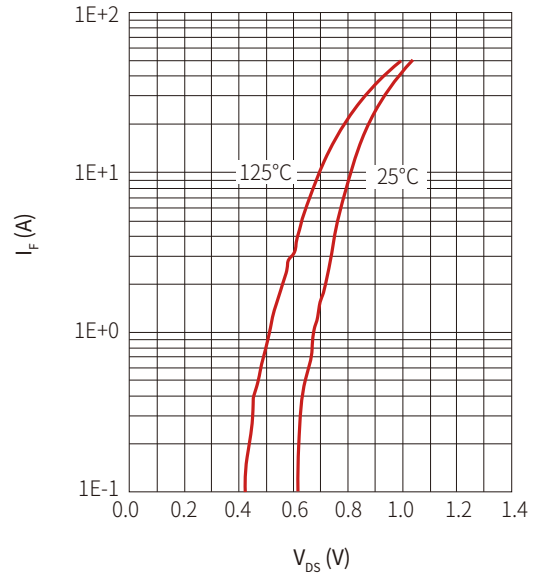


Fig5: Capacitance vs. V_{DS}

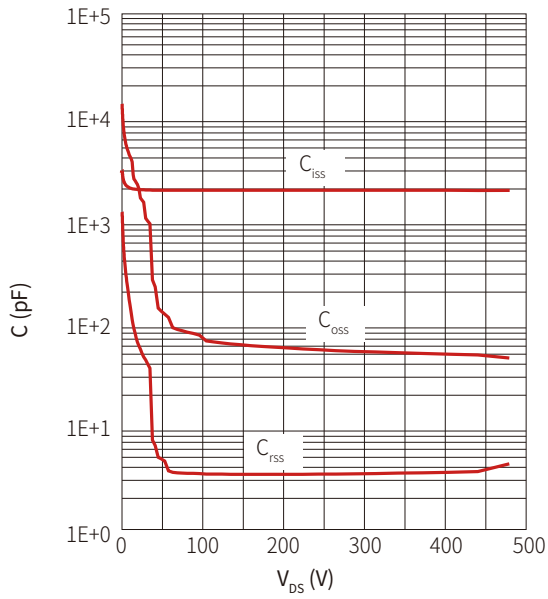


Fig6: Gate Charge

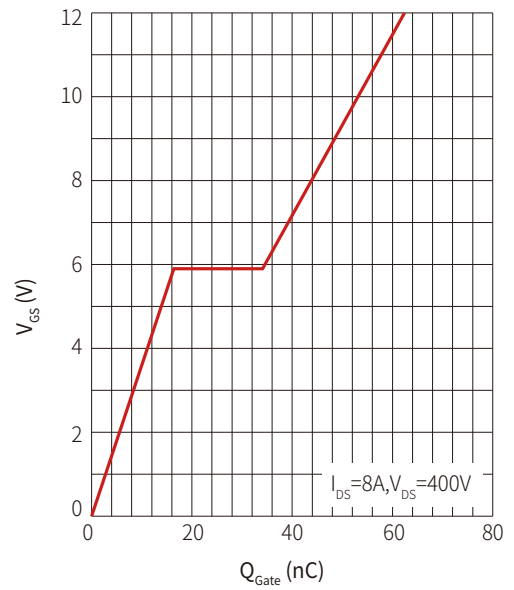


Fig7: Power Dissipation Derating Curve

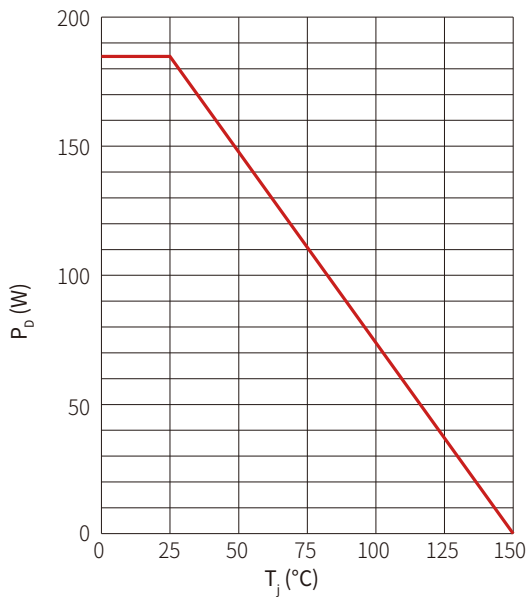


Fig8: Drain Current Derating Curve

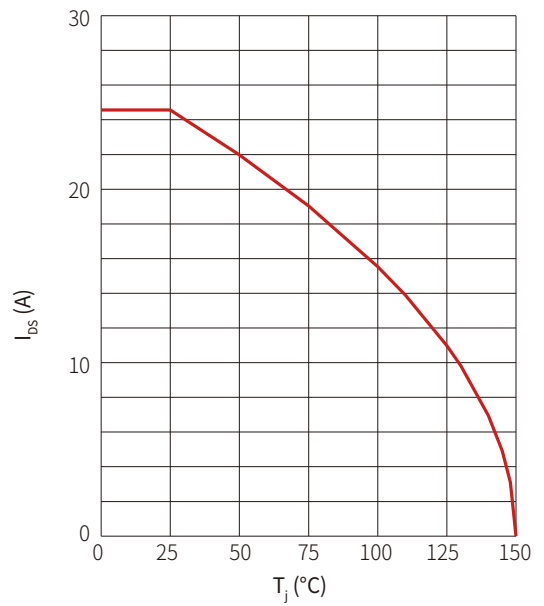


Fig9 :Safe Operating Area

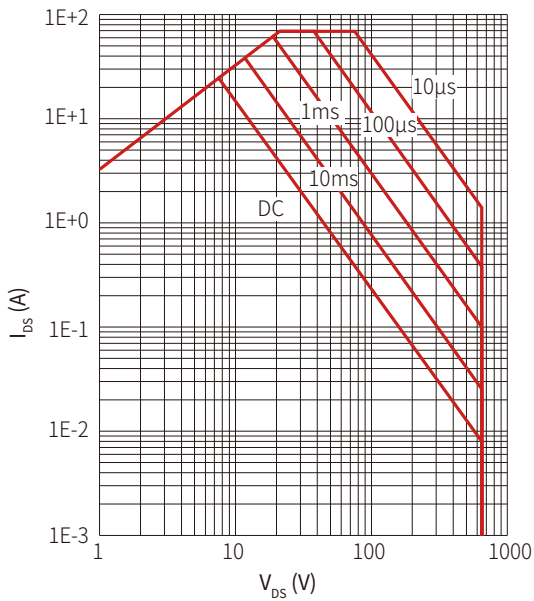


Fig10 : Z_{thJ-C}, D = tP / T

