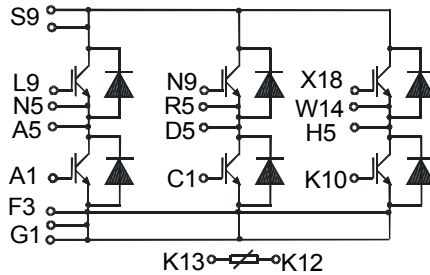


IGBT Module

PSII 15/12*

Preliminary Data Sheet

$I_{C25} = 18 \text{ A}$
 $V_{CES} = 1200 \text{ V}$
 $V_{CE(sat)typ.} = 2.3 \text{ V}$



PSII 15/12*

*NTC optional

IGBTs

| Symbol | Conditions | Maximum Ratings | |
|---------------------|---|-----------------|---------------|
| V_{CES} | $T_{VJ} = 25^{\circ}\text{C}$ to 150°C | 1200 | V |
| V_{GES} | | ± 20 | V |
| I_{C25} | $T_C = 25^{\circ}\text{C}$ | 18 | A |
| I_{C80} | $T_C = 80^{\circ}\text{C}$ | 14 | A |
| I_{CM} | $V_{GE} = \pm 15 \text{ V}$; $R_G = 82 \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ | 20 | A |
| V_{CEK} | RBSOA, Clamped inductive load; $L = 100 \mu\text{H}$ | V_{CES} | |
| t_{SC} (SCSOA) | $V_{CE} = 720 \text{ V}$; $V_{GE} = \pm 15 \text{ V}$; $R_G = 82 \Omega$; $T_{VJ} = 125^{\circ}\text{C}$ non-repetitive | 10 | μs |
| P_{tot} | $T_C = 25^{\circ}\text{C}$ | 90 | W |

| Symbol | Conditions | Characteristic Values | | | |
|--|--|---|-------------------------------------|----------------------------------|---------|
| | | $(T_{VJ} = 25^{\circ}\text{C}, \text{ unless otherwise specified})$ | | | |
| | | min. | typ. | max. | |
| $V_{CE(sat)}$ | $I_C = 10 \text{ A}$; $V_{GE} = 15 \text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$ | | 2.3 2.7 | 2.7 V | |
| $V_{GE(th)}$ | $I_C = 0.4 \text{ mA}$; $V_{GE} = V_{CE}$ | 4.5 | | 6.5 V | |
| I_{CES} | $V_{CE} = V_{CES}$; $V_{GE} = 0 \text{ V}$; $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 125^{\circ}\text{C}$ | | 0.8 | 0.5 mA mA | |
| I_{GES} | $V_{CE} = 0 \text{ V}$; $V_{GE} = \pm 20 \text{ V}$ | | | 200 nA | |
| $t_{d(on)}$ t_r $t_{d(off)}$ t_f E_{on} E_{off} | Inductive load, $T_{VJ} = 125^{\circ}\text{C}$ $V_{CE} = 600 \text{ V}$; $I_C = 10 \text{ A}$ $V_{GE} = \pm 15 \text{ V}$; $R_G = 82 \Omega$ | | 50 40 290 60 1.2 1.1 | ns ns ns ns mJ mJ | |
| C_{ies} | | $V_{CE} = 25 \text{ V}$; $V_{GE} = 0 \text{ V}$; $f = 1 \text{ MHz}$ | | 600 | pF |
| Q_{Gon} | | $V_{CE} = 600 \text{ V}$; $V_{GE} = 15 \text{ V}$; $I_C = 10 \text{ A}$ | | 45 | nC |
| R_{thJC} | | (per IGBT) | | | 1.4 K/W |
| R_{thJH} | | (per IGBT) with heatsink compound | | 2.7 | K/W |

Features

- NPT IGBT's
 - positive temperature coefficient of saturation voltage
 - fast switching
- FRED diodes
 - fast reverse recovery
 - low forward voltage
- Industry Standard Package
 - solderable pins for PCB mounting
 - isolated DCB ceramic base plate
- UL registered, E 148688

Applications

- AC drives
- power supplies with power factor correction

Advantages

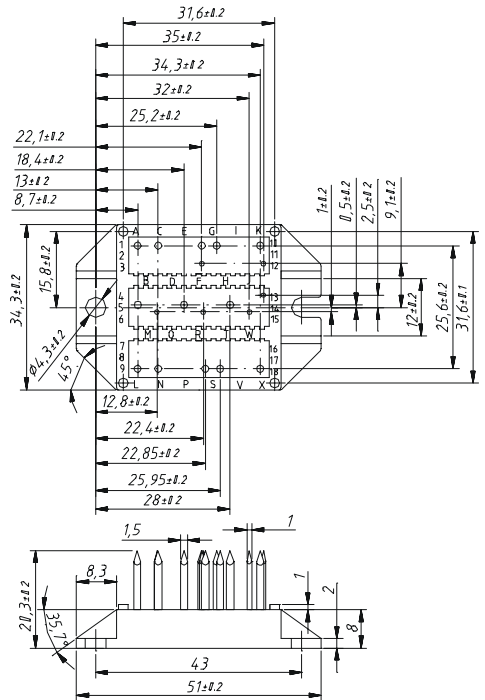
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Small and light weight

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

Diodes

| Symbol | Conditions | Maximum Ratings | |
|-----------|--------------------------|-----------------|---|
| I_{F25} | $T_C = 25^\circ\text{C}$ | 15 | A |
| I_{F80} | $T_C = 80^\circ\text{C}$ | 10 | A |

Package style and outline
Dimensions in mm (1mm = 0.0394")



| Symbol | Conditions | Characteristic Values | | |
|--------------------------|---|-----------------------|------|------|
| | | min. | typ. | max. |
| V_F | $I_F = 10\text{ A}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$ | 2.6 | 3.0 | V |
| I_{RM} t_{tr} | $I_F = 10\text{ A}; di_F/dt = -400\text{ A}/\mu\text{s}; T_{VJ} = 125^\circ\text{C}$ $V_R = 600\text{ V}; V_{GE} = 0\text{ V}$ | 13 | | A |
| R_{thJC} R_{thJH} | (per diode) (per diode) with heatsink compound | 5.0 | | K/W |

Component

| Symbol | Conditions | Maximum Ratings | |
|------------|--|-----------------|------------------|
| T_{VJ} | | -40...+150 | $^\circ\text{C}$ |
| T_{stg} | | -40...+125 | $^\circ\text{C}$ |
| V_{ISOL} | $I_{ISOL} \leq 1\text{ mA}; 50/60\text{ Hz}; t = 1\text{ s}$ | 3600 | V~ |
| M_d | Mounting torque (M4) | 1.5 - 2.0 | Nm |
| | | 14 - 18 | lb.in. |
| a | Max. allowable acceleration | 50 | m/s^2 |

| Symbol | Conditions | Characteristic Values | | |
|---------------|--|-----------------------|------|------|
| | | min. | typ. | max. |
| d_s | Creepage distance on surface (Pin to heatsink) | 11.2 | | mm |
| d_A | Strike distance in air (Pin to heatsink) | 11.2 | | mm |
| Weight | | 24 | | g |

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