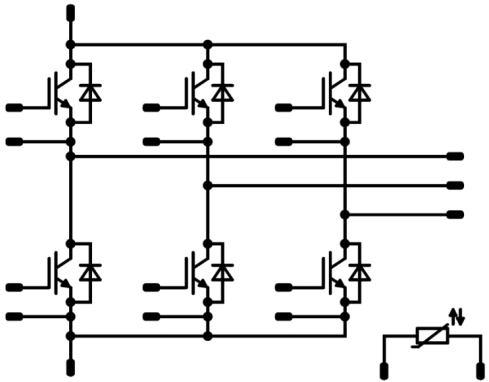




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| VINcoPACK E3                                                                                                                                                                                                                                                                                                                                  |  | 1200 V / 100 A                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|
| <b>Features</b> <ul style="list-style-type: none"> <li>• IGBT M7 technology with low <math>V_{CEsat}</math> and improved EMC behavior</li> <li>• New SoLid Cover Technology for higher reliability</li> <li>• Industry standard housing</li> <li>• Press-fit pin and pre-applied phase-change Thermal Interface Material available</li> </ul> |  | <b>VINco E3</b>   |
| <b>Target applications</b> <ul style="list-style-type: none"> <li>• Industrial Drives</li> </ul>                                                                                                                                                                                                                                              |  | <b>Schematic</b>  |
| <b>Types</b> <ul style="list-style-type: none"> <li>• A0-VS126PA100M7-L997F70</li> <li>• A0-VP126PA150M7-L997F70T</li> </ul>                                                                                                                                                                                                                  |  |                                                                                                      |

## Maximum Ratings

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

| Parameter                         | Symbol     | Condition                             | Value | Unit |
|-----------------------------------|------------|---------------------------------------|-------|------|
| <b>Inverter Switch</b>            |            |                                       |       |      |
| Collector-emitter voltage         | $V_{CES}$  |                                       | 1200  | V    |
| Collector current                 | $I_C$      | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 114   | A    |
| Repetitive peak collector current | $I_{CRM}$  | $t_p$ limited by $T_{jmax}$           | 200   | A    |
| Total power dissipation           | $P_{tot}$  | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 245   | W    |
| Gate-emitter voltage              | $V_{GES}$  |                                       | ±20   | V    |
| Maximum junction temperature      | $T_{jmax}$ |                                       | 175   | °C   |



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## Maximum Ratings

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

| Parameter                           | Symbol     | Condition                             | Value | Unit |
|-------------------------------------|------------|---------------------------------------|-------|------|
| <b>Inverter Diode</b>               |            |                                       |       |      |
| Peak repetitive reverse voltage     | $V_{RRM}$  |                                       | 1200  | V    |
| Continuous (direct) forward current | $I_F$      | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 92    | A    |
| Repetitive peak forward current     | $I_{FRM}$  |                                       | 200   | A    |
| Total power dissipation             | $P_{tot}$  | $T_j = T_{jmax}$ $T_s = 80\text{ °C}$ | 174   | W    |
| 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* $t_p = 2\text{ s}$ | 4000      | V  |
|                            |            | AC Voltage $t_p = 1\text{ min}$     | 2500      | V  |
| Creepage distance          |            |                                     | 9         | mm |
| Clearance                  |            |                                     | min. 12,7 | mm |
| Comparative Tracking Index | CTI        |                                     | > 200     |    |

\*100 % tested in production



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## Characteristic Values

| Parameter | Symbol | Conditions |                              |                                           |                                     |            | Value |     |     | 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

|                                      |              |                   |    |      |      |                  |     |                      |      |    |
|--------------------------------------|--------------|-------------------|----|------|------|------------------|-----|----------------------|------|----|
| Gate-emitter threshold voltage       | $V_{GE(th)}$ | $V_{GE} = V_{CE}$ |    |      | 0,01 | 25               | 5,4 | 6                    | 6,6  | V  |
| Collector-emitter saturation voltage | $V_{CEsat}$  |                   | 15 |      | 100  | 25<br>125<br>150 |     | 1,61<br>1,82<br>1,91 | 2,05 | V  |
| Collector-emitter cut-off current    | $I_{CES}$    |                   | 0  | 1200 |      | 25               |     |                      | 110  | μA |
| Gate-emitter leakage current         | $I_{GES}$    |                   | 20 | 0    |      | 25               |     |                      | 500  | nA |
| Internal gate resistance             | $r_g$        |                   |    |      |      |                  |     | none                 |      | Ω  |
| Input capacitance                    | $C_{ies}$    |                   | 0  | 10   |      | 25               |     | 21000                |      | pF |
| Output capacitance                   | $C_{oes}$    |                   |    |      |      |                  |     | 700                  |      |    |
| Reverse transfer capacitance         | $C_{res}$    |                   |    |      |      |                  |     | 280                  |      |    |
| Gate charge                          | $Q_g$        |                   | 15 | 600  | 100  | 25               |     | 650                  |      | nC |

#### Thermal

|                                     |               |                                               |  |  |  |  |  |      |  |     |
|-------------------------------------|---------------|-----------------------------------------------|--|--|--|--|--|------|--|-----|
| Thermal resistance junction to sink | $R_{th(j-s)}$ | phase-change material<br>$\lambda = 3,4$ W/mK |  |  |  |  |  | 0,39 |  | K/W |
|-------------------------------------|---------------|-----------------------------------------------|--|--|--|--|--|------|--|-----|

#### Dynamic

|                             |              |                                                                               |          |     |     |                  |  |                         |  |     |
|-----------------------------|--------------|-------------------------------------------------------------------------------|----------|-----|-----|------------------|--|-------------------------|--|-----|
| Turn-on delay time          | $t_{d(on)}$  | $R_{goff} = 2 \Omega$<br>$R_{gon} = 2 \Omega$                                 | $\pm 15$ | 600 | 100 | 25<br>125<br>150 |  | 118<br>118<br>118       |  | ns  |
| Rise time                   | $t_r$        |                                                                               |          |     |     | 25<br>125<br>150 |  | 10<br>12<br>13          |  |     |
| Turn-off delay time         | $t_{d(off)}$ |                                                                               |          |     |     | 25<br>125<br>150 |  | 174<br>200<br>206       |  |     |
| Fall time                   | $t_f$        |                                                                               |          |     |     | 25<br>125<br>150 |  | 83<br>96<br>107         |  |     |
| Turn-on energy (per pulse)  | $E_{on}$     | $Q_{tFWD} = 11,6 \mu C$<br>$Q_{tFWD} = 17,3 \mu C$<br>$Q_{tFWD} = 19,2 \mu C$ |          |     |     | 25<br>125<br>150 |  | 3,255<br>4,868<br>5,368 |  | mWs |
| Turn-off energy (per pulse) | $E_{off}$    |                                                                               |          |     |     | 25<br>125<br>150 |  | 6,605<br>8,774<br>9,490 |  |     |



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## Characteristic Values

| Parameter | Symbol | Conditions |                              |                                           |                                     |            | Value |     |     | 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 Diode

#### Static

|                 |       |  |  |  |     |                  |  |                      |     |   |
|-----------------|-------|--|--|--|-----|------------------|--|----------------------|-----|---|
| Forward voltage | $V_F$ |  |  |  | 100 | 25<br>125<br>150 |  | 1,82<br>1,96<br>1,97 | 2,1 | V |
|-----------------|-------|--|--|--|-----|------------------|--|----------------------|-----|---|

