



Vincotech

10-FZ122PB080FV01-M818F98
10-PZ122PB080FV01-M818F98Y
 target datasheet

| <i>flow</i> PHASE 0 | 1200 V / 80 A |
|--|---|
| <div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> High efficiency fast Fairchild IGBT Full current fast FWD Thermistor | <div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">flow 0 12mm housing</div> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <div style="display: flex; justify-content: space-around; font-size: small;"> Solder pins Press-fit pins </div> |
| <div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Target applications</div> <ul style="list-style-type: none"> Industrial Drives Power Supply Solar UPS Welding | <div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Schematic</div> |
| <div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> 10-FZ122PB080FV01-M818F98 10-FZ122PB080FV01-M818F98Y | |

Maximum Ratings

$T_j=25^{\circ}\text{C}$, unless otherwise specified

| Parameter | Symbol | Condition | Value | Unit |
|-----------------------------------|------------|---|----------|--------------------|
| Half-Bridge Switch | | | | |
| Collector-emitter voltage | V_{CES} | | 1200 | V |
| Collector current | I_C | $T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$ | 139 | A |
| Repetitive peak collector current | I_{CRM} | t_p limited by T_{jmax} | 320 | A |
| Total power dissipation | P_{tot} | $T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$ | 396 | W |
| Gate-emitter voltage | V_{GES} | | ± 20 | V |
| Maximum Junction Temperature | T_{jmax} | | 175 | $^{\circ}\text{C}$ |



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| Parameter | Symbol | Condition | Value | Unit |
|-------------------------------------|------------|---|-------|------------------|
| Half-Bridge Diode | | | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | 1200 | V |
| Continuous (direct) forward current | I_F | $T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$ | 91 | A |
| Total power dissipation | P_{tot} | $T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$ | 198 | W |
| Maximum Junction Temperature | T_{jmax} | | 175 | $^\circ\text{C}$ |

| Parameter | Symbol | Condition | Value | Unit |
|---|-----------|-----------|----------------------------|------------------|
| Module Properties | | | | |
| Thermal Properties | | | | |
| Storage temperature | T_{stg} | | -40...+125 | $^\circ\text{C}$ |
| Operation temperature under switching condition | T_{jop} | | -40...+($T_{jmax} - 25$) | $^\circ\text{C}$ |

| | | | | |
|-----------------------------|------------|------------------------------|-------------|----|
| Isolation Properties | | | | |
| Isolation voltage | V_{isol} | DC voltage $t_p=2s$ | 4000 | V |
| Creepage distance | | | min 12,7 | mm |
| Clearance | | Solder pins / Press-fit pins | 9,12 / 9,54 | mm |
| Comparative Tracking Index | CTI | | >200 | |



Characteristic Values

Half-Bridge Switch

| Parameter | Symbol | Conditions | | | | | Value | | | Unit |
|-----------|--------|------------------------------|---|-------------------------------------|------------|-----|-------|-----|--|------|
| | | V_{GE} [V] V_{GS} [V] | V_{CE} [V] V_{GS} [V] V_r [V] | I_C [A] I_D [A] I_F [A] | T_i [°C] | Min | Typ | Max | | |

Static

| | | | | | | | | | | | |
|--------------------------------------|--------------|-----------------|----|------|------|-----------|-----|------|-----|----|--|
| Gate-emitter threshold voltage | $V_{GE(th)}$ | $V_{GE}=V_{CE}$ | | | 0,08 | 25 125 | 5 | 6,8 | 7,3 | V | |
| Collector-emitter saturation voltage | V_{CEsat} | | 15 | | 80 | 25 125 | 1,5 | 1,80 | 2,5 | V | |
| Collector-emitter cut-off current | I_{CES} | | 0 | 1200 | | 25 125 | | | 100 | μA | |
| Gate-emitter leakage current | I_{GES} | | 20 | 0 | | 25 125 | | | 500 | nA | |
| Internal gate resistance | r_g | | | | | | | none | | Ω | |
| Input capacitance | C_{ies} | f=100 KHz | 0 | 30 | | 25 | | 8600 | | pF | |
| Output capacitance | C_{oes} | | | | | | | | 360 | | |
| Reverse transfer capacitance | C_{res} | | | | | | | | 200 | | |
| Gate charge | Q_g | | 15 | 600 | 80 | 25 | | 740 | | nC | |

