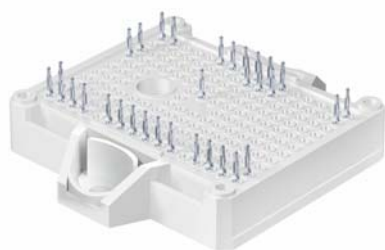


# SK150AML120CR03TE2



SEMITOP®E2

## 3-Level ANPC (Full SiC)

### SK150AML120CR03TE2

#### Features\*

- Optimized design for superior thermal performance
- Low inductance design
- Press-Fit contact technology
- Optimized for LF/HF operation
- Suited to bidirectional power flow
- 1200V Planar Gen3 SiC MOSFET
- 1200V Generation 7 IGBT (M7)
- Simple to drive with +15V gate voltage
- Optimized switching stability thanks to module integrated gate resistors
- Integrated NTC temperature sensor
- UL recognized file no. E 63 532

#### Typical Applications

- Energy Storage Systems
- Solar

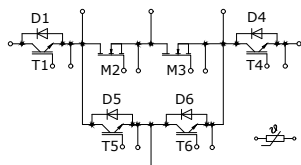
#### Remarks

- Recommended  $T_{j,op} = -40 \dots +150 \text{ }^{\circ}\text{C}$
- Recommended turn-off / turn-on gate voltage  $V_{GS} = -4 \dots 0 / +15 \text{ V}$
- MOSFET1: MOSFETs M2, M3
- IGBT1: IGBTs T1, T4, T5, T6
- Diode1: Diodes D1, D4
- Diode2: Diodes D5, D6

| Absolute Maximum Ratings |                                                                                |                         |                        |      |
|--------------------------|--------------------------------------------------------------------------------|-------------------------|------------------------|------|
| Symbol                   | Conditions                                                                     |                         | Values                 | Unit |
| IGBT 1                   |                                                                                |                         |                        |      |
| V <sub>CES</sub>         | T <sub>j</sub> = 25 °C                                                         |                         | 1200                   | V    |
| I <sub>C</sub>           | P12                                                                            | T <sub>s</sub> = 25 °C  | 111                    | A    |
|                          | T <sub>j</sub> = 175 °C                                                        | T <sub>s</sub> = 70 °C  | 89                     | A    |
| I <sub>C</sub>           | HPTP / HP-PCM                                                                  | T <sub>s</sub> = 25 °C  | 148                    | A    |
|                          |                                                                                | T <sub>j</sub> = 175 °C | T <sub>s</sub> = 70 °C | 120  |
| I <sub>Cnom</sub>        |                                                                                |                         | 100                    | A    |
| I <sub>CRM</sub>         |                                                                                |                         | 200                    | A    |
| V <sub>GES</sub>         |                                                                                |                         | -20 ... 20             | V    |
| t <sub>psc</sub>         | V <sub>CC</sub> = 800 V<br>V <sub>GE</sub> ≤ 15 V<br>V <sub>CES</sub> ≤ 1200 V | T <sub>j</sub> = 150 °C | 8                      | μs   |
| T <sub>j</sub>           |                                                                                |                         | -40 ... 175            | °C   |

