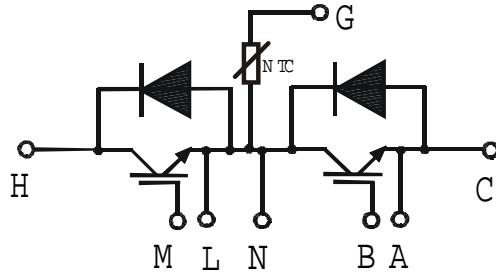


Powerline N-Channel Trench Gate- IGBT Module

PSTG 25HDT12

Preliminary Data Sheet

| | |
|---------------|--------------|
| V_{CES} | = 1200 V |
| $V_{CE(sat)}$ | = 1.9 V |
| I_{C25} | = 35 A |
| I_{C75} | = 25 A |
| I_{CM} | = 75 A |
| t_{sc} | = 10 μ s |



| Symbol | Test Conditions | Maximum Ratings | |
|---------------|--|-----------------|--------------------|
| V_{CES} | $T_{VJ} = 25^{\circ}\text{C}$ to 150°C | 1200 | V |
| V_{GES} | continuous | ± 20 | V |
| I_{C25} | $T_C = 25^{\circ}\text{C}$; | 35 | A |
| I_{C75} | $T_C = 75^{\circ}\text{C}$; | 25 | A |
| I_{CM} | $T_C = 75^{\circ}\text{C}$; | 75 | A |
| P_{tot} | $T_C = 75^{\circ}\text{C}$ | 45 | W |
| t_{sc} | $V_{CE} = 80 V_{CES}$, $R_G = 10 \Omega$, $V_{GE} = \pm 15 \text{ V}$ $T_{VJ} = 125^{\circ}\text{C}$, non-repetitive | 10 | μ s |
| T_{VJ} | | -40...+150 | $^{\circ}\text{C}$ |
| T_{stg} | | -40...+125 | $^{\circ}\text{C}$ |
| R_{thJC} | IGBT-per devices | 1.65 | K/W |
| R_{thJC} | Diode-per devices | 4.0 | K/W |
| V_{ISOL} | $I_{ISOL} \leq 1 \text{ mA}$, 50/60 Hz, $t = 1 \text{ min.}$ 180° sine | 3000 | V~ |
| M_D | Mounting torque (M4) | 1.5-1.8 | Nm |
| | | typ. | min. |
| d_s | Creepage distance on surface | 11.2 | mm |
| d_A | Strike distance through air | 4.0 | mm |
| Weight | typ. | 16 | g |

Features

- Package with DCB ceramic base plate and soldering pins for PCB mounting
- Isolation voltage over 3000 V~
- Trench Gate
- Enhancement Mode N-Channel Device
- Non Punch through Structure
- High Switching Speed
- Low On-state Saturation Voltage
- High Input Impedance Simplifies Gate Drive
- Latch-Free Operation
- Fully Short Circuit Rated to 10 μ s
- Wide RBSOA

Applications

- High Frequency Inverters
- Motor Control
- Switch Mode Power Supplies
- High Frequency Welding
- UPS Systems
- PWM Drives

Caution: These devices are sensitive to electrostatic discharge. Users should observe proper ESD handling precautions.

| Symbol | Test Conditions | Characteristic Value | |
|---------------|--|----------------------|------------------------------|
| | | typ. | max. |
| I_{CES} | $V_{CE} = V_{CES}, V_{GE} = 0 \text{ V}, T_{VJ} = 25^\circ\text{C}$ | 0.2 | mA |
| | | | $T_{VJ} = 125^\circ\text{C}$ |
| I_{GES} | $V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$ | 500 | nA |
| $V_{CE(sat)}$ | $I_C = 25 \text{ A}, V_{GE} = 15 \text{ V}, T_{VJ} = 25^\circ\text{C}$ | 1.9 | V |
| | | | $T_{VJ} = 125^\circ\text{C}$ |
| $V_{GE(th)}$ | $I_C = 25 \text{ A}, V_{GE} = V_{CE}$ | 7 | V |
| $t_{d(on)}$ | | 170 | ns |
| t_r | Inductive load, $T_{VJ} = 125^\circ\text{C}$ | 17 | ns |
| $t_{d(off)}$ | $V_{CE} = 50\% V_{CES}, I_C = 25 \text{ A}$ | 340 | ns |
| t_f | $R_G = 5 \Omega, V_{GE} = \pm 15 \text{ V}$ | 60 | ns |
| E_{on} | | 2 | mJ |
| E_{off} | | 3.5 | mJ |
| C_{ies} | $V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$ | 8000 | pF |
| C_{oes} | $V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$ | 340 | pF |
| C_{ies} | $V_{CE} = 75 \text{ V}, V_{GE} = 15 \text{ V}, f = 1 \text{ MHz}$ | 50 | pF |
| V_{FM} | $I_F = 25 \text{ A}, T_{VJ} = 25^\circ\text{C}$ | 1.9 | V |
| | | | $T_{VJ} = 125^\circ\text{C}$ |
| t_{rr} | $I_F = 25 \text{ A}, di_{RR} / dt = 200 \text{ A}/\mu\text{s}$ | 90 | ns |
| I_{RRM} | $V_R = 50\% V_{RRM}$ | 12 | A |
| NTC | 25°C | 470 | kΩ |

Package style and outline

Dimensions in mm (1mm = 0.0394")