#### Thermal

|                                     |               |                                               |  |  |  |  |  |      |  |     |
|-------------------------------------|---------------|-----------------------------------------------|--|--|--|--|--|------|--|-----|
| Thermal resistance junction to sink | $R_{th(j-s)}$ | phase-change material<br>$\lambda = 3,4$ W/mK |  |  |  |  |  | 0,55 |  | K/W |
|-------------------------------------|---------------|-----------------------------------------------|--|--|--|--|--|------|--|-----|

#### Dynamic

|                                       |                      |                                                                                     |          |     |     |                  |  |                            |  |            |
|---------------------------------------|----------------------|-------------------------------------------------------------------------------------|----------|-----|-----|------------------|--|----------------------------|--|------------|
| Peak recovery current                 | $I_{RRM}$            | $di/dt = 9387$ A/ $\mu$ s<br>$di/dt = 7872$ A/ $\mu$ s<br>$di/dt = 8350$ A/ $\mu$ s | $\pm 15$ | 600 | 100 | 25<br>125<br>150 |  | 178<br>166<br>165          |  | A          |
| Reverse recovery time                 | $t_{rr}$             |                                                                                     |          |     |     | 25<br>125<br>150 |  | 149<br>312<br>339          |  | ns         |
| Recovered charge                      | $Q_r$                |                                                                                     |          |     |     | 25<br>125<br>150 |  | 11,601<br>17,270<br>19,181 |  | $\mu$ C    |
| Reverse recovered energy              | $E_{rec}$            |                                                                                     |          |     |     | 25<br>125<br>150 |  | 5,138<br>7,753<br>8,588    |  | mWs        |
| Peak rate of fall of recovery current | $(di_{rr}/dt)_{max}$ |                                                                                     |          |     |     | 25<br>125<br>150 |  | 4044<br>2649<br>2147       |  | A/ $\mu$ s |

### Thermistor

|                            |                |                        |  |  |  |     |    |      |    |            |
|----------------------------|----------------|------------------------|--|--|--|-----|----|------|----|------------|
| Rated resistance           | $R$            |                        |  |  |  | 25  |    | 5    |    | k $\Omega$ |
| Deviation of $R_{100}$     | $\Delta_{R/R}$ | $R_{100} = 493 \Omega$ |  |  |  | 100 | -5 |      | +5 | %          |
| Power dissipation          | $P$            |                        |  |  |  | 25  |    | 245  |    | mW         |
| Power dissipation constant |                |                        |  |  |  | 25  |    | 1,4  |    | mW/K       |
| B-value                    | $B_{(25/50)}$  | Tol. $\pm 2$ %         |  |  |  | 25  |    | 3375 |    | K          |
| B-value                    | $B_{(25/100)}$ | Tol. $\pm 2$ %         |  |  |  | 25  |    | 3437 |    | K          |
| Vincotech NTC Reference    |                |                        |  |  |  |     |    |      | K  |            |



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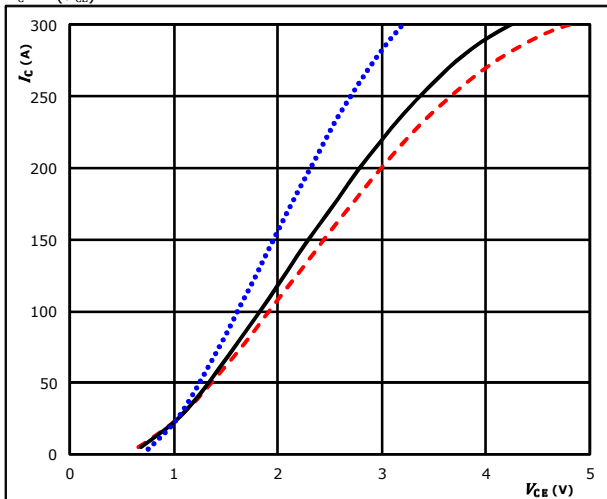
datasheet

## Inverter Switch Characteristics

**figure 1.** IGBT

Typical output characteristics

$$I_C = f(V_{CE})$$

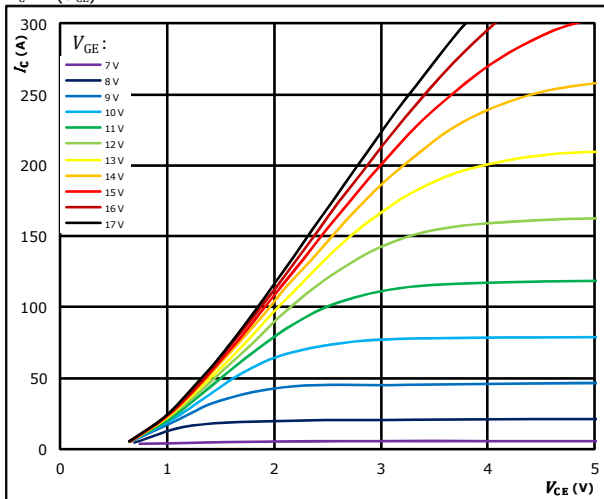


$t_p = 250 \mu s$   
 $V_{GE} = 15 V$   
 $T_j: 25 \text{ } ^\circ C$  (blue dotted)  
 $125 \text{ } ^\circ C$  (black solid)  
 $150 \text{ } ^\circ C$  (red dashed)

**figure 2.** IGBT

Typical output characteristics

$$I_C = f(V_{CE})$$

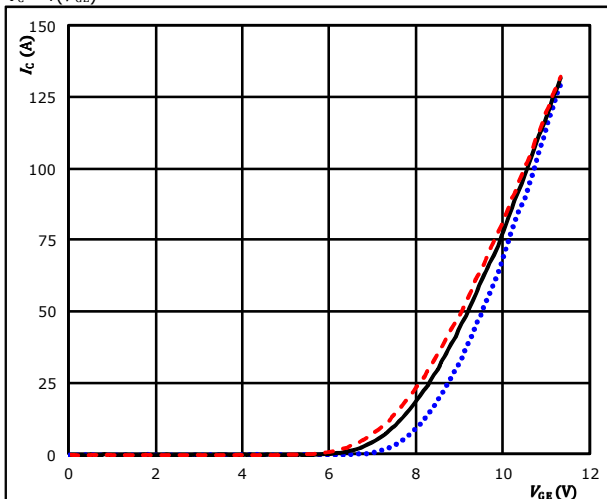


$t_p = 250 \mu s$   
 $T_j = 150 \text{ } ^\circ C$   
 $V_{GE}$  from 7 V to 17 V in steps of 1 V

**figure 3.** IGBT

Typical transfer characteristics

$$I_C = f(V_{GE})$$

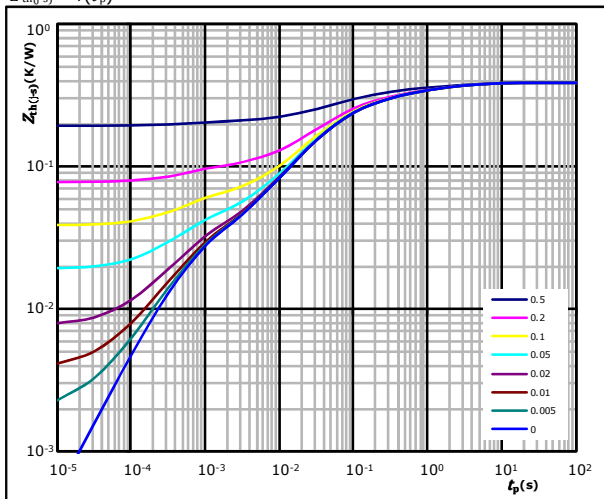


$t_p = 100 \mu s$   
 $V_{CE} = 10 V$   
 $T_j: 25 \text{ } ^\circ C$  (blue dotted)  
 $125 \text{ } ^\circ C$  (black solid)  
 $150 \text{ } ^\circ C$  (red dashed)

