



Vincotech

# 10-EZ126PB090MR-LS16F48T

datasheet

flowPACK E1 SiC

1200 V / 90 mΩ

## Topology features

- 3ph Inverter
- Low and high side Kelvin Emitter for improved switching performance
- MOSFET
- Open Emitter configuration
- Temperature sensor

## Component features

- Easy paralleling
- Low on-resistance
- Fast switching speed
- Fast recovery body diode

## Housing features

- Base isolation: Al<sub>2</sub>O<sub>3</sub>
- Convex shaped substrate for superior thermal contact
- Compact housing
- CTI600 housing material
- Thermo-mechanical push-and-pull force relief
- Press-fit pin
- Reliable cold welding connection

## Target applications

- Elevator Drives
- Embedded Drives
- Servo Drives

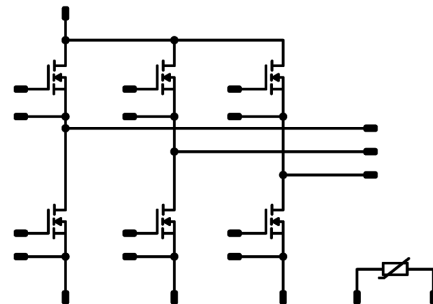
## Types

- 10-EZ126PB090MR-LS16F48T

## flow E1 12 mm housing



## Schematic





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## Maximum Ratings

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

| Parameter                    | Symbol     | Conditions                            | Value   | Unit |
|------------------------------|------------|---------------------------------------|---------|------|
| <b>Inverter Switch</b>       |            |                                       |         |      |
| Drain-source voltage         | $V_{DS}$   |                                       | 1200    | V    |
| Drain current (DC current)   | $I_D$      | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 15      | A    |
| Peak drain current           | $I_{DM}$   | $t_p$ limited by $T_{jmax}$           | 45      | A    |
| Total power dissipation      | $P_{tot}$  | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 42      | W    |
| Gate-source voltage          | $V_{GS}$   | static                                | -4 / 21 | V    |
|                              |            | dynamic                               | -4 / 23 | V    |
| Maximum Junction Temperature | $T_{jmax}$ |                                       | 175     | °C   |

## Module Properties

### Thermal Properties

|                                                 |           |  |                            |    |
|-------------------------------------------------|-----------|--|----------------------------|----|
| Storage temperature                             | $T_{stg}$ |  | -40...+125                 | °C |
| Operation temperature under switching condition | $T_{jop}$ |  | -40...+( $T_{jmax} - 25$ ) | °C |

### Isolation Properties

|                            |            |                                     |       |    |
|----------------------------|------------|-------------------------------------|-------|----|
| Isolation voltage          | $V_{isol}$ | DC Test Voltage* $t_p = 2\text{ s}$ | 6000  | V  |
| Creepage distance          |            |                                     | >12,7 | mm |
| Clearance                  |            |                                     | 8,74  | mm |
| Comparative Tracking Index | CTI        |                                     | ≥ 600 |    |

\*100 % tested in production



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## Characteristic Values

| Parameter | Symbol | Conditions |                              |                                           |                                     |            | Values |     |     | Unit |
|-----------|--------|------------|------------------------------|-------------------------------------------|-------------------------------------|------------|--------|-----|-----|------|
|           |        |            | $V_{GE}$ [V]<br>$V_{GS}$ [V] | $V_{CE}$ [V]<br>$V_{DS}$ [V]<br>$V_F$ [V] | $I_C$ [A]<br>$I_D$ [A]<br>$I_F$ [A] | $T_j$ [°C] | Min    | Typ | Max |      |

### Inverter Switch

#### Static

|                                  |              |             |     |      |         |                  |     |                    |                    |    |
|----------------------------------|--------------|-------------|-----|------|---------|------------------|-----|--------------------|--------------------|----|
| Drain-source on-state resistance | $r_{DS(on)}$ |             | 18  |      | 8,3     | 25<br>125<br>150 |     | 76,7<br>136<br>158 | 113 <sup>(1)</sup> | mΩ |
| Gate-source threshold voltage    | $V_{GS(th)}$ |             |     |      | 0,00444 | 25               | 2,8 | 3,5                | 4,8                | V  |
| Gate to Source Leakage Current   | $I_{GSS}$    |             | 21  | 0    |         | 25               |     |                    | 100                | nA |
| Zero Gate Voltage Drain Current  | $I_{DSS}$    |             | 0   | 1200 |         | 25               |     | 1                  | 80                 | μA |
| Internal gate resistance         | $r_g$        |             |     |      |         |                  |     | 4                  |                    | Ω  |
| Gate charge                      | $Q_g$        | 0/18        | 800 | 8,3  | 25      |                  |     | 48                 |                    | nC |
| Gate to source charge            | $Q_{GS}$     |             |     |      |         |                  |     | 11                 |                    |    |
| Gate to drain charge             | $Q_{GD}$     |             |     |      |         |                  |     | 16                 |                    |    |
| Short-circuit input capacitance  | $C_{iss}$    | $f = 1$ Mhz | 0   | 800  | 0       | 25               |     | 1026               |                    | pF |
| Short-circuit output capacitance | $C_{oss}$    |             |     |      |         |                  |     | 35                 |                    |    |
| Reverse transfer capacitance     | $C_{rss}$    |             |     |      |         |                  |     | 3                  |                    |    |
| Diode forward voltage            | $V_{SD}$     |             | 0   |      | 8,3     | 25               |     | 3,3                |                    | V  |

#### Thermal

|                                                    |               |                                       |  |  |  |  |  |      |  |     |
|----------------------------------------------------|---------------|---------------------------------------|--|--|--|--|--|------|--|-----|
| Thermal resistance junction to sink <sup>(2)</sup> | $R_{th(j-s)}$ | $\lambda_{paste} = 5,2$ W/mK<br>(PTM) |  |  |  |  |  | 2,26 |  | K/W |
|----------------------------------------------------|---------------|---------------------------------------|--|--|--|--|--|------|--|-----|



