

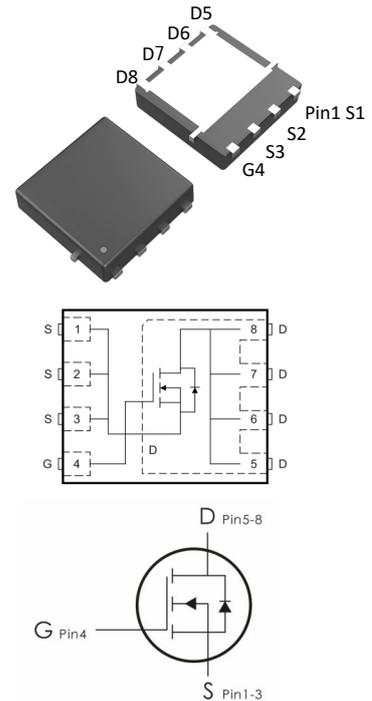
Description:

This N-Channel MOSFET uses advanced SGT technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=100V, I_D=25A, R_{DS(ON)} < 23m\ \Omega @ V_{GS}=10V$ (Typ: $18m\ \Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density SGT technology for ultra low $R_{DS(ON)}$.
- 5) Excellent package for good heat dissipation.
- 6) MSL3



Package Marking and Ordering Information:

| Part NO. | Marking | Package | Packing |
|------------|----------|----------|---------------|
| ZH025T2G-L | H025T2-L | DFN3*3-8 | 5000 pcs/Reel |

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

| Symbol | Parameter | Ratings | Units |
|----------------|--|-----------|------------------|
| V_{DS} | Drain-Source Voltage | 100 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Continuous Drain Current ¹ | 25 | A |
| | Continuous Drain Current- $T_c=100^\circ\text{C}$ ¹ | 17.5 | |
| I_{DM} | Pulsed Drain Current ² | 100 | |
| P_D | Power Dissipation | 17.4 | W |
| E_{AS} | Single pulse avalanche energy ³ | 19 | mJ |
| T_J, T_{STG} | Operating and Storage Junction Temperature Range | -55--+150 | $^\circ\text{C}$ |

Thermal Characteristics:

| Symbol | Parameter | Max | Units |
|-----------------|--|-----|---------------------------|
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 7.2 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance Junction to mbient ⁴ | 65 | $^\circ\text{C}/\text{W}$ |

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

| Symbol | Parameter | Conditions | Min | Typ | Max | Units |
|---|---|---|-----|-----|-----------|---------------|
| Off Characteristics | | | | | | |
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=250\ \mu\text{A}$ | 100 | --- | --- | V |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{GS}=0V, V_{DS}=100V$ | --- | --- | 1 | μA |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}=\pm 20V, V_{DS}=0A$ | --- | --- | ± 100 | nA |
| On Characteristics | | | | | | |
| $V_{GS(th)}$ | Gate-Source Threshold Voltage | $V_{GS}=V_{DS}, I_D=250\ \mu\text{A}$ | 1 | 1.7 | 2.5 | V |
| $R_{DS(on)}$ | Drain-Source On Resistance ⁴ | $V_{GS}=10V, I_D=10A$ | --- | 18 | 23 | m Ω |
| | | $V_{GS}=4.5V, I_D=5A$ | --- | 24 | 31 | |
| Dynamic Characteristics | | | | | | |
| C_{iss} | Input Capacitance | $V_{DS}=50V, V_{GS}=0V, f=1\text{MHz}$ | --- | 700 | --- | pF |
| C_{oss} | Output Capacitance | | --- | 179 | -- | |
| C_{rss} | Reverse Transfer Capacitance | | --- | 5.1 | --- | |
| Switching Characteristics | | | | | | |
| $t_{d(on)}$ | Turn-On Delay Time | $V_{DS}=50V, R_L=2.5\ \Omega,$ $R_G=6\ \Omega, V_{GS}=10V$ | --- | 4.3 | --- | ns |
| t_r | Rise Time | | --- | 5.1 | --- | ns |
| $t_{d(off)}$ | Turn-Off Delay Time | | --- | 17 | --- | ns |
| t_f | Fall Time | | --- | 8.7 | --- | ns |
| Q_g | Total Gate Charge | $V_{GS}=10V, V_{DS}=50V,$ $I_D=6.6A$ | --- | 10 | --- | nC |
| Q_{gs} | Gate-Source Charge | | --- | 2.1 | --- | nC |
| Q_{gd} | Gate-Drain "Miller" Charge | | --- | 3.3 | --- | nC |
| Drain-Source Diode Characteristics | | | | | | |
| V_{SD} | Diode Forward Voltage | $V_{GS}=0V, I_{SD}=30A$ | --- | 0.7 | 1.0 | V |
| I_S | Continuous Drain Current | $V_D=V_G=0V$ | --- | --- | 25 | A |
| I_{SM} | Pulsed Drain Current | | --- | --- | 100 | A |
| T_{rr} | Reverse Recovery Time | $I_F=6.6A, T_J=25^\circ\text{C}$ | --- | 40 | --- | ns |
| Q_{rr} | Reverse Recovery Charge | $di/dt=100A/\mu\text{s}$ | --- | 31 | --- | nC |