**figure 4.** IGBT

Transient thermal impedance as function of pulse duration

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



$D = t_p / T$   
 $R_{th(j-s)} = 0,39 \text{ K/W}$   
IGBT thermal model values  

| $R \text{ (K/W)}$ | $\tau \text{ (s)}$ |
|-------------------|--------------------|
| 2,95E-02          | 4,23E+00           |
| 5,41E-02          | 1,02E+00           |
| 7,95E-02          | 2,16E-01           |
| 1,43E-01          | 5,11E-02           |
| 5,57E-02          | 1,37E-02           |
| 2,51E-02          | 5,61E-04           |



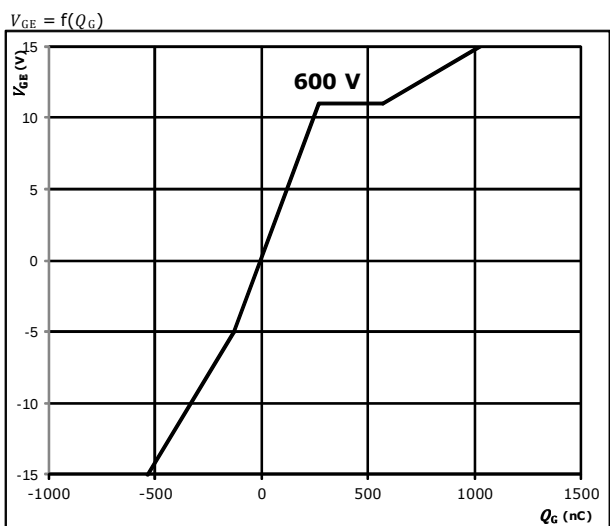
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## Inverter Switch Characteristics

**figure 5.** IGBT

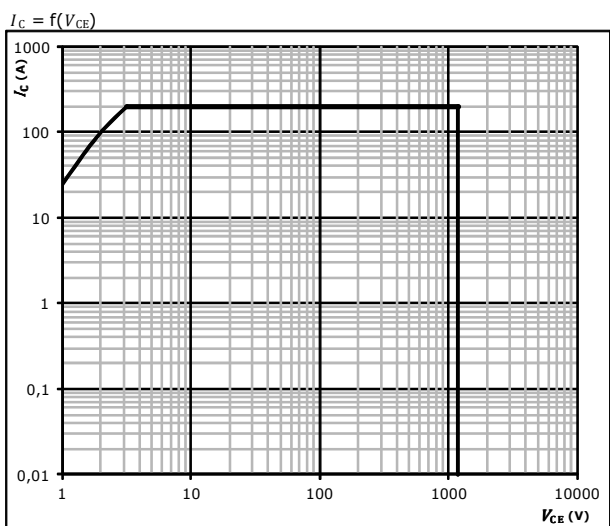
Gate voltage vs gate charge



$I_C = 100$  A  
 $V_{GE} = \pm 15$  V  
 $V_{CC} = 600$  V

**figure 5.** IGBT

Safe operating area



$D =$  single pulse  
 $T_s = 80$  °C  
 $V_{GE} = \pm 15$  V  
 $T_j = T_{jmax}$



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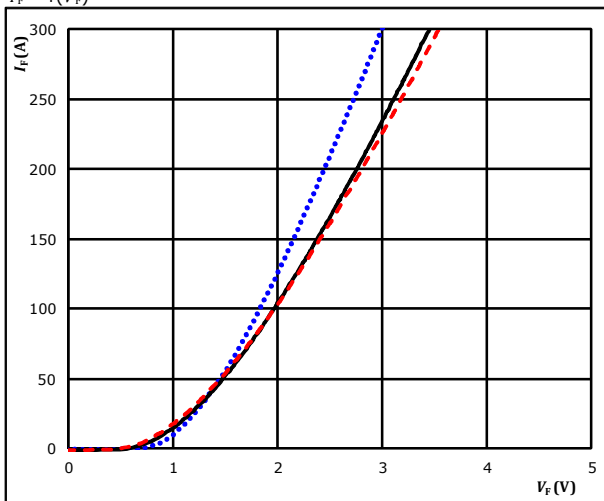
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## Inverter Diode Characteristics

**figure 1.** FWD

Typical forward characteristics

$$I_F = f(V_F)$$

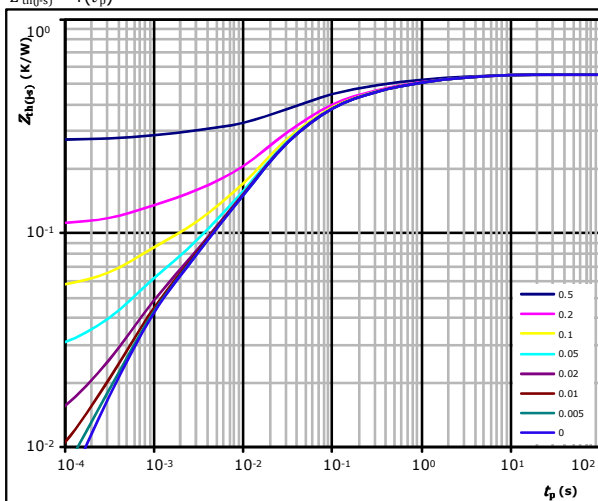


$t_p = 250 \mu s$   
 $T_j$ : 25 °C (blue dotted line)  
 125 °C (black solid line)  
 150 °C (red dashed line)

**figure 2.** FWD

Transient thermal impedance as a function of pulse width

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



$D = t_p / T$   
 $R_{th(j-s)} = 0,55 \text{ K/W}$   
 FWD thermal model values

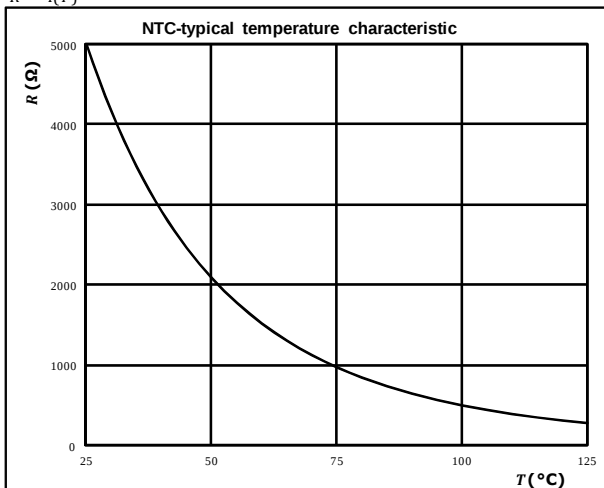
| $R \text{ (K/W)}$ | $\tau \text{ (s)}$ |
|-------------------|--------------------|
| 3,06E-02          | 4,12E+00           |
| 6,23E-02          | 8,89E-01           |
| 1,10E-01          | 1,86E-01           |
| 2,00E-01          | 4,16E-02           |
| 1,04E-01          | 1,19E-02           |
| 4,09E-02          | 8,48E-04           |

## Thermistor Characteristics

**figure 1.** Thermistor

Typical NTC characteristic  
 as a function of temperature

$$R = f(T)$$





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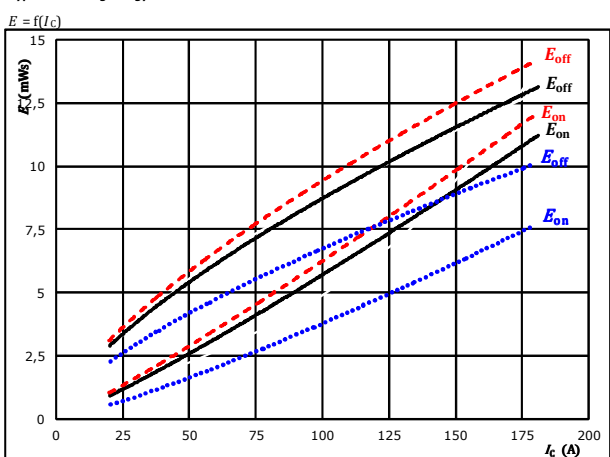
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datasheet