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## Characteristic Values

| Parameter                             | Symbol               | Conditions                                                          |                              |                                           |                                     |            | Values |       |     | Unit |  |
|---------------------------------------|----------------------|---------------------------------------------------------------------|------------------------------|-------------------------------------------|-------------------------------------|------------|--------|-------|-----|------|--|
|                                       |                      |                                                                     | $V_{GE}$ [V]<br>$V_{GS}$ [V] | $V_{CE}$ [V]<br>$V_{DS}$ [V]<br>$V_F$ [V] | $I_C$ [A]<br>$I_D$ [A]<br>$I_F$ [A] | $T_j$ [°C] | Min    | Typ   | Max |      |  |
| Dynamic                               |                      |                                                                     |                              |                                           |                                     |            |        |       |     |      |  |
| Turn-on delay time                    | $t_{d(on)}$          | $R_{gon} = 16\ \Omega$<br>$R_{goff} = 16\ \Omega$                   | 0/18 <sup>(3)</sup>          | 600                                       | 8                                   | 25         |        | 14,32 |     | ns   |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 125        |        | 11,11 |     |      |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 150        |        | 10,53 |     |      |  |
| Rise time                             | $t_r$                |                                                                     |                              |                                           |                                     | 25         |        | 11,26 |     | ns   |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 125        |        | 10,28 |     |      |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 150        |        | 9,67  |     |      |  |
| Turn-off delay time                   | $t_{d(off)}$         |                                                                     |                              |                                           |                                     | 25         |        | 73,5  |     | ns   |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 125        |        | 84,48 |     |      |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 150        |        | 87,03 |     |      |  |
| Fall time                             | $t_f$                |                                                                     |                              |                                           |                                     | 25         |        | 25,21 |     | ns   |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 125        |        | 30,36 |     |      |  |
|                                       |                      |                                                                     |                              |                                           |                                     | 150        |        | 29,74 |     |      |  |
| Turn-on energy (per pulse)            | $E_{on}$             | $Q_{rFWD}$ =0,09 µC<br>$Q_{rFWD}$ =0,098 µC<br>$Q_{rFWD}$ =0,108 µC | 25                           |                                           | 0,11                                |            | mWs    |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 0,114                               |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 0,117                               |            |        |       |     |      |  |
| Turn-off energy (per pulse)           | $E_{off}$            |                                                                     | 25                           |                                           | 0,02                                |            | mWs    |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 0,022                               |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 0,022                               |            |        |       |     |      |  |
| Peak recovery current                 | $I_{RRM}$            | $di/dt$ =1684 A/µs<br>$di/dt$ =1116 A/µs<br>$di/dt$ =933 A/µs       | 25                           |                                           | 13,2                                |            | A      |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 12                                  |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 11,44                               |            |        |       |     |      |  |
| Reverse recovery time                 | $t_{rr}$             |                                                                     | 25                           |                                           | 13,13                               |            | ns     |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 15,8                                |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 18,2                                |            |        |       |     |      |  |
| Recovered charge                      | $Q_r$                |                                                                     | 25                           |                                           | 0,09                                |            | µC     |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 0,098                               |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 0,108                               |            |        |       |     |      |  |
| Reverse recovered energy              | $E_{rec}$            |                                                                     | 25                           |                                           | 0,014                               |            | mWs    |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 0,019                               |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 0,023                               |            |        |       |     |      |  |
| Peak rate of fall of recovery current | $(di_{rr}/dt)_{max}$ |                                                                     | 25                           |                                           | 2899,89                             |            | A/µs   |       |     |      |  |
|                                       |                      |                                                                     | 125                          |                                           | 2157,74                             |            |        |       |     |      |  |
|                                       |                      |                                                                     | 150                          |                                           | 1495,73                             |            |        |       |     |      |  |



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**Characteristic Values**

| Parameter | Symbol | Conditions |                              |                                           |                                     |            | Values |     |     | Unit |
|-----------|--------|------------|------------------------------|-------------------------------------------|-------------------------------------|------------|--------|-----|-----|------|
|           |        |            | $V_{GE}$ [V]<br>$V_{GS}$ [V] | $V_{CE}$ [V]<br>$V_{DS}$ [V]<br>$V_F$ [V] | $I_C$ [A]<br>$I_D$ [A]<br>$I_F$ [A] | $T_j$ [°C] | Min    | Typ | Max |      |

**Thermistor**

**Static**

|                                |                |                        |  |  |  |     |     |      |     |            |
|--------------------------------|----------------|------------------------|--|--|--|-----|-----|------|-----|------------|
| Rated resistance               | $R$            |                        |  |  |  | 25  |     | 5    |     | k $\Omega$ |
| Deviation of R100              | $\Delta_{R/R}$ | $R_{100} = 499 \Omega$ |  |  |  | 100 | 3,2 |      | 3,3 | %          |
| Power dissipation              | $P$            |                        |  |  |  | 25  |     | 130  |     | mW         |
| Power dissipation constant     | $d$            |                        |  |  |  | 25  |     | 1,3  |     | mW/K       |
| B-value                        | $B_{(25/50)}$  | Tol. $\pm 1 \%$        |  |  |  |     |     | 3380 |     | K          |
| Vincotech Thermistor Reference |                |                        |  |  |  |     |     |      | V   |            |

<sup>(1)</sup> Value at chip level

<sup>(2)</sup> Only valid with pre-applied Vincotech thermal interface material.

<sup>(3)</sup> Recommended control voltage of the Switch.