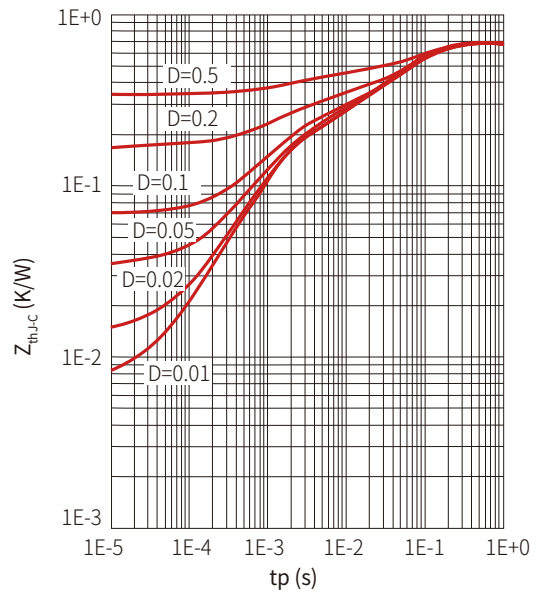


Fig11 :E_{oss} Curve

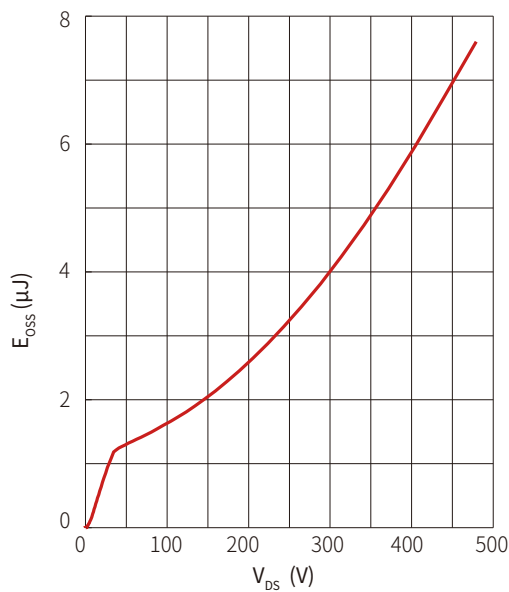


Fig.A Switching Times Test Circuit

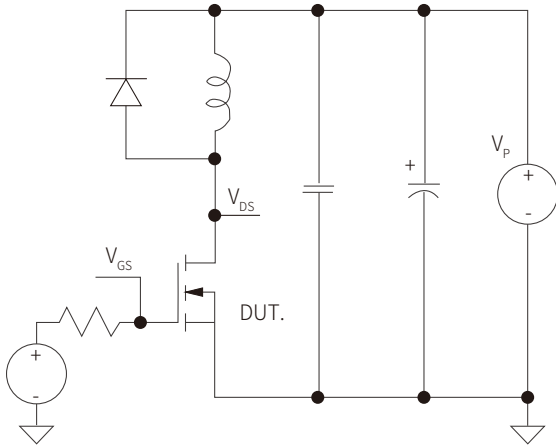


Fig.B Switching Times Waveform

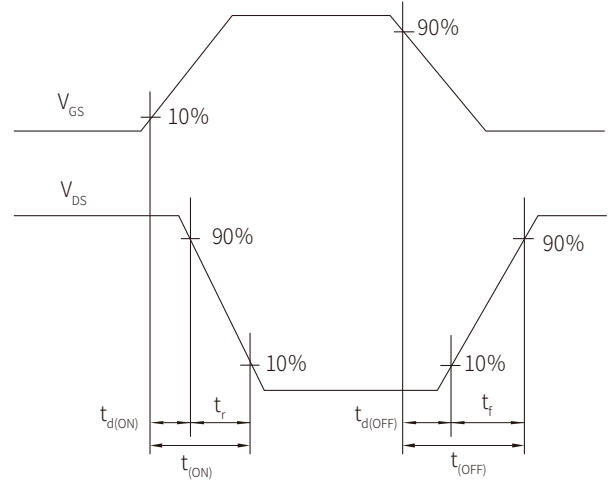


Fig.C Gate Charge Test Circuit

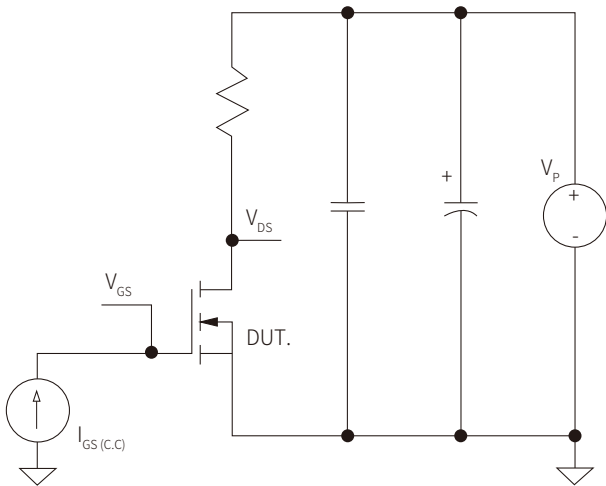


Fig.D Gate Charge Waveform

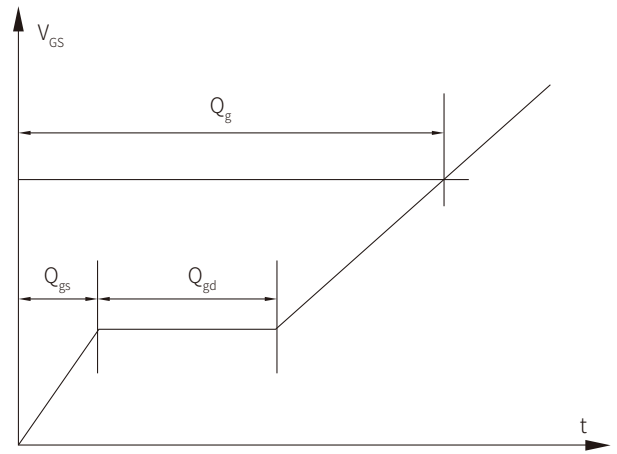
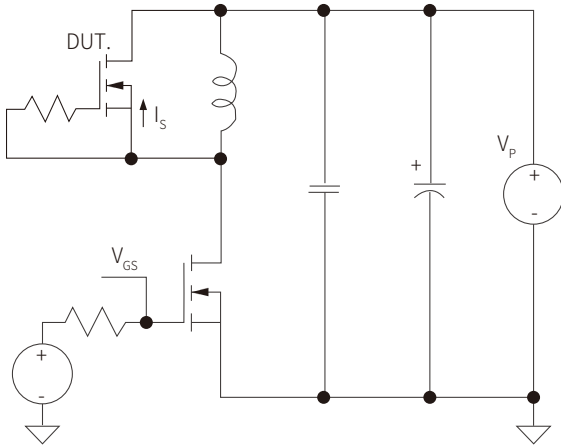
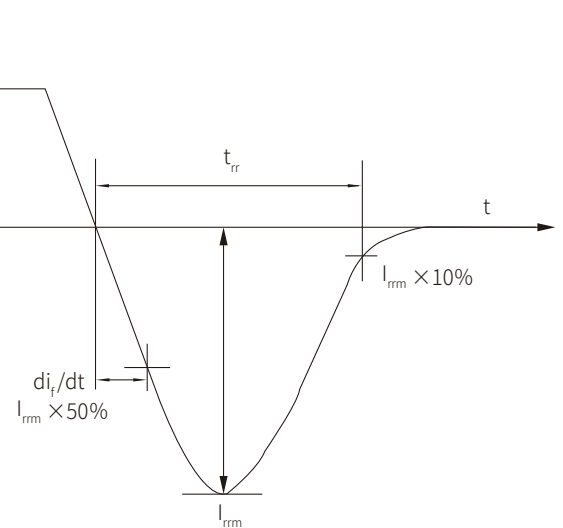