## Inverter Switching Characteristics

**figure 1.** IGBT

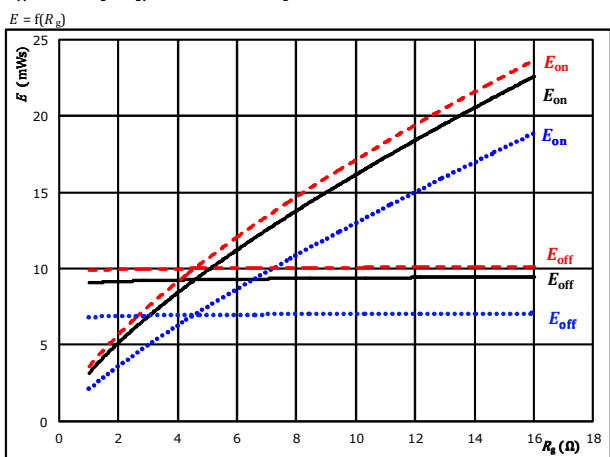
Typical switching energy losses as a function of collector current



With an inductive load at  
 $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $R_{gon} = 2$   $\Omega$   
 $R_{goff} = 2$   $\Omega$   
 $T_J$ : 25 °C (blue dotted), 125 °C (black solid), 150 °C (red dashed)

**figure 2.** IGBT

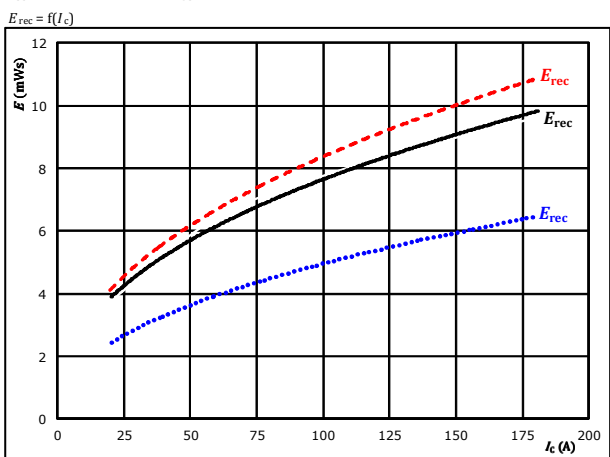
Typical switching energy losses as a function of gate resistor



With an inductive load at  
 $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $I_C = 100$  A  
 $T_J$ : 25 °C (blue dotted), 125 °C (black solid), 150 °C (red dashed)

**figure 3.** FWD

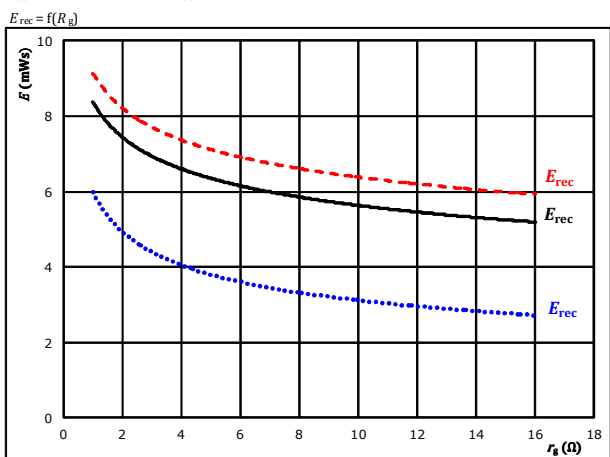
Typical reverse recovered energy loss as a function of collector current



With an inductive load at  
 $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $R_{gon} = 2$   $\Omega$   
 $T_J$ : 25 °C (blue dotted), 125 °C (black solid), 150 °C (red dashed)

**figure 4.** FWD

Typical reverse recovered energy loss as a function of gate resistor



With an inductive load at  
 $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $I_C = 100$  A  
 $T_J$ : 25 °C (blue dotted), 125 °C (black solid), 150 °C (red dashed)



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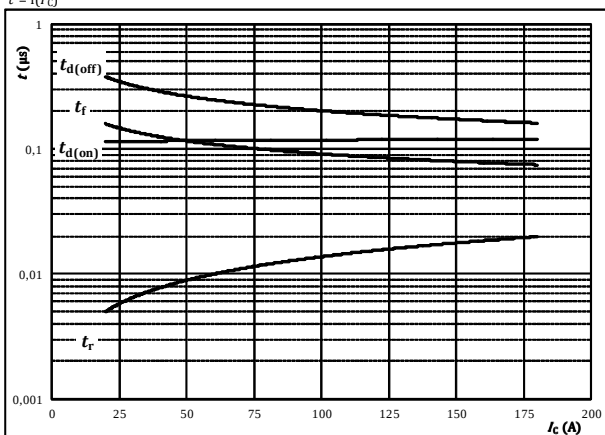
datasheet