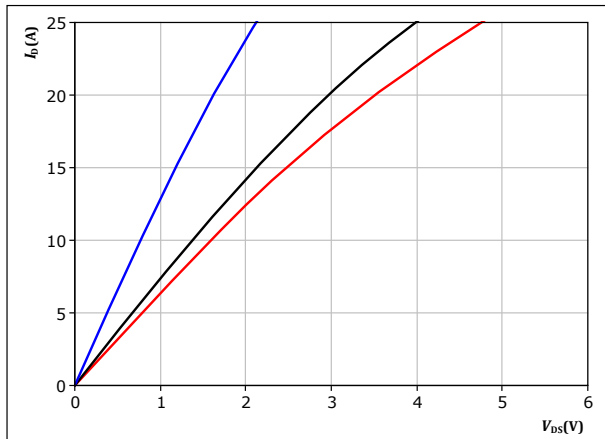


## Inverter Switch Characteristics

figure 1. MOSFET

Typical output characteristics

$$I_D = f(V_{DS})$$

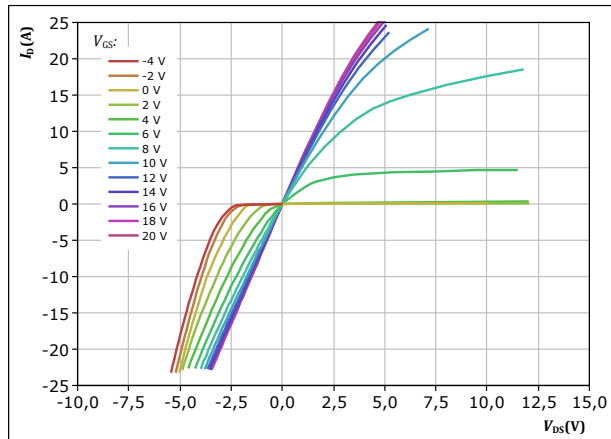


$t_p = 250 \mu s$   
 $V_{GS} = 18 V$   
 $T_j:$  25 °C, 125 °C, 150 °C

figure 2. MOSFET

Typical output characteristics

$$I_D = f(V_{DS})$$

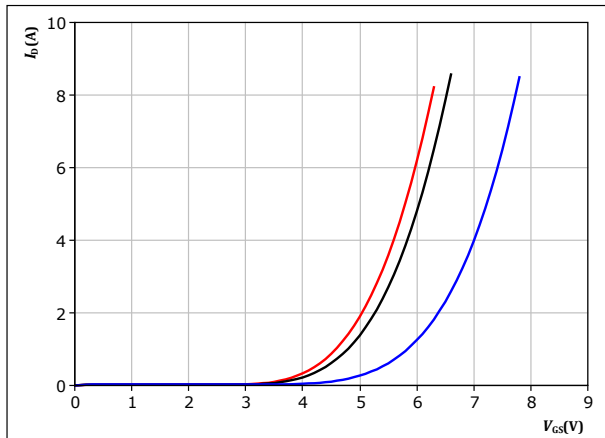


$t_p = 250 \mu s$   
 $T_j = 150 ^\circ C$   
 $V_{GS}$  from -4 V to 20 V in steps of 2 V

figure 3. MOSFET

Typical transfer characteristics

$$I_D = f(V_{GS})$$

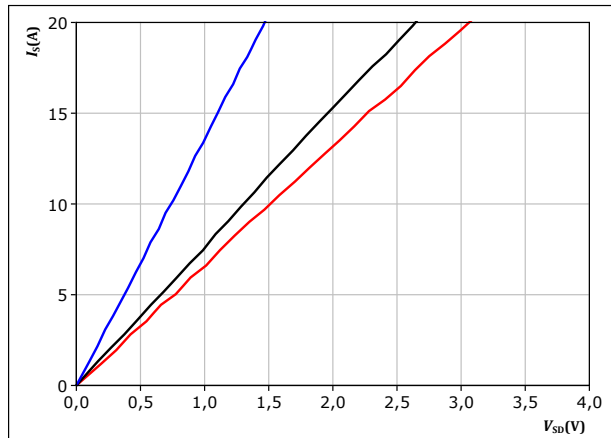


$t_p = 250 \mu s$   
 $V_{DS} = 24 V$   
 $T_j:$  25 °C, 125 °C, 150 °C

figure 4. MOSFET

Typical reverse drain current characteristics

$$I_{SD} = f(V_{SD})$$



$t_p = 250 \mu s$   
 $V_{GS} = 18 V$   
 $T_j:$  25 °C, 125 °C, 150 °C



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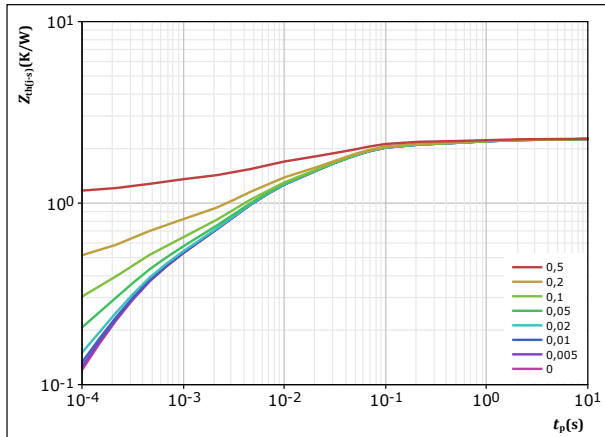
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## Inverter Switch Characteristics

figure 5. MOSFET

Transient thermal impedance as a function of pulse width

$$Z_{th(j-a)} = f(t_p)$$



$$D = t_p / T$$

$$R_{th(j-a)} = 2,261 \text{ K/W}$$

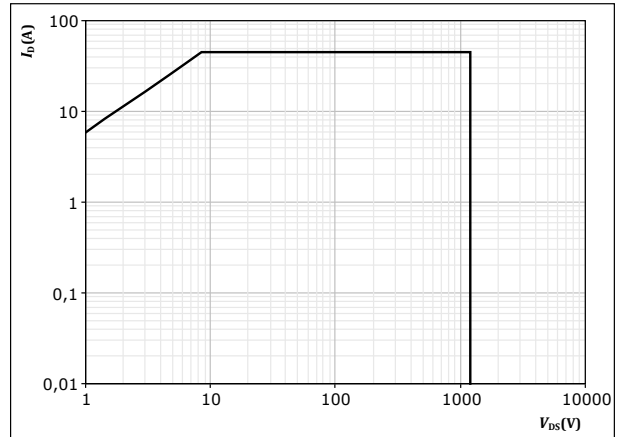
MOSFET thermal model values

| R (K/W)  | $\tau$ (s) |
|----------|------------|
| 5,48E-02 | 1,04E+01   |
| 1,67E-01 | 6,32E-01   |
| 9,82E-01 | 3,53E-02   |
| 7,26E-01 | 3,81E-03   |
| 3,46E-01 | 2,97E-04   |

figure 6. MOSFET

Safe operating area

$$I_D = f(V_{DS})$$



D = single pulse

$$T_a = 80 \text{ } ^\circ\text{C}$$

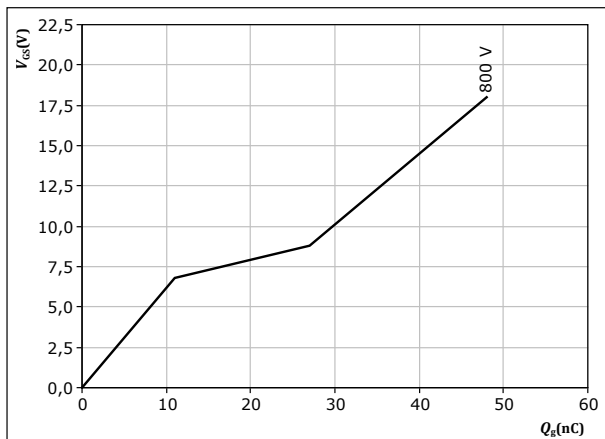
$$V_{GS} = 18 \text{ V}$$

$$T_j = T_{jmax}$$

figure 7. MOSFET

Gate voltage vs gate charge

$$V_{GS} = f(Q_g)$$



$$I_D = 8.3 \text{ A}$$

$$T_j = 25 \text{ } ^\circ\text{C}$$



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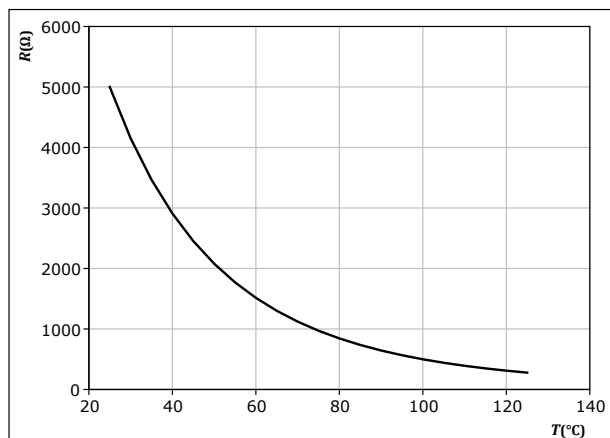
## Thermistor Characteristics

figure 8.