Thermal

| | | | | | | | | | | |
|-------------------------------------|---------------|---|--|--|--|--|--|------|--|-----|
| Thermal resistance junction to sink | $R_{th(j-s)}$ | Thermal foil thickness=76μm Kunze foil KU-ALF5 | | | | | | 0,24 | | K/W |
|-------------------------------------|---------------|---|--|--|--|--|--|------|--|-----|

Half-Bridge Diode

| Parameter | Symbol | Conditions | | | | | Value | | | Unit |
|-----------|--------|------------------------------|---|-------------------------------------|------------|-----|-------|-----|--|------|
| | | V_{GE} [V] V_{GS} [V] | V_{CE} [V] V_{GS} [V] V_r [V] | I_C [A] I_D [A] I_F [A] | T_i [°C] | Min | Typ | Max | | |

Static

| | | | | | | | | | | |
|-------------------------|-------|--|--|------|----|------------------|--|------|--------------|----|
| Forward voltage | V_F | | | | 75 | 25 125 150 | | 2,17 | 2,49 | V |
| Reverse leakage current | I_r | | | 1200 | | 25 150 | | | 120 14000 | μA |

Thermal

| | | | | | | | | | | |
|-------------------------------------|---------------|---|--|--|--|--|--|------|--|-----|
| Thermal resistance junction to sink | $R_{th(j-s)}$ | Thermal foil thickness=76μm Kunze foil KU-ALF5 | | | | | | 0,48 | | K/W |
|-------------------------------------|---------------|---|--|--|--|--|--|------|--|-----|



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Thermistor

| Parameter | Symbol | Conditions | Conditions | | | Value | | | Unit | |
|----------------------------|----------------|--------------------|------------------------------|---|-------------------------------------|------------|-----|------|------|------------|
| | | | V_{GE} [V] V_{GS} [V] | V_{CE} [V] V_{GS} [V] V_r [V] | I_C [A] I_D [A] I_F [A] | T_i [°C] | Min | Typ | | Max |
| Rated resistance | R | | | | | 25 | | 22 | | k Ω |
| Deviation of R100 | $\Delta_{R/R}$ | R100=1484 Ω | | | | 100 | -5 | | 5 | % |
| Power dissipation | P | | | | | 25 | | 5 | | mW |
| Power dissipation constant | | | | | | 25 | | 1,5 | | mW/K |
| B-value | $B_{(25/50)}$ | Tol. $\pm 1\%$ | | | | 25 | | 3962 | | K |
| B-value | $B_{(25/100)}$ | Tol. $\pm 1\%$ | | | | 25 | | 4000 | | K |
| Vincotech NTC Reference | | | | | | | | | I | |

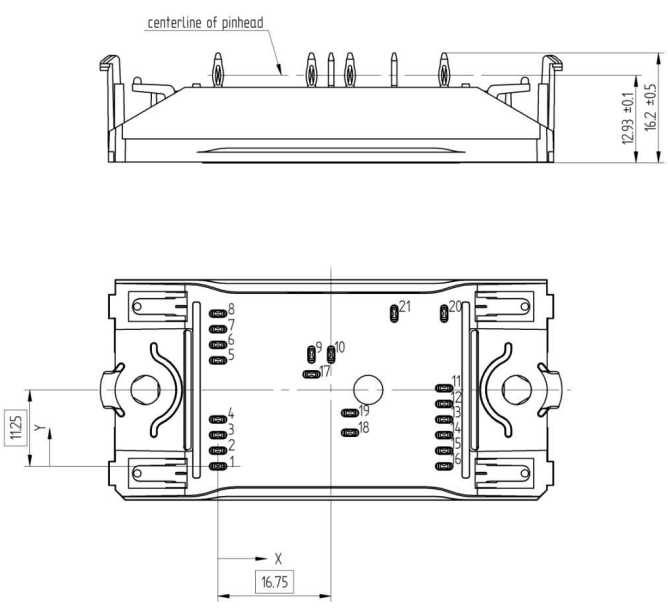


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| Ordering Code & Marking | | | | | | | |
|---|------------|---------------------------|----------------------------|-----------|------------|-------|--------|
| Version | | | Ordering Code | | | | |
| without thermal paste with Solder pins 12mm housing | | | 10-FZ122PB080FV01-M818F98 | | | | |
| without thermal paste with Press-fit pins 12mm housing | | | 10-FZ122PB080FV01-M818F98Y | | | | |
|  NN-NNNNNNNNNNNNNN TTTTIVV WWYY UL Vinco LLLLL SSSS | Text | Name | | Date code | UL & Vinco | Lot | Serial |
| | | NN-NNNNNNNNNNNNNN-TTTTIVV | | WWYY | UL Vinco | LLLLL | SSSS |
| | Datamatrix | Type&Ver | Lot number | Serial | Date code | | |
| TTTTTIVV | | LLLLL | SSSS | WWYY | | | |