## Inverter Switching Characteristics

**figure 5.** IGBT

Typical switching times as a function of collector current

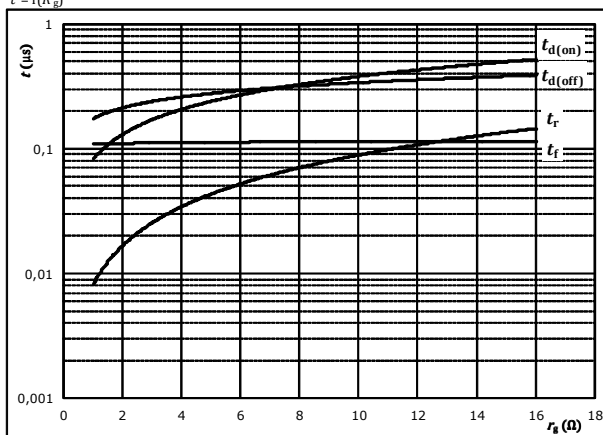
$$t = f(I_C)$$



**figure 6.** IGBT

Typical switching times as a function of gate resistor

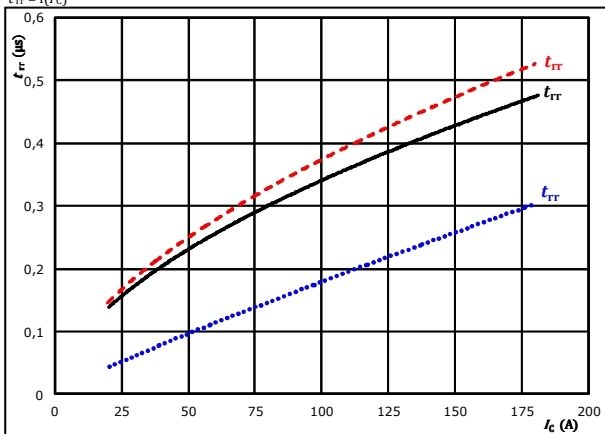
$$t = f(R_g)$$



**figure 7.** FWD

Typical reverse recovery time as a function of collector current

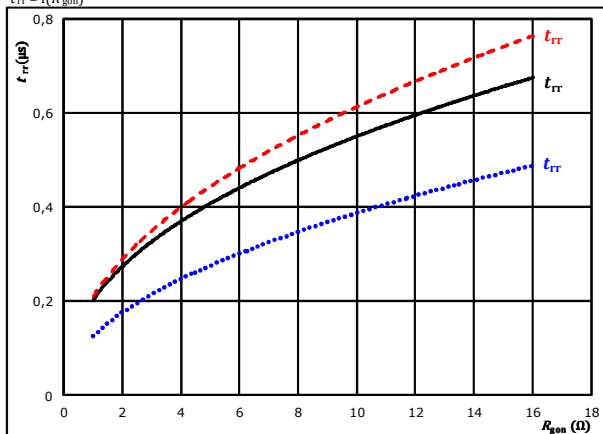
$$t_{rr} = f(I_C)$$



**figure 8.** FWD

Typical reverse recovery time as a function of IGBT turn on gate resistor

$$t_{rr} = f(R_{gon})$$





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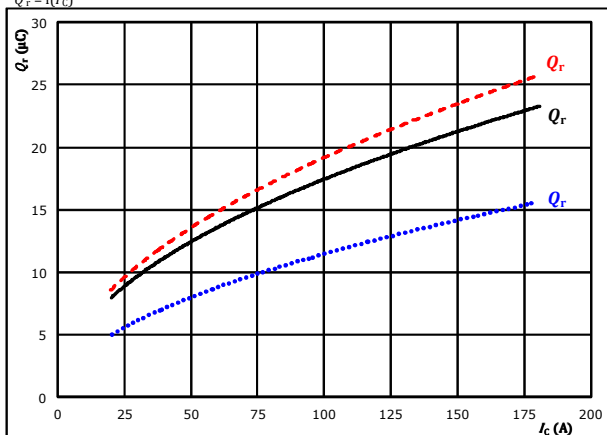
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## Inverter Switching Characteristics

**figure 9.** FWD

Typical recovered charge as a function of collector current

$$Q_r = f(I_C)$$

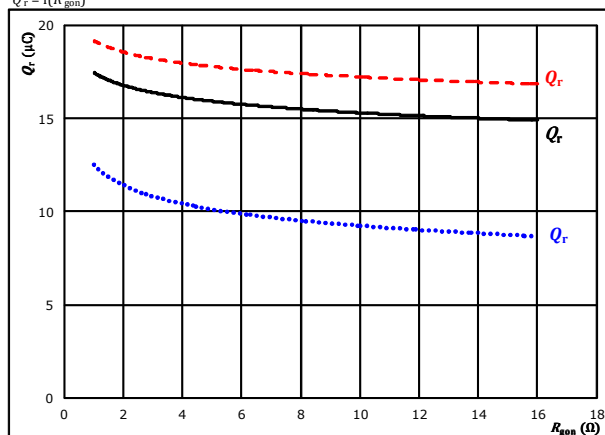


At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $R_{gon} = 2$   $\Omega$   
 $T_j$ : 25 °C .....  
 125 °C ———  
 150 °C - - - - -

**figure 10.** FWD

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

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

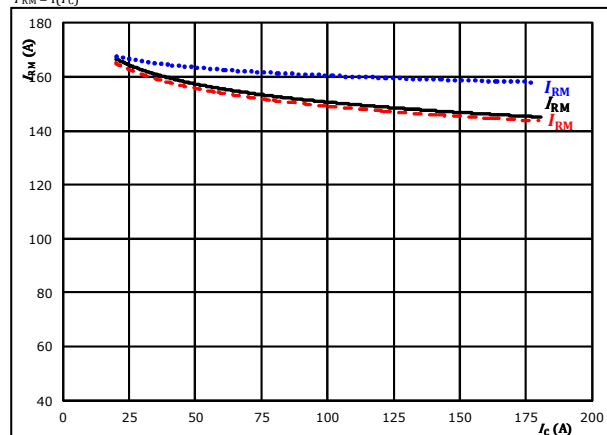


At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $I_C = 100$  A  
 $T_j$ : 25 °C .....  
 125 °C ———  
 150 °C - - - - -

**figure 11.** FWD

Typical peak reverse recovery current as a function of collector current

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

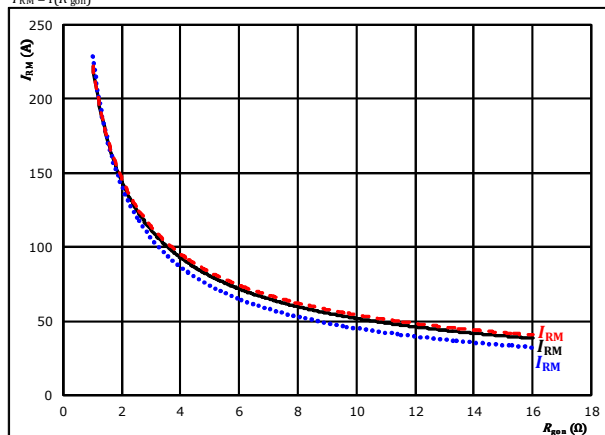


At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $R_{gon} = 2$   $\Omega$   
 $T_j$ : 25 °C .....  
 125 °C ———  
 150 °C - - - - -

**figure 12.** FWD

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

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



At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $I_C = 100$  A  
 $T_j$ : 25 °C .....  
 125 °C ———  
 150 °C - - - - -



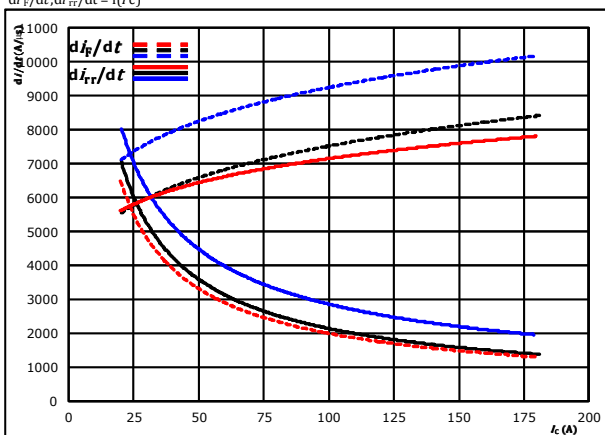
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## Inverter Switching Characteristics

**figure 13.** FWD

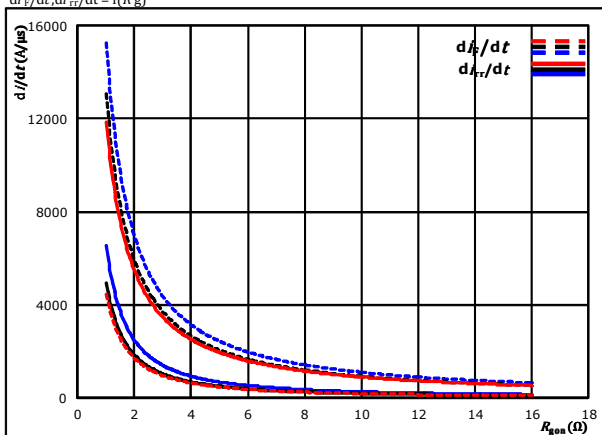
Typical rate of fall of forward and reverse recovery current as a function of collector current  
 $di_f/dt, di_{rr}/dt = f(I_c)$



At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $R_{gon} = 2$  Ω  
 $T_j = 25^\circ\text{C}$  (blue dotted)  
 $125^\circ\text{C}$  (black solid)  
 $150^\circ\text{C}$  (red dashed)