Thermistor

Typical NTC characteristic as function of temperature

$$R_T = f(T)$$





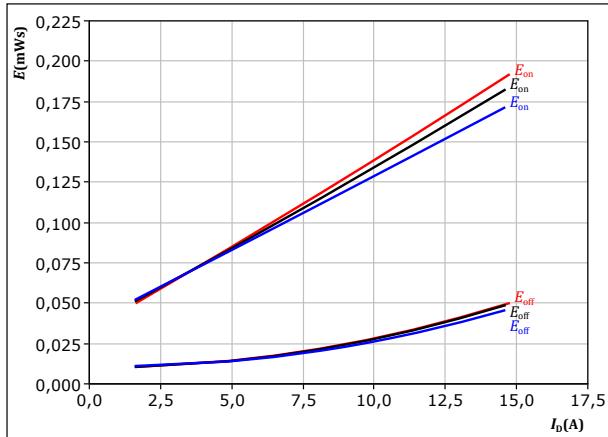
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## Inverter Switching Characteristics

figure 9. MOSFET

Typical switching energy losses as a function of drain current  
 $E = f(I_D)$



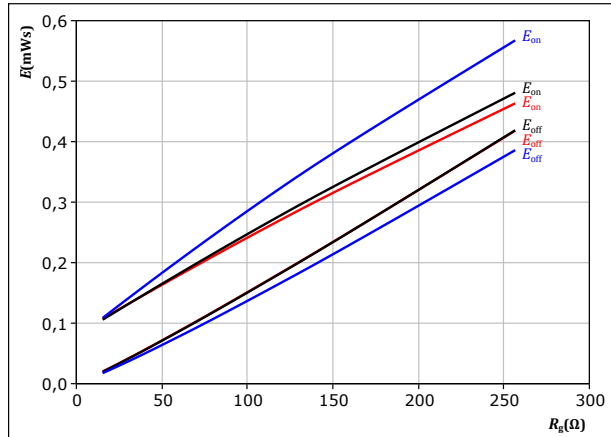
With an inductive load at

$V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$   $\Omega$   
 $R_{goff} = 16$   $\Omega$

$T_j$ : 25 °C  
125 °C  
150 °C

figure 10. MOSFET

Typical switching energy losses as a function of MOSFET turn on gate resistor  
 $E = f(R_g)$



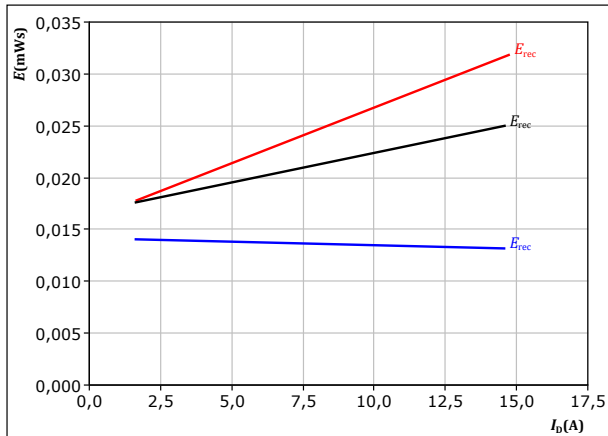
With an inductive load at

$V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A

$T_j$ : 25 °C  
125 °C  
150 °C

figure 11. MOSFET

Typical reverse recovered energy loss as a function of drain current  
 $E_{rec} = f(I_D)$



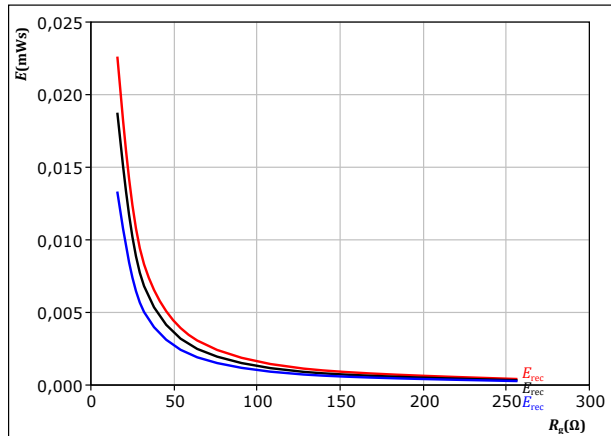
With an inductive load at

$V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$   $\Omega$

$T_j$ : 25 °C  
125 °C  
150 °C

figure 12. MOSFET

Typical reverse recovered energy loss as a function of MOSFET turn on gate resistor  
 $E_{rec} = f(R_g)$



With an inductive load at

$V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A

$T_j$ : 25 °C  
125 °C  
150 °C



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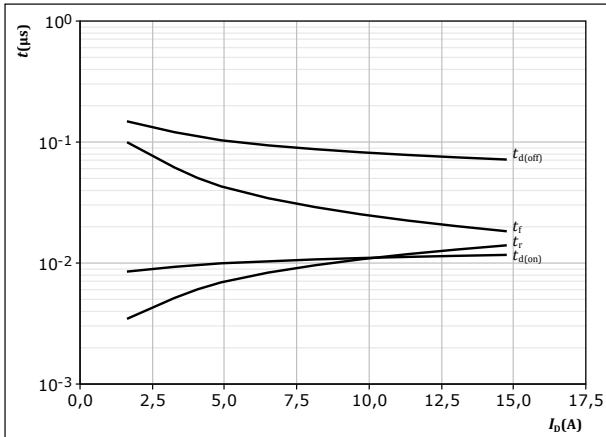
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## Inverter Switching Characteristics

figure 13. MOSFET

Typical switching times as a function of drain current  
 $t = f(I_D)$

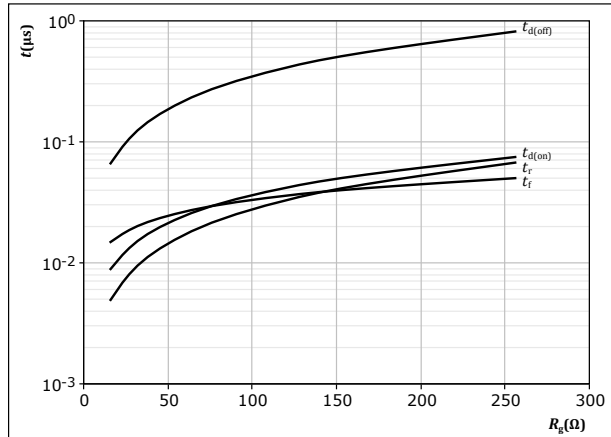


With an inductive load at

$T_j = 150$  °C  
 $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$  Ω  
 $R_{goff} = 16$  Ω

figure 14. MOSFET

Typical switching times as a function of MOSFET turn on gate resistor  
 $t = f(R_g)$

