

SLLIMM™ 2nd series

Super-Junction MOSFET based Intelligent Power Modules



Improve efficiency and robustness in motor control applications working at light loads

ST's new SJ-MOSFET based SLLIMM™ helps boost efficiency on all motor control applications that work at low load conditions including fans, air-conditioners and HVAC units. The combination of ST's proprietary control ICs with the high-voltage, N-channel, super-junction MDmesh™ DM2 technology, providing fast-recovery diode series, increases efficiency and minimizes EMI and overall losses, ensuring at the same time higher short-circuit withstand times.

KEY FEATURES

- 600 V breakdown voltage
- 10 A and 15 A at 25°C
- Low $R_{DS(on)}$
- Lowest RTH
- Isolation rating of 1.5 kVrms/min
- Higher short-circuit withstand time
- Built-in temperature sensor and embedded NTC
- Comparator for fault protection

KEY BENEFITS

- Higher robustness and reliability
- Improved efficiency and thermal performance
- Embedded protection inside the module
- Plug'n'Play solution
- Easy to drive through microcontroller

MAIN APPLICATIONS

- 3-phase inverter for motor drives
- Linear and BLDC compressors
- Fans, air-conditioners, and HVAC units

The benchmark, between the IGBT based and SJ-MOSFET based intelligent power modules, highlights the improvement both in power losses, thus increasing the efficiency (Figure 1) as well as thermal performance thanks to the lowest thermal resistance on the market (Figure 2).

Fig1: Power losses and efficiency versus Input Power @6.5 kHz Aircon

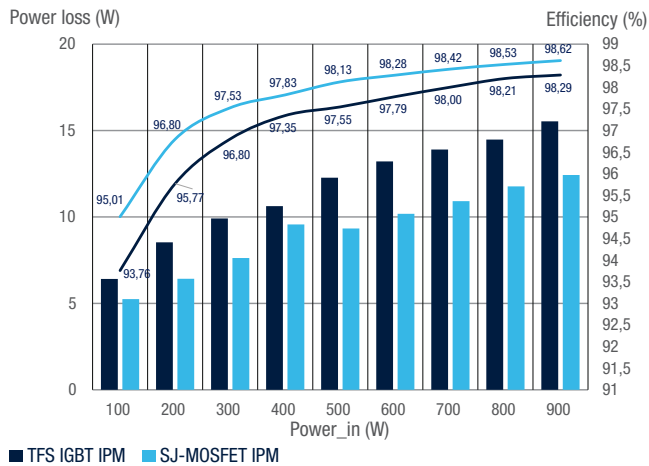
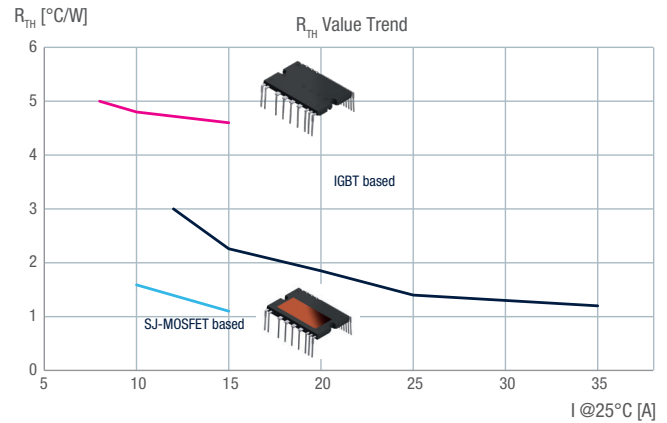


Fig2: R_{TH} trend versus current



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Order code	Package type	I _D @ 25°C	Typ. R _{DS(ON)} @ I _D , 25°C	Max R _{th(j-c)}	t _{scw}
STIB1060DM2T-L	DBC	10 A	180 mΩ	1.59 °C/W	12 μs
STIB1560DM2T-L	DBC	15 A	150 mΩ	1.10 °C/W	12 μs

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