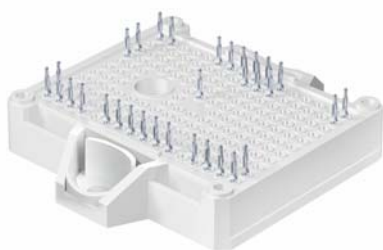
| Absolute Maximum Ratings |                                                          |                        |             |      |
|--------------------------|----------------------------------------------------------|------------------------|-------------|------|
| Symbol                   | Conditions                                               |                        | Values      | Unit |
| MOSFET 1                 |                                                          |                        |             |      |
| V <sub>DSS</sub>         | T <sub>j</sub> = 25 °C                                   |                        | 1200        | V    |
| I <sub>D</sub>           | T <sub>j</sub> = 175 °C<br>P12                           | T <sub>s</sub> = 25 °C | 134         | A    |
|                          |                                                          | T <sub>s</sub> = 70 °C | 112         | A    |
| I <sub>D</sub>           | T <sub>j</sub> = 175 °C<br>HPTP / HP-PCM                 | T <sub>s</sub> = 25 °C | 168         | A    |
|                          |                                                          | T <sub>s</sub> = 70 °C | 141         | A    |
| I <sub>DM</sub>          | t <sub>p</sub> limited by T <sub>vjmax</sub>             |                        | 480         | A    |
| V <sub>GS</sub>          | Transient Gate - Source voltage<br>(t < 100ns)           |                        | -8 ... 19   | V    |
| T <sub>j</sub>           |                                                          |                        | -40 ... 175 | °C   |
| Integrated body diode    |                                                          |                        |             |      |
| I <sub>SM</sub>          | t <sub>p</sub> limited by T <sub>vjmax</sub>             |                        | 480         | A    |
| I <sub>FSM</sub>         | t <sub>p</sub> = 10 ms, sin 180°, T <sub>j</sub> = 150°C |                        | 792         | A    |

| Absolute Maximum Ratings |                                                           |                         |             |      |
|--------------------------|-----------------------------------------------------------|-------------------------|-------------|------|
| Symbol                   | Conditions                                                |                         | Values      | Unit |
| Diode 1                  |                                                           |                         |             |      |
| V <sub>RRM</sub>         | T <sub>j</sub> = 25 °C                                    |                         | 1200        | V    |
| I <sub>F</sub>           | P12                                                       | T <sub>s</sub> = 25 °C  | 103         | A    |
|                          |                                                           | T <sub>j</sub> = 175 °C | 82          | A    |
| I <sub>F</sub>           | HPTP / HP-PCM                                             | T <sub>s</sub> = 25 °C  | 133         | A    |
|                          |                                                           | T <sub>j</sub> = 175 °C | 106         | A    |
| I <sub>FRM</sub>         |                                                           |                         | 200         | A    |
| I <sub>FSM</sub>         | t <sub>p</sub> = 10 ms, sin 180°, T <sub>j</sub> = 150 °C |                         | 415         | A    |
| T <sub>j</sub>           |                                                           |                         | -40 ... 175 | °C   |



AML1-T

# SK150AML1120CR03TE2



SEMITOP®E2

## 3-Level ANPC (Full SiC)

### SK150AML1120CR03TE2

#### Features\*

- Optimized design for superior thermal performance
- Low inductance design
- Press-Fit contact technology
- Optimized for LF/HF operation
- Suited to bidirectional power flow
- 1200V Planar Gen3 SiC MOSFET
- 1200V Generation 7 IGBT (M7)
- Simple to drive with +15V gate voltage
- Optimized switching stability thanks to module integrated gate resistors
- Integrated NTC temperature sensor
- UL recognized file no. E 63 532

#### Typical Applications

- Energy Storage Systems
- Solar

#### Remarks

- Recommended  $T_{j,op} = -40 \dots +150 \text{ }^{\circ}\text{C}$
- Recommended turn-off / turn-on gate voltage  $V_{GS} = -4 \dots 0 / +15\text{V}$
- MOSFET1: MOSFETs M2, M3
- IGBT1: IGBTs T1, T4, T5, T6
- Diode1: Diodes D1, D4
- Diode2: Diodes D5, D6

#### Absolute Maximum Ratings

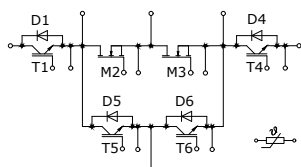
| Symbol         | Conditions                                                                        | Values                              | Unit               |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------|--------------------|
| <b>Diode 2</b> |                                                                                   |                                     |                    |
| $V_{RRM}$      | $T_j = 25 \text{ }^{\circ}\text{C}$                                               | 1200                                | V                  |
| $I_F$          | P12                                                                               | $T_s = 25 \text{ }^{\circ}\text{C}$ | A                  |
|                | $T_j = 175 \text{ }^{\circ}\text{C}$                                              | $T_s = 70 \text{ }^{\circ}\text{C}$ | A                  |
| $I_F$          | HPTP / HP-PCM                                                                     | $T_s = 25 \text{ }^{\circ}\text{C}$ | A                  |
|                | $T_j = 175 \text{ }^{\circ}\text{C}$                                              | $T_s = 70 \text{ }^{\circ}\text{C}$ | A                  |
| $I_{FRM}$      |                                                                                   | 150                                 | A                  |
| $I_{FSM}$      | $t_p = 10 \text{ ms}$ , $\sin 180^{\circ}$ , $T_j = 150 \text{ }^{\circ}\text{C}$ | 430                                 | A                  |
| $T_j$          |                                                                                   | -40 ... 175                         | $^{\circ}\text{C}$ |