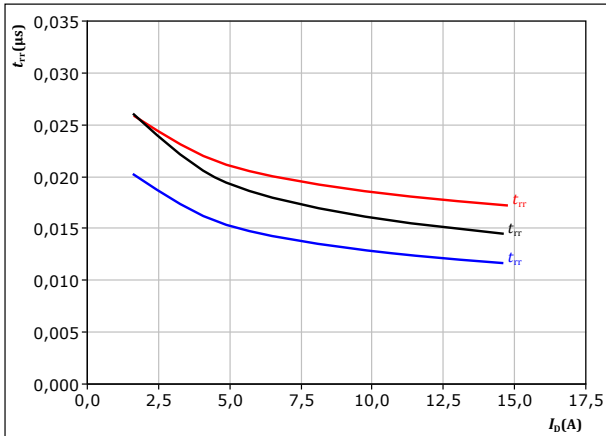


With an inductive load at

$T_j = 150$  °C  
 $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A

figure 15. MOSFET

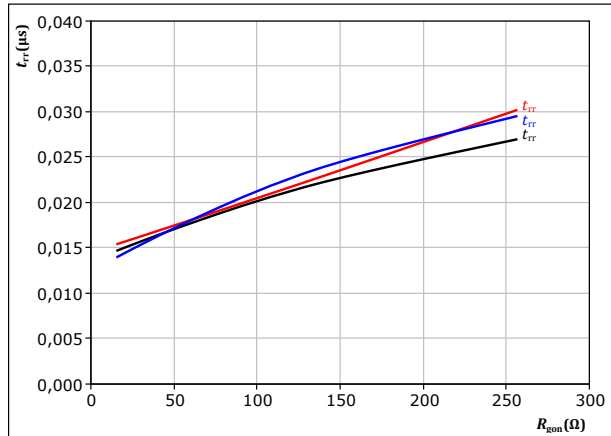
Typical reverse recovery time as a function of drain current  
 $t_{rr} = f(I_D)$



At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$  Ω  
 $T_j: 25$  °C (blue)  
 $125$  °C (black)  
 $150$  °C (red)

figure 16. MOSFET

Typical reverse recovery time as a function of MOSFET turn on gate resistor  
 $t_{rr} = f(R_{gon})$



At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A  
 $T_j: 25$  °C (blue)  
 $125$  °C (black)  
 $150$  °C (red)



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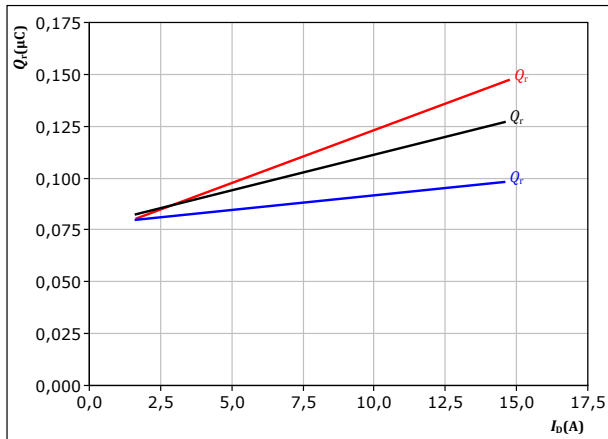
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## Inverter Switching Characteristics

figure 17. MOSFET

Typical recovered charge as a function of drain current

$$Q_r = f(I_D)$$

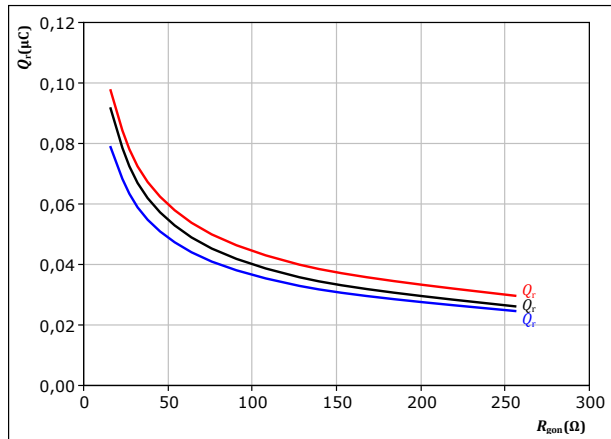


At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$   $\Omega$   
 $T_j$ : 25 °C  
125 °C  
150 °C

figure 18. MOSFET

Typical recovered charge as a function of MOSFET turn on gate resistor

$$Q_r = f(R_{gon})$$

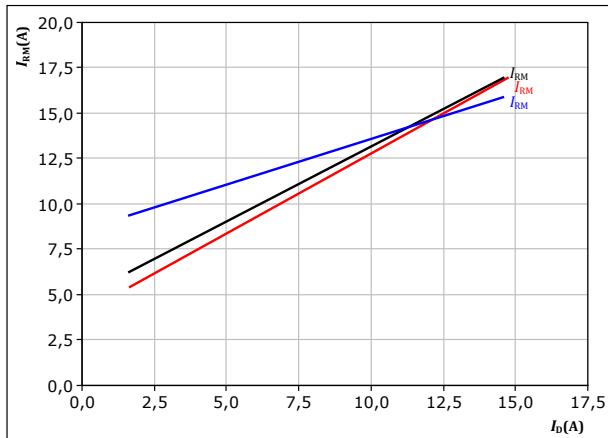


At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A  
 $T_j$ : 25 °C  
125 °C  
150 °C

figure 19. MOSFET

Typical peak reverse recovery current as a function of drain current

$$I_{RM} = f(I_D)$$

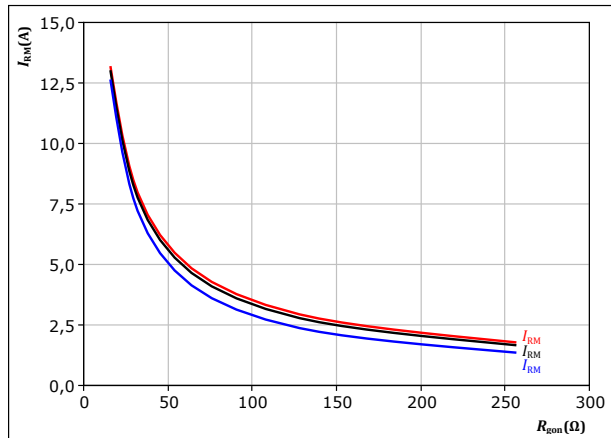


At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$   $\Omega$   
 $T_j$ : 25 °C  
125 °C  
150 °C

figure 20. MOSFET

Typical peak reverse recovery current as a function of MOSFET turn on gate resistor

$$I_{RM} = f(R_{gon})$$



At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A  
 $T_j$ : 25 °C  
125 °C  
150 °C