Notes:

1. Computed continuous current assumes the condition of $T_{j,Max}$ while the actual continuous current depends on the thermal & electro-mechanical application board design
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
3. EAS condition : $T_J=25^{\circ}C, V_{DD}=50V, V_G=10V, L=0.1mH$
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Typical Characteristics: ($T_c=25^{\circ}C$ unless otherwise noted)

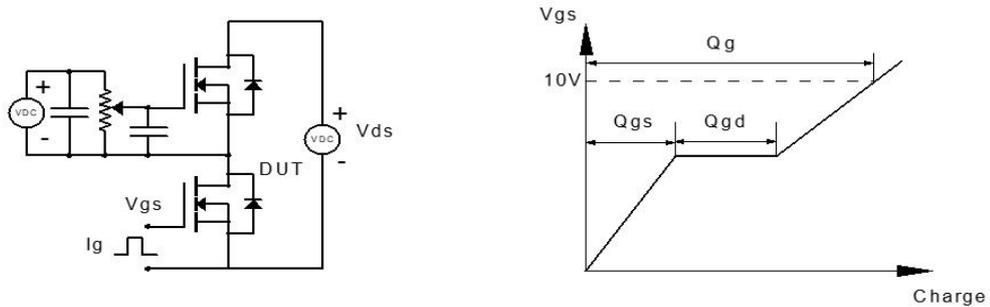


Figure 1: Gate Charge Test Circuit & Waveform

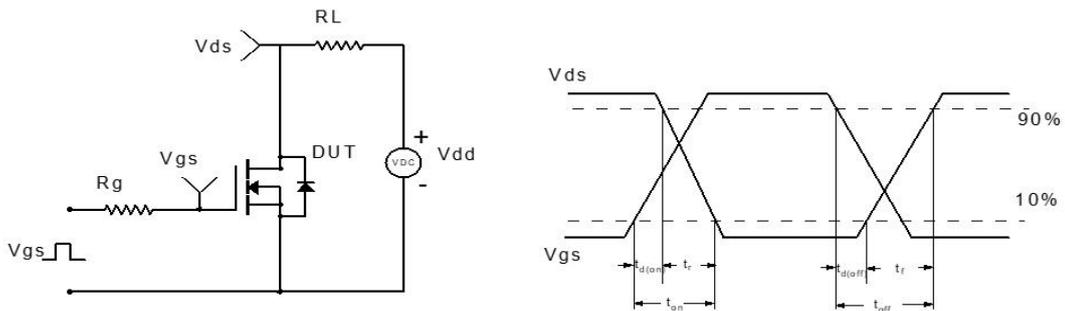


Figure 2: Resistive Switching Test Circuit & Waveform

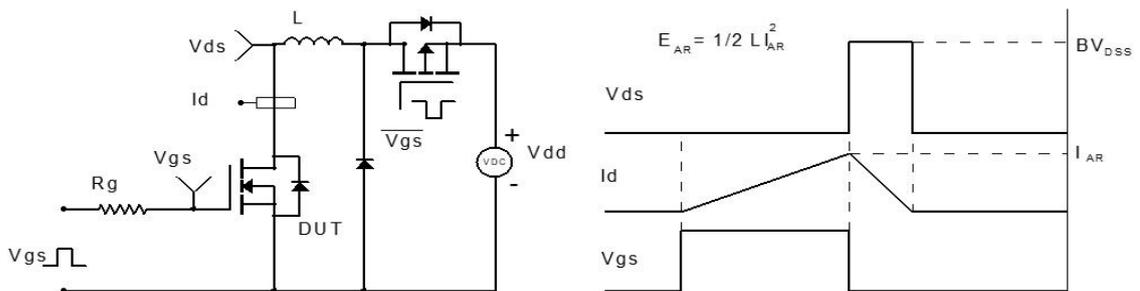


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

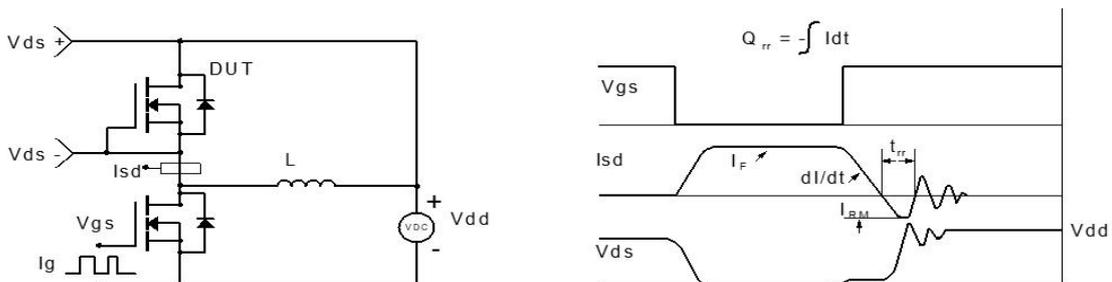
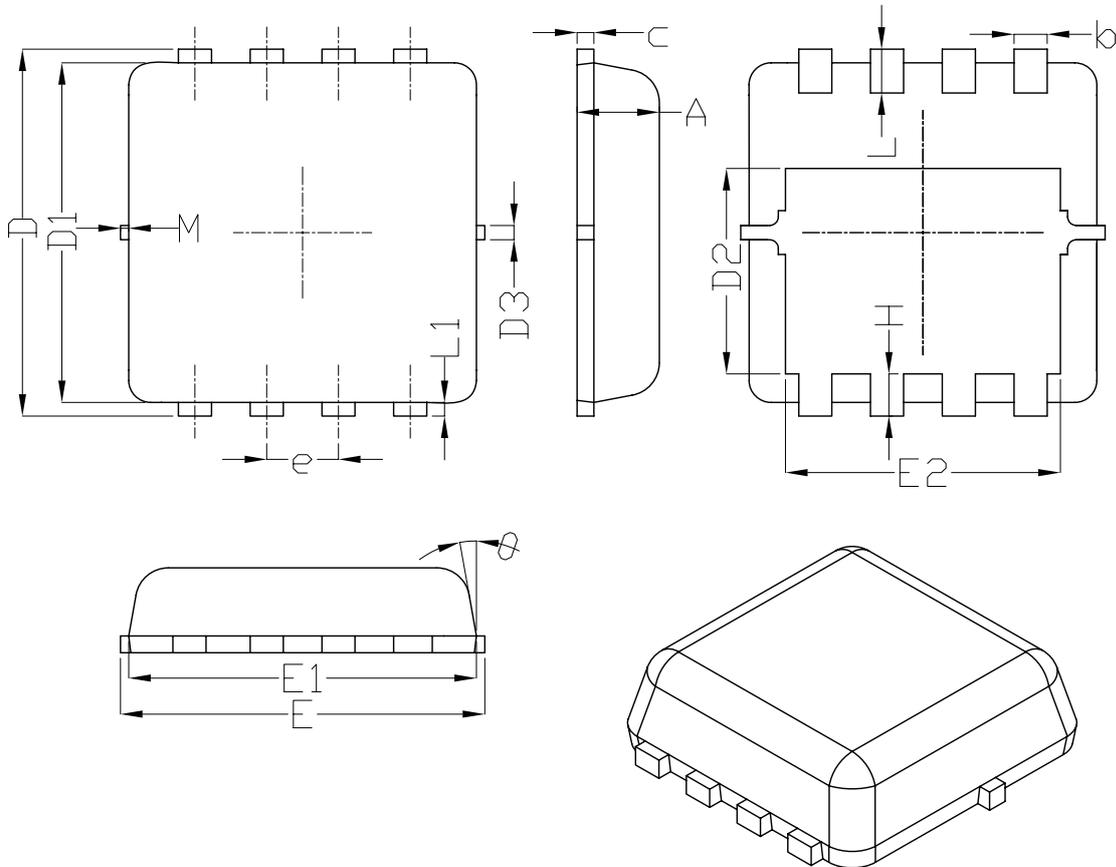
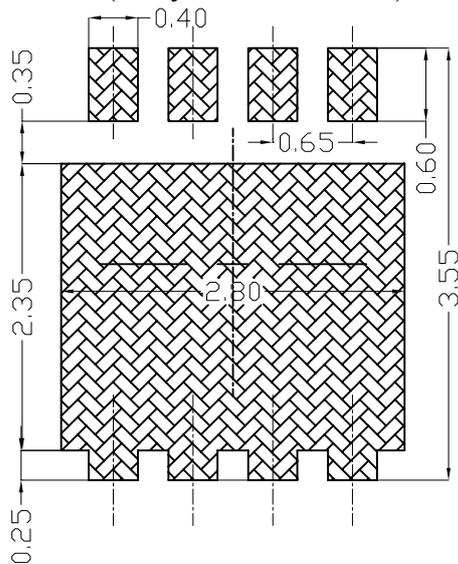