#### Absolute Maximum Ratings

| Symbol        | Conditions                                         | Values      | Unit               |
|---------------|----------------------------------------------------|-------------|--------------------|
| <b>Module</b> |                                                    |             |                    |
| $I_{t(RMS)}$  | $\Delta T_{terminal}$ at PCB joint = 30 K, per pin | 30          | A                  |
| $T_{stg}$     | module without TIM                                 | -40 ... 125 | $^{\circ}\text{C}$ |
| $V_{isol}$    | AC, sinusoidal, $t = 1 \text{ min}$                | 2500        | V                  |

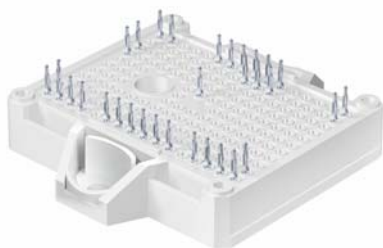
#### Characteristics

| Symbol        | Conditions                                                                               | min.                                 | typ. | max. | Unit       |
|---------------|------------------------------------------------------------------------------------------|--------------------------------------|------|------|------------|
| <b>IGBT 1</b> |                                                                                          |                                      |      |      |            |
| $V_{CE(sat)}$ | $I_C = 100 \text{ A}$<br>$V_{GE} = 15 \text{ V}$<br>chipelevel                           | $T_j = 25 \text{ }^{\circ}\text{C}$  | 1.55 | 1.85 | V          |
|               |                                                                                          | $T_j = 150 \text{ }^{\circ}\text{C}$ | 1.79 | 2.09 | V          |
| $V_{CE0}$     | chipelevel                                                                               | $T_j = 25 \text{ }^{\circ}\text{C}$  | 0.85 | 1.00 | V          |
|               |                                                                                          | $T_j = 150 \text{ }^{\circ}\text{C}$ | 0.75 | 0.90 | V          |
| $r_{CE}$      | $V_{GE} = 15 \text{ V}$<br>chipelevel                                                    | $T_j = 25 \text{ }^{\circ}\text{C}$  | 7.0  | 8.5  | m $\Omega$ |
|               |                                                                                          | $T_j = 150 \text{ }^{\circ}\text{C}$ | 10   | 12   | m $\Omega$ |
| $V_{GE(th)}$  | $V_{CE} = 10 \text{ V}$ , $I_C = 10 \text{ mA}$                                          | 5.4                                  | 6    | 6.6  | V          |
| $I_{CES}$     | $V_{GE} = 0 \text{ V}$ , $V_{CE} = 1200 \text{ V}$ , $T_j = 25 \text{ }^{\circ}\text{C}$ |                                      |      | 1    | mA         |
| $C_{ies}$     | $V_{CE} = 10 \text{ V}$<br>$V_{GE} = 0 \text{ V}$                                        | $f = 1 \text{ MHz}$                  | 21   |      | nF         |
| $C_{oes}$     |                                                                                          | $f = 1 \text{ MHz}$                  | 0.60 |      | nF         |
| $C_{res}$     |                                                                                          | $f = 1 \text{ MHz}$                  | 0.28 |      | nF         |
| $Q_G$         | $V_{GE} = -8\text{V} \dots +15\text{V}$                                                  |                                      | 929  |      | nC         |
| $R_{Gint}$    | $T_j = 25 \text{ }^{\circ}\text{C}$                                                      |                                      | 0    |      | $\Omega$   |
| $t_{d(on)}$   |                                                                                          |                                      | -    |      | ns         |
| $t_r$         |                                                                                          |                                      | -    |      | ns         |
| $E_{on}$      |                                                                                          |                                      | -    |      | mJ         |
| $t_{d(off)}$  |                                                                                          |                                      | -    |      | ns         |
| $t_f$         |                                                                                          |                                      | -    |      | ns         |
| $E_{off}$     |                                                                                          |                                      | -    |      | mJ         |
| $R_{th(j-s)}$ | per IGBT, P12 (Reference)                                                                |                                      | 0.58 |      | K/W        |
| $R_{th(j-s)}$ | per IGBT, HPTP / HP-PCM                                                                  |                                      | 0.36 |      | K/W        |