| Pin table [mm] | | | |
|----------------|-------|-------|----------|
| Pin | X | Y | Function |
| 1 | 0 | 0 | DC- |
| 2 | 0 | 2,3 | DC- |
| 3 | 0 | 4,6 | DC- |
| 4 | 0 | 6,9 | DC- |
| 5 | 0 | 15,6 | DC+ |
| 6 | 0 | 17,9 | DC+ |
| 7 | 0 | 20,2 | DC+ |
| 8 | 0 | 22,5 | DC+ |
| 9 | 13,85 | 16,45 | G12 |
| 10 | 16,75 | 16,45 | S12 |
| 11 | 33,5 | 11,5 | Ph |
| 12 | 33,5 | 9,2 | Ph |
| 13 | 33,5 | 6,9 | Ph |
| 14 | 33,5 | 4,6 | Ph |
| 15 | 33,5 | 2,3 | Ph |
| 16 | 33,5 | 0 | Ph |
| 17 | 13,85 | 13,55 | Ph |
| 18 | 19,55 | 4,95 | S11 |
| 19 | 19,55 | 7,85 | G11 |
| 20 | 33,5 | 22,5 | Therm1 |
| 21 | 26,1 | 22,5 | Therm2 |



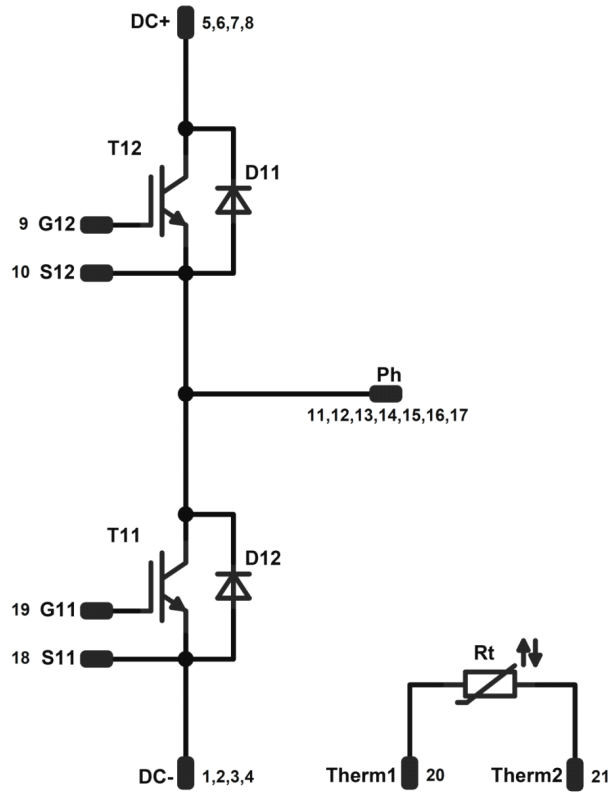
Tolerance of pinpositions: ±0,5mm at the end of pins
 Dimension of coordinate axis is only offset without tolerance



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Pinout



Identification

| ID | Component | Voltage | Current | Function | Comment |
|---------|-----------|---------|---------|--------------------|---------|
| T11,T12 | IGBT | 1200 V | 80 A | Half-Bridge Switch | |
| D11,D12 | FWD | 1200 V | 75 A | Half-Bridge Diode | |
| Rt | NTC | - | - | Thermistor | |



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| Packaging instruction | | | |
|-----------------------------------|-----|------|----------|
| Standard packaging quantity (SPQ) | 135 | >SPQ | Standard |
| | | <SPQ | Sample |

| Handling instruction |
|---|
| Handling instructions for <i>flow 0</i> packages see vincotech.com website. |

| Package data |
|--|
| Package data for <i>flow 0</i> packages see vincotech.com website. |

| Document No.: | Date: | Modification: | Pages |
|----------------------------------|--------------|---------------|-------|
| 10-xZ122PB080FV01-M818F98x-T3-14 | 23 Dec. 2015 | | |

| Product status definition | | |
|---------------------------|------------------------|--|
| Datasheet Status | Product Status | Definition |
| Target | Formative or In Design | This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. The data contained is exclusively intended for technically trained staff. |

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