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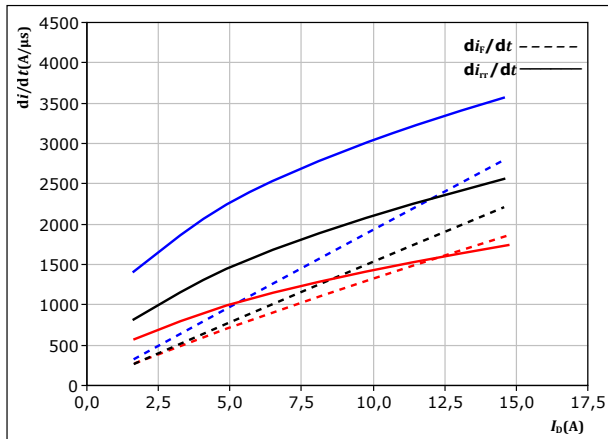
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## Inverter Switching Characteristics

figure 21. MOSFET

Typical rate of fall of forward and reverse recovery current as a function of drain current  
 $di_f/dt, di_r/dt = f(I_D)$

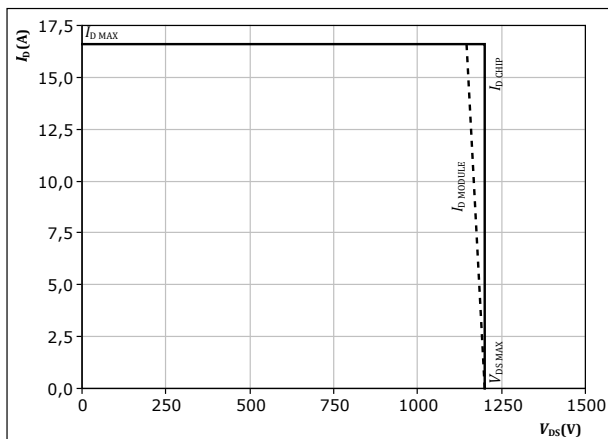


At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $R_{gon} = 16$   $\Omega$   
 $T_j = 25$  °C  
 $T_j = 125$  °C  
 $T_j = 150$  °C

figure 23. MOSFET

Reverse bias safe operating area

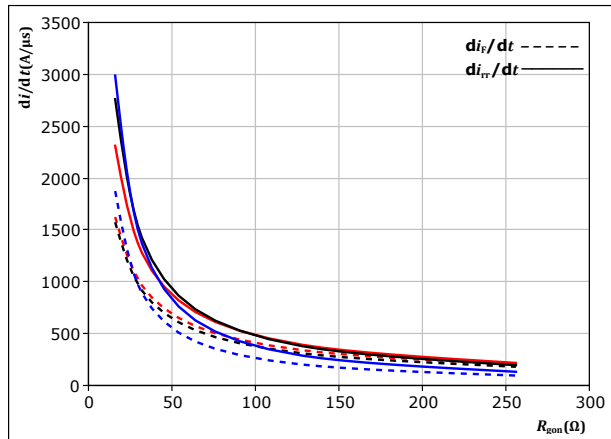
$I_D = f(V_{DS})$



At  $T_j = 150$  °C  
 $R_{gon} = 16$   $\Omega$   
 $R_{goff} = 16$   $\Omega$

figure 22. MOSFET

Typical rate of fall of forward and reverse recovery current as a function of turn on gate resistor  
 $di_f/dt, di_r/dt = f(R_{gon})$



At  $V_{DS} = 600$  V  
 $V_{GS} = 0/18$  V  
 $I_D = 8$  A  
 $T_j = 25$  °C  
 $T_j = 125$  °C  
 $T_j = 150$  °C



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## Inverter Switching Definitions

figure 24. MOSFET

Turn-off Switching Waveforms & definition of  $t_{doff}$   $t_{Eoff}$  ( $t_{Eoff}$  = integrating time for  $E_{off}$ )

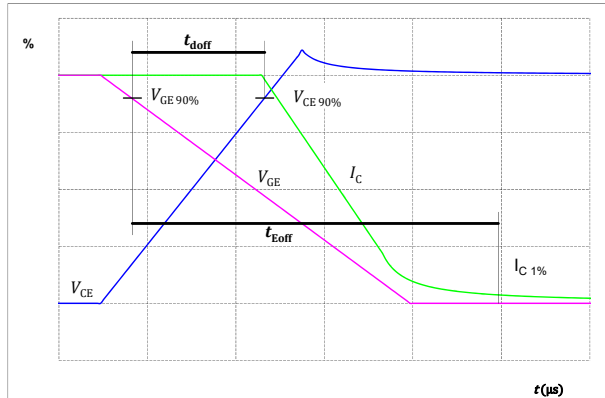


figure 25. MOSFET

Turn-on Switching Waveforms & definition of  $t_{don}$   $t_{Eon}$  ( $t_{Eon}$  = integrating time for  $E_{on}$ )