AML1-T

# SK150AML1120CR03TE2



SEMITOP®E2

## 3-Level ANPC (Full SiC)

### SK150AML1120CR03TE2

#### Features\*

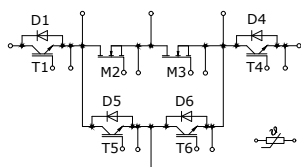
- Optimized design for superior thermal performance
- Low inductance design
- Press-Fit contact technology
- Optimized for LF/HF operation
- Suited to bidirectional power flow
- 1200V Planar Gen3 SiC MOSFET
- 1200V Generation 7 IGBT (M7)
- Simple to drive with +15V gate voltage
- Optimized switching stability thanks to module integrated gate resistors
- Integrated NTC temperature sensor
- UL recognized file no. E 63 532

#### Typical Applications

- Energy Storage Systems
- Solar

#### Remarks

- Recommended  $T_{j,op} = -40 \dots +150 \text{ }^{\circ}\text{C}$
- Recommended turn-off / turn-on gate voltage  $V_{GS} = -4 \dots 0 / +15 \text{ V}$
- MOSFET1: MOSFETs M2, M3
- IGBT1: IGBTs T1, T4, T5, T6
- Diode1: Diodes D1, D4
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AML1-T

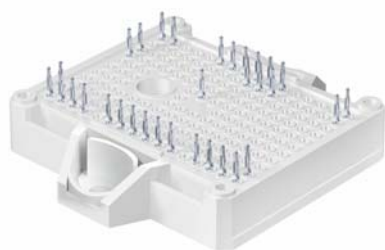
#### Characteristics

| Symbol                       | Conditions                                                                              | min. | typ.                                                                         | max.         | Unit |
|------------------------------|-----------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------|--------------|------|
| <b>MOSFET 1</b>              |                                                                                         |      |                                                                              |              |      |
| $V_{GS(th)}$                 | $V_{DS} = V_{GS}, I_D = 46 \text{ mA}, T_j = 25 \text{ }^{\circ}\text{C}$               | 1.8  | 2.5                                                                          | 3.6          | V    |
| $I_{DSS}$                    | $V_{GS} = 0 \text{ V}, V_{DS} = 1200 \text{ V}, T_j = 25 \text{ }^{\circ}\text{C}$      |      |                                                                              | 0.4          | mA   |
| $I_{GSS}$                    | $V_{DS} = 0 \text{ V}, V_{GS} = 15 \text{ V}, T_j = 25 \text{ }^{\circ}\text{C}$        |      |                                                                              | 400          | nA   |
| $R_{DS(on)}$                 | $V_{GS} = 15 \text{ V}$<br>$I_D = 166 \text{ A}$<br>chipelevel                          |      | $T_j = 25 \text{ }^{\circ}\text{C}$<br>$T_j = 150 \text{ }^{\circ}\text{C}$  | 8.0<br>11    | mΩ   |
| $C_{iss}$                    | $V_{GS} = 0 \text{ V}, V_{DS} = 1000 \text{ V}, f = 0.1 \text{ MHz}$                    |      | 13600                                                                        |              | pF   |
| $C_{oss}$                    | $V_{GS} = 0 \text{ V}, V_{DS} = 1000 \text{ V}, f = 0.1 \text{ MHz}$                    |      | 520                                                                          |              | pF   |
| $C_{rss}$                    | $V_{GS} = 0 \text{ V}, V_{DS} = 1000 \text{ V}, f = 0.1 \text{ MHz}$                    |      | 40                                                                           |              | pF   |
| $R_{Gint}$                   | $T_j = 25 \text{ }^{\circ}\text{C}$                                                     |      | 3.4                                                                          |              | Ω    |
| $Q_G$                        | $V_{DD} = 800 \text{ V}, V_{GS} = -4 \text{ V} \dots 15 \text{ V}, I_D = 166 \text{ A}$ |      | 472                                                                          |              | nC   |
| $t_{d(on)}$                  | $V_{DD} = 600 \text{ V}$<br>$V_{GS} = -4/15 \text{ V}$<br>$I_D = 160 \text{ A}$         |      | $T_j = 150 \text{ }^{\circ}\text{C}$<br>$T_j = 150 \text{ }^{\circ}\text{C}$ | 48<br>120    | ns   |