**figure 14.** FWD

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

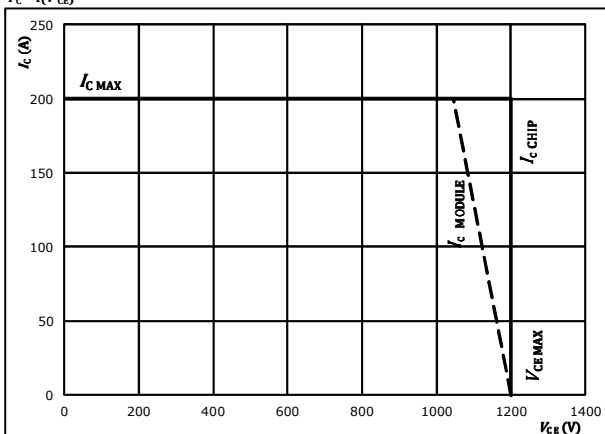


At  $V_{CE} = 600$  V  
 $V_{GE} = \pm 15$  V  
 $I_c = 100$  A  
 $T_j = 25^\circ\text{C}$  (blue dotted)  
 $125^\circ\text{C}$  (black solid)  
 $150^\circ\text{C}$  (red dashed)

**figure 15.** IGBT

Reverse bias safe operating area

$I_c = f(V_{ce})$



At  $T_j = 175^\circ\text{C}$   
 $R_{gon} = 2$  Ω  
 $R_{goff} = 2$  Ω



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## Inverter Switching Definitions

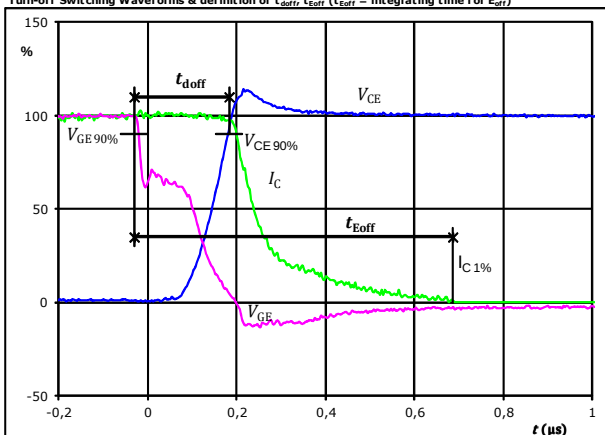
### General conditions

|            |   |            |
|------------|---|------------|
| $T_j$      | = | 125 °C     |
| $R_{gon}$  | = | 2 $\Omega$ |
| $R_{goff}$ | = | 2 $\Omega$ |

figure 1.

IGBT

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

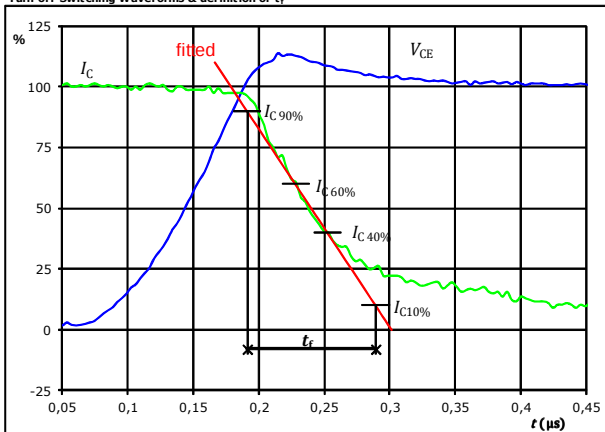


|                 |   |       |         |
|-----------------|---|-------|---------|
| $V_{GE}(0\%)$   | = | -15   | V       |
| $V_{GE}(100\%)$ | = | 15    | V       |
| $V_C(100\%)$    | = | 600   | V       |
| $I_C(100\%)$    | = | 100   | A       |
| $t_{doff}$      | = | 0,200 | $\mu$ s |
| $t_{Eoff}$      | = | 0,717 | $\mu$ s |

figure 3.

IGBT

Turn-off Switching Waveforms & definition of  $t_r$

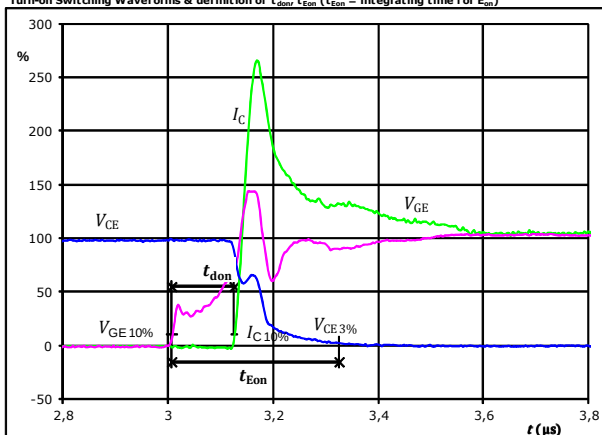


|              |   |       |         |
|--------------|---|-------|---------|
| $V_C(100\%)$ | = | 600   | V       |
| $I_C(100\%)$ | = | 100   | A       |
| $t_r$        | = | 0,096 | $\mu$ s |

figure 2.

IGBT

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

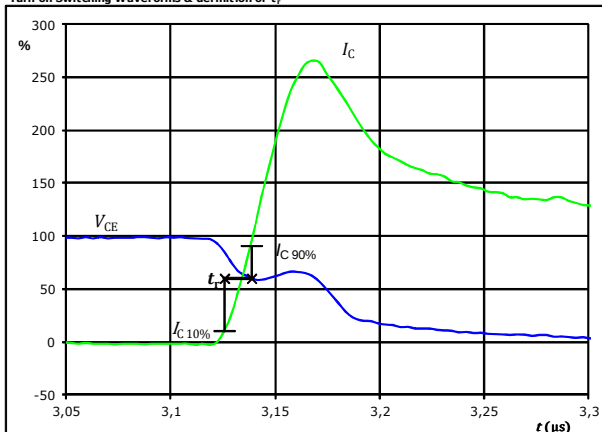


|                 |   |       |         |
|-----------------|---|-------|---------|
| $V_{GE}(0\%)$   | = | -15   | V       |
| $V_{GE}(100\%)$ | = | 15    | V       |
| $V_C(100\%)$    | = | 600   | V       |
| $I_C(100\%)$    | = | 100   | A       |
| $t_{don}$       | = | 0,118 | $\mu$ s |
| $t_{Eon}$       | = | 0,318 | $\mu$ s |

figure 4.

IGBT

Turn-on Switching Waveforms & definition of  $t_r$



|              |   |       |         |
|--------------|---|-------|---------|
| $V_C(100\%)$ | = | 600   | V       |
| $I_C(100\%)$ | = | 100   | A       |
| $t_r$        | = | 0,012 | $\mu$ s |