Figure 4: Diode Recovery Test Circuit & Waveform

DFN3X3-8 Package Outline Data



**Land Pattern
(Only for Reference)**



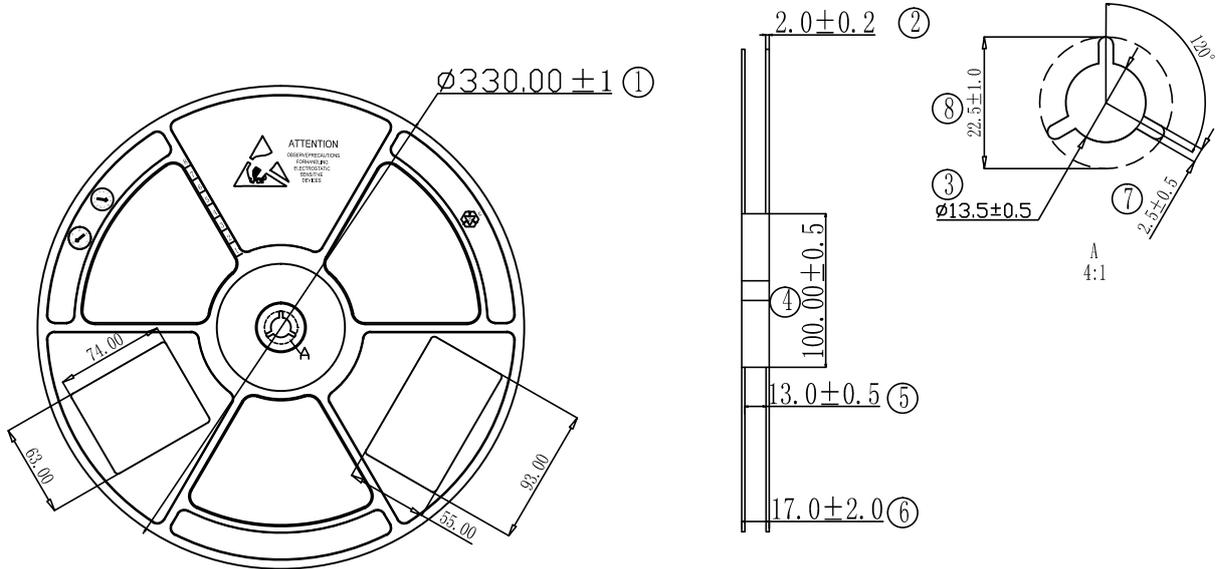
UNIT: mm

| SYMBOL | DIMENSIONAL REQMTS | | |
|----------|--------------------|------|------|
| | MIN | NOM | MAX |
| A | 0.70 | 0.75 | 0.80 |
| b | 0.25 | 0.30 | 0.35 |
| c | 0.10 | 0.15 | 0.25 |
| D | 3.25 | 3.35 | 3.45 |
| D1 | 3.00 | 3.10 | 3.20 |
| D2 | 1.78 | 1.88 | 1.98 |
| D3 | --- | 0.13 | --- |
| E | 3.20 | 3.30 | 3.40 |
| E1 | 3.00 | 3.15 | 3.20 |
| E2 | 2.39 | 2.49 | 2.59 |
| e | 0.65BSC | | |
| H | 0.30 | 0.39 | 0.50 |
| L | 0.30 | 0.40 | 0.50 |
| L1 | --- | 0.13 | --- |
| θ | --- | 10° | 12° |
| M | * | * | 0.15 |

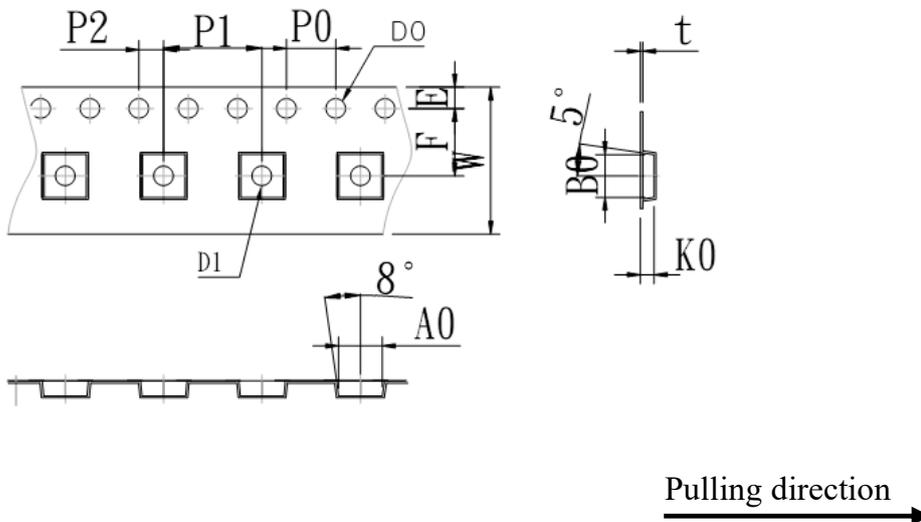
* Not specified

Tape & Reel Information

Dimensions in mm



| | | | | | | | | |
|--------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Symbol | A0 | B0 | K0 | D0 | D1 | P0 | P1 | 10*P0 |
| Spec | 3.55±0.10 | 3.45±0.10 | 1.13±0.10 | 1.55±0.10 | 1.55±0.10 | 4.00±0.10 | 8.00±0.10 | 40.0±0.10 |
| Symbol | W | E | F | P2 | t | | | |
| Spec | 12.00±0.10 | 1.75±0.10 | 5.50±0.10 | 2.00±0.10 | 0.20±0.05 | | | |



Marking Information:

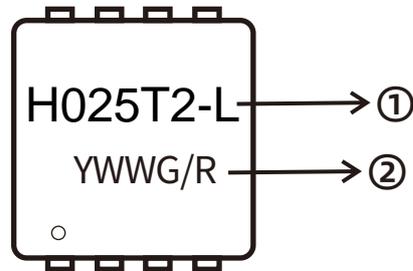
①. Part NO.

②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)



Previous Version

| Version | Date | Subjects (major changes since last revision) |
|---------|------------|--|
| 1.0 | 2025-05-29 | Release of final version |

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