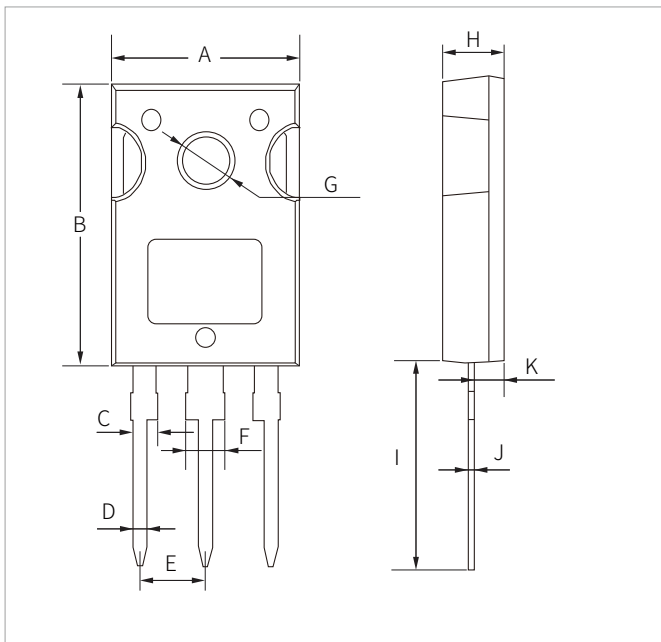


Fig.E Body Diode Recovery Test Circuit

Fig.F Body Diode Recovery waveform


TO-247 PACKAGE INFORMATION



| Ref. | Millimeters | | Inches | |
|------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 15.4 | 15.8 | 0.606 | 0.662 |
| B | 19.5 | 20.5 | 0.767 | 0.807 |
| C | 1.8 | 2.2 | 0.070 | 0.087 |
| D | 1.15 | 1.25 | 0.045 | 0.050 |
| E | 5.2 | 5.7 | 0.204 | 0.225 |
| F | 2.8 | 3.2 | 0.110 | 0.126 |
| G | 3.4 | 3.8 | 0.133 | 0.149 |
| H | 4.8 | 5.0 | 0.188 | 0.204 |
| I | 14.0 | 14.5 | 0.550 | 0.570 |
| J | 0.4 | 0.7 | 0.015 | 0.029 |
| K | 2.4 | | 0.095 | |

ORDERING INFORMATION

| Part Number | Component Package | Marking | QTY/Tube | QTY/Box | QTY/Carton |
|-------------|-------------------|--|----------|---------|------------|
| SNM25N65J | TO-247 |  25N65 XXXX | 30PCS | 450PCS | 2250PCS |

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.