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## Inverter Switching Characteristics

figure 5. IGBT

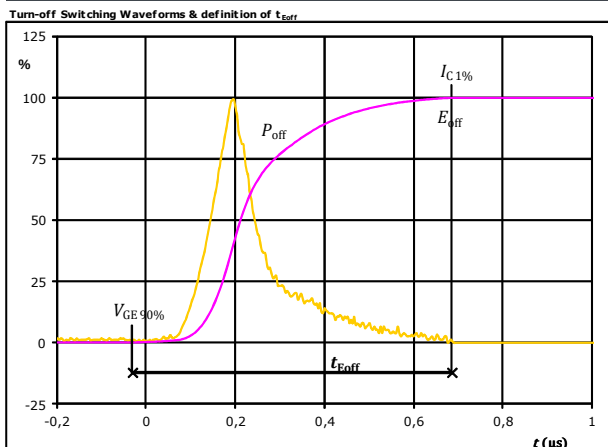


figure 6. IGBT

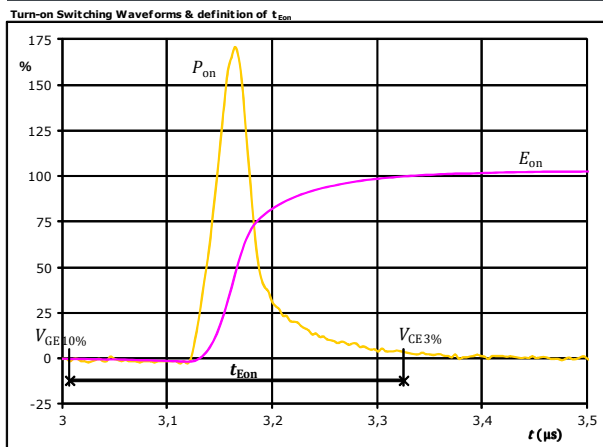
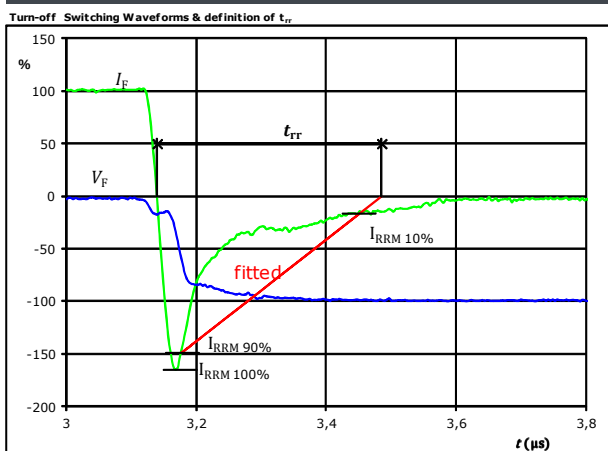


figure 7. FWD

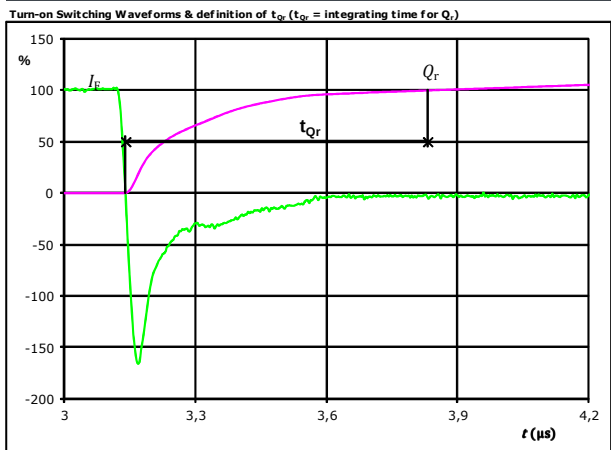




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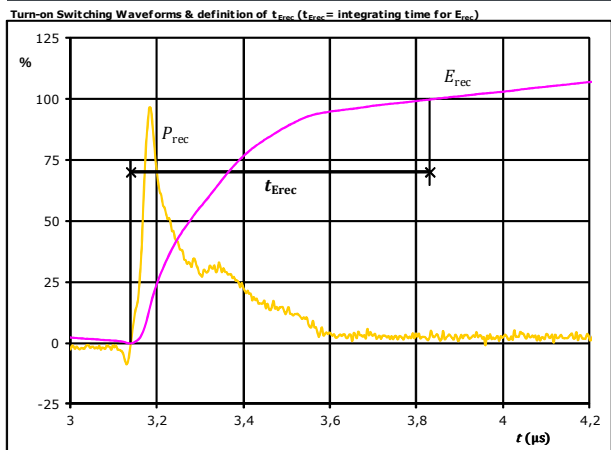
## Inverter Switching Characteristics