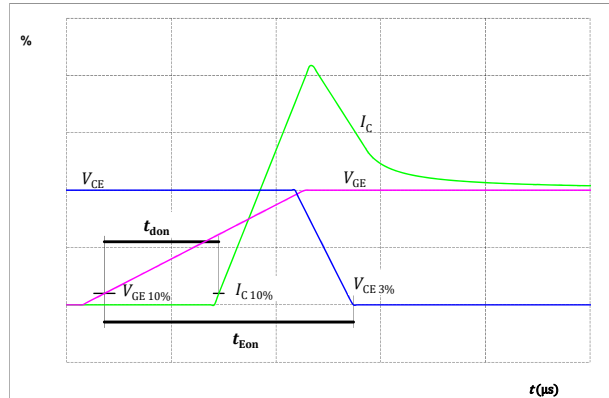


figure 26. MOSFET

Turn-off Switching Waveforms & definition of  $t_f$

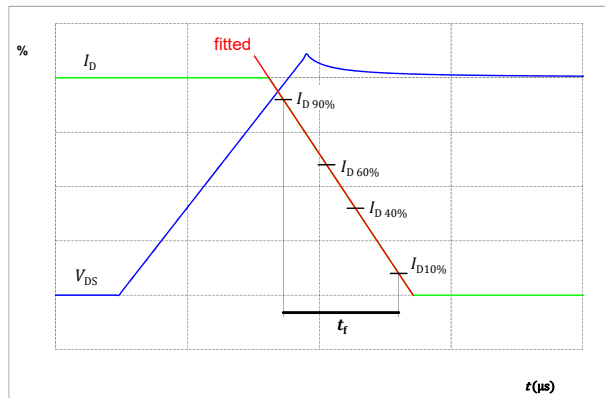
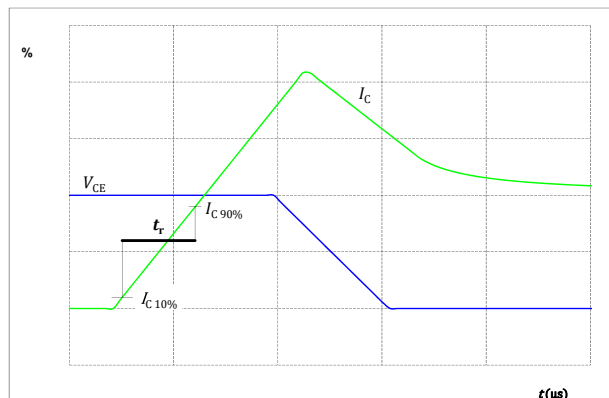


figure 27. MOSFET

Turn-on Switching Waveforms & definition of  $t_r$





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## Inverter Switching Definitions

figure 28.

FWD

Turn-off Switching Waveforms & definition of  $t_{tr}$

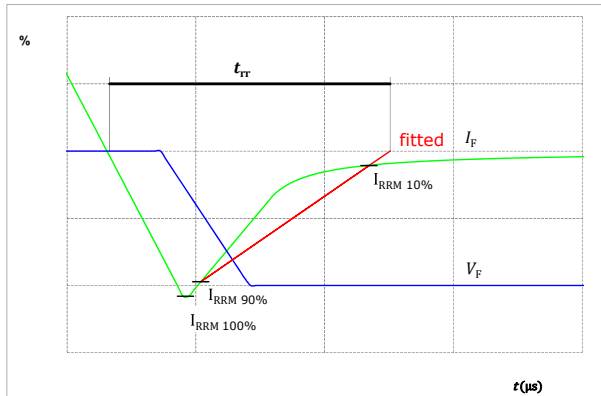


figure 29.

FWD

Turn-on Switching Waveforms & definition of  $t_{Qr}$  ( $t_{Qr}$  = integrating time for  $Q_r$ )

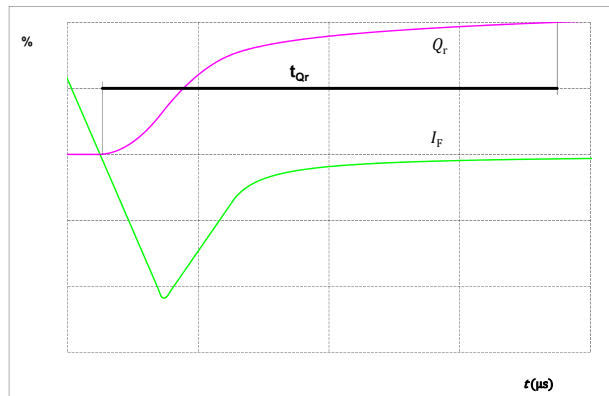
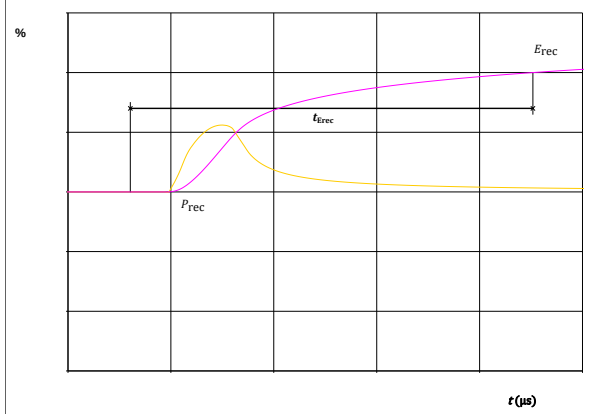


figure 30.

FWD

Turn-on Switching Waveforms & definition of  $t_{Erec}$  ( $t_{Erec}$  = integrating time for  $E_{rec}$ )





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datasheet

| Ordering Code                            |                              |
|------------------------------------------|------------------------------|
| Version                                  | Ordering Code                |
| Without thermal paste                    | 10-EZ126PB090MR-LS16F48T     |
| With thermal paste (5,2 W/mK, PTM6000HV) | 10-EZ126PB090MR-LS16F48T-/7/ |

| Marking                                                                           |            |                                        |                     |                    |                   |                |
|-----------------------------------------------------------------------------------|------------|----------------------------------------|---------------------|--------------------|-------------------|----------------|
|  | Text       | Name<br>NN-NNNNNNNNNNNNNN-<br>TTTTTIVV | Date code<br>WWYY   | UL & VIN<br>UL VIN | Lot<br>LLLLL      | Serial<br>SSSS |
|                                                                                   | Datamatrix | Type&Ver<br>TTTTTTIVV                  | Lot number<br>LLLLL | Serial<br>SSSS     | Date code<br>WWYY |                |

# Outline

Pin table [mm]

| Pin | X    | Y    | Function |
|-----|------|------|----------|
| 1   | 32   | 0    | G15      |
| 2   | 28,8 | 0    | S15      |
| 3   | 19,2 | 0    | G13      |
| 4   | 16   | 0    | S13      |
| 5   | 3,2  | 0    | S11      |
| 6   | 0    | 0    | G11      |
| 7   | 32   | 6,4  | Ph3      |
| 8   | 19,2 | 6,4  | Ph2      |
| 9   | 0    | 6,4  | Ph1      |
| 10  | 32   | 12,8 | DC-3     |
| 11  | 19,2 | 12,8 | DC-2     |
| 12  | 0    | 12,8 | DC-1     |
| 13  | 28,8 | 19,2 | DC+      |
| 14  | 19,2 | 19,2 | DC+      |
| 15  | 9,6  | 19,2 | DC+      |
| 16  | 32   | 25,6 | Therm2   |
| 17  | 28,8 | 25,6 | Therm1   |
| 18  | 22,4 | 25,6 | G16      |
| 19  | 19,2 | 25,6 | S16      |
| 20  | 12,8 | 25,6 | G14      |
| 21  | 9,6  | 25,6 | S14      |
| 22  | 3,2  | 25,6 | G12      |
| 23  | 0    | 25,6 | S12      |

center of press-fit pin head  
pin head type "T" PCB pushed through-hole Ø1 mm +0.09 / -0.06  
for further PCB design rules refer to the latest handling instruction