figure 8. FWD



160

figure 9. FWD

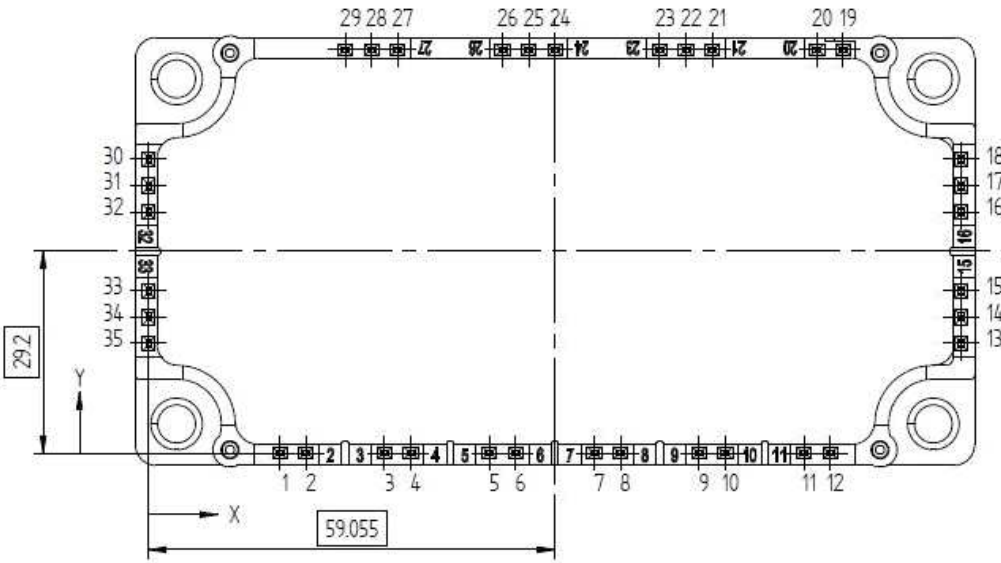




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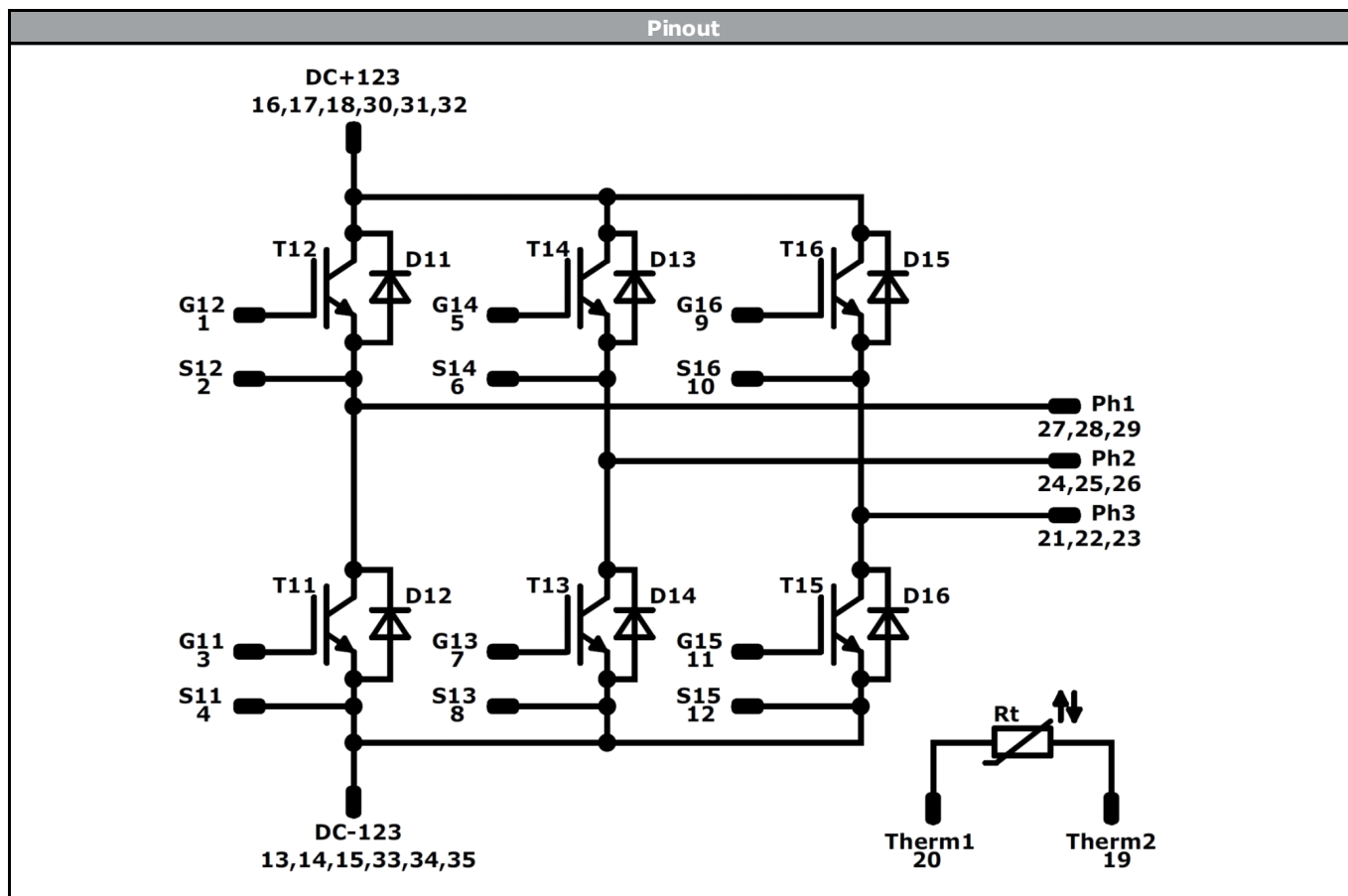
| Ordering Code & Marking                                                           |            |              |            |                              |           |      |        |
|-----------------------------------------------------------------------------------|------------|--------------|------------|------------------------------|-----------|------|--------|
| Version                                                                           |            |              |            | Ordering Code                |           |      |        |
| without thermal paste                                                             |            |              |            | A0-VS126PA100M7-L997F70      |           |      |        |
| with thermal paste                                                                |            |              |            | A0-VS126PA100M7-L997F70-/3/  |           |      |        |
| without thermal paste and press-fit pins                                          |            |              |            | A0-VP126PA150M7-L997F70T     |           |      |        |
| with thermal paste and press-fit pins                                             |            |              |            | A0-VP126PA150M7-L997F70T-/3/ |           |      |        |
|  | Text       | Name         |            | Date code                    | UL & VIN  | Lot  | Serial |
|                                                                                   |            | NNNNNNNNNN-T |            | WWYY                         | UL VIN    | LLLL | SSSS   |
|                                                                                   | Datamatrix | Type&Ver     | Lot number | Serial                       | Date code |      |        |
|                                                                                   |            | TTTTTTTV     | LLLL       | SSSS                         | WWYY      |      |        |

| Pin table [mm] |        |        |          | Outline                                                                              |  |  |  |
|----------------|--------|--------|----------|--------------------------------------------------------------------------------------|--|--|--|
| Pin            | X      | Y      | Function |  |  |  |  |
| 1              | 19,05  | 0      | G12      |                                                                                      |  |  |  |
| 2              | 22,86  | 0      | S12      |                                                                                      |  |  |  |
| 3              | 34,29  | 0      | G11      |                                                                                      |  |  |  |
| 4              | 38,1   | 0      | S11      |                                                                                      |  |  |  |
| 5              | 49,53  | 0      | G14      |                                                                                      |  |  |  |
| 6              | 53,34  | 0      | S14      |                                                                                      |  |  |  |
| 7              | 64,77  | 0      | G13      |                                                                                      |  |  |  |
| 8              | 68,58  | 0      | S13      |                                                                                      |  |  |  |
| 9              | 80,01  | 0      | G16      |                                                                                      |  |  |  |
| 10             | 83,82  | 0      | S16      |                                                                                      |  |  |  |
| 11             | 95,25  | 0      | G15      |                                                                                      |  |  |  |
| 12             | 99,06  | 0      | S15      |                                                                                      |  |  |  |
| 13             | 118,11 | 15,865 | DC-123   |                                                                                      |  |  |  |
| 14             | 118,11 | 19,675 | DC-123   |                                                                                      |  |  |  |
| 15             | 118,11 | 23,485 | DC-123   |                                                                                      |  |  |  |
| 16             | 118,11 | 34,915 | DC+123   |                                                                                      |  |  |  |
| 17             | 118,11 | 38,725 | DC+123   |                                                                                      |  |  |  |
| 18             | 118,11 | 42,535 | DC+123   |                                                                                      |  |  |  |
| 19             | 100,97 | 58,4   | Therm1   |                                                                                      |  |  |  |
| 20             | 97,155 | 58,4   | Therm2   |                                                                                      |  |  |  |
| 21             | 81,915 | 58,4   | Ph3      |                                                                                      |  |  |  |
| 22             | 78,105 | 58,4   | Ph3      |                                                                                      |  |  |  |
| 23             | 74,295 | 58,4   | Ph3      |                                                                                      |  |  |  |
| 24             | 59,055 | 58,4   | Ph2      |                                                                                      |  |  |  |
| 25             | 55,245 | 58,4   | Ph2      |                                                                                      |  |  |  |
| 26             | 51,435 | 58,4   | Ph2      |                                                                                      |  |  |  |
| 27             | 36,195 | 58,4   | Ph1      |                                                                                      |  |  |  |
| 28             | 32,385 | 58,4   | Ph1      |                                                                                      |  |  |  |
| 29             | 28,575 | 58,4   | Ph1      |                                                                                      |  |  |  |
| 30             | 0      | 42,535 | DC+123   |                                                                                      |  |  |  |
| 31             | 0      | 38,725 | DC+123   |                                                                                      |  |  |  |
| 32             | 0      | 34,915 | DC+123   |                                                                                      |  |  |  |
| 33             | 0      | 23,485 | DC-123   |                                                                                      |  |  |  |
| 34             | 0      | 19,675 | DC-123   |                                                                                      |  |  |  |
| 35             | 0      | 15,865 | DC-123   |                                                                                      |  |  |  |



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| Identification                       |            |         |         |                 |         |
|--------------------------------------|------------|---------|---------|-----------------|---------|
| ID                                   | Component  | Voltage | Current | Function        | Comment |
| T11 , T12 , T13 ,<br>T14 , T15 , T16 | IGBT       | 1200 V  | 100 A   | Inverter Switch |         |
| D11 , D12 , D13 ,<br>D14 , D15 , D16 | FWD        | 1200 V  | 100 A   | Inverter Diode  |         |
| Rt                                   | Thermistor |         |         | Thermistor      |         |



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| Packaging instruction                |      |          |             |
|--------------------------------------|------|----------|-------------|
| Standard packaging quantity (SPQ) 24 | >SPQ | Standard | <SPQ Sample |

| Handling instruction                                                   |
|------------------------------------------------------------------------|
| Handling instructions for VINco E3 packages see vincotech.com website. |

| Package data                                                  |
|---------------------------------------------------------------|
| Package data for VINco E3 packages see vincotech.com website. |

| UL recognition and file number                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| This device is certified according to UL 1557 standard, UL file number E192116. For more information see vincotech.com website.  |

| Document No.:                 | Date:        | Modification: | Pages |
|-------------------------------|--------------|---------------|-------|
| A0-VS126PA100M7-L997F70-D1-14 | 12 May. 2017 |               |       |

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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.