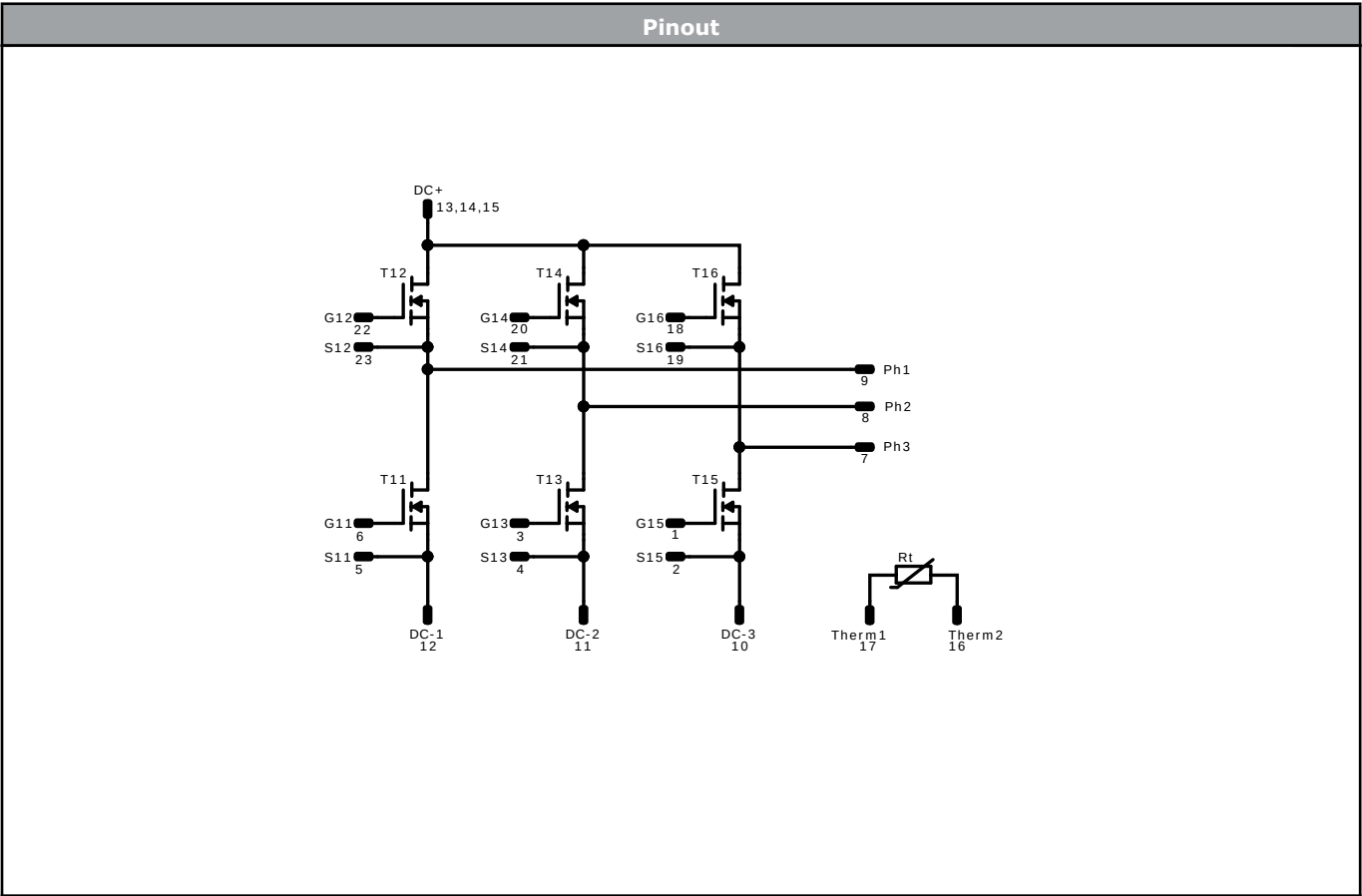
50,8 ±0,1  
8,4 ±0,5

12,8  
16

Y  
X

Technical drawing showing the component outline and pin locations. The side view shows the component height and pin pitch. The top view shows the component footprint and pin locations. Dimensions are given in mm.

Tolerance of proportions: ±0.4mm at the end of pins  
Dimension of coordinate axis is only offset without tolerance



| Identification               |            |         |         |                 |         |
|------------------------------|------------|---------|---------|-----------------|---------|
| ID                           | Component  | Voltage | Current | Function        | Comment |
| T11, T12, T13, T14, T15, T16 | MOSFET     | 1200 V  | 90 mΩ   | Inverter Switch |         |
| Rt                           | Thermistor |         |         | Thermistor      |         |



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**10-EZ126PB090MR-LS16F48T**  
datasheet

| Packaging instruction                                                                                                                                                                                                           |      |          |      |                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------|-------------------------------------------------------------------------------------|
| Standard packaging quantity (SPQ) 100                                                                                                                                                                                           | >SPQ | Standard | <SPQ | Sample                                                                              |
| Handling instruction                                                                                                                                                                                                            |      |          |      |                                                                                     |
| Handling instructions for <i>flow</i> E1 packages see vincotech.com website.                                                                                                                                                    |      |          |      |                                                                                     |
| Package data                                                                                                                                                                                                                    |      |          |      |                                                                                     |
| Package data for <i>flow</i> E1 packages see vincotech.com website.                                                                                                                                                             |      |          |      |                                                                                     |
| Vincotech thermistor reference                                                                                                                                                                                                  |      |          |      |                                                                                     |
| See Vincotech thermistor reference table at vincotech.com website.                                                                                                                                                              |      |          |      |                                                                                     |
| UL recognition and file number                                                                                                                                                                                                  |      |          |      |                                                                                     |
| This device is UL 1557 recognized under E192116 up to a junction temperature under switching condition $T_{j,sp}=175^{\circ}\text{C}$ and up to 3500VAC/1min isolation voltage. For more information see vincotech.com website. |      |          |      |  |

| Document No.:                  | Date:        | Modification:   | Pages |
|--------------------------------|--------------|-----------------|-------|
| 10-EZ126PB090MR-LS16F48T-D1-14 | 21 Sep. 2026 | Initial Release |       |

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.