| $t_{d(off)}$                 | $R_{G on/off} = 0.8 \text{ }^{\circ}\Omega$                                             |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 16           | ns   |
| $t_r$                        | $di/dt_{off} = 8.2 \text{ kA}/\mu\text{s}$                                              |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 29           | ns   |
| $t_f$                        | $di/dt_{on} = 11.6 \text{ kA}/\mu\text{s}$                                              |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 2.1          | mJ   |
| $E_{on}$                     | $\mu\text{s}$                                                                           |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 1.8          | mJ   |
| $E_{off}$                    | $dv/dt = 34.9 \text{ kV}/\mu\text{s}$<br>$L_s = 5 \text{ nH}$                           |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         |              |      |
| $R_{th(j-s)}$                | per MOSFET, P12 (Reference)                                                             |      | 0.54                                                                         |              | K/W  |
| $R_{th(j-s)}$                | per MOSFET, HPTP / HP-PCM                                                               |      | 0.34                                                                         |              | K/W  |
| <b>Integrated body diode</b> |                                                                                         |      |                                                                              |              |      |
| $V_F = V_{SD}$               | $-I_D = 83 \text{ A}$<br>$V_{GS} = -4 \text{ V}$<br>chipelevel                          |      | $T_j = 25 \text{ }^{\circ}\text{C}$<br>$T_j = 150 \text{ }^{\circ}\text{C}$  | 4.61<br>4.31 | V    |
| $V_{F0} = V_{SD0}$           | chipelevel                                                                              |      | $T_j = 25 \text{ }^{\circ}\text{C}$<br>$T_j = 150 \text{ }^{\circ}\text{C}$  | 3.80<br>3.60 | V    |
| $r_F = r_{SD}$               | chipelevel                                                                              |      | $T_j = 25 \text{ }^{\circ}\text{C}$<br>$T_j = 150 \text{ }^{\circ}\text{C}$  | 9.7<br>8.5   | mΩ   |
| $t_{rr}$                     | $V_{DD} = 600 \text{ V}$<br>$-I_D = 160 \text{ A}$                                      |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 40           | ns   |
| $Q_{rr}$                     | $di/dt_{off} = 12 \text{ kA}/\mu\text{s}$                                               |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 4            | μC   |
| $I_{rr}$                     | $V_{GS} = -4 \text{ V}$                                                                 |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 214          | A    |
| $E_{rr}$                     |                                                                                         |      | $T_j = 150 \text{ }^{\circ}\text{C}$                                         | 1.4          | mJ   |

#### Characteristics

| Symbol               | Conditions                 |                         | min. | typ. | max. | Unit |
|----------------------|----------------------------|-------------------------|------|------|------|------|
| Diode 1              |                            |                         |      |      |      |      |
| V <sub>F</sub>       | I <sub>F</sub> = 100 A     | T <sub>j</sub> = 25 °C  |      | 1.75 | 1.95 | V    |
|                      | chipelevel                 | T <sub>j</sub> = 150 °C |      | 1.56 | 1.76 | V    |
| V <sub>F0</sub>      | chipelevel                 | T <sub>j</sub> = 25 °C  |      | 1.10 | 1.20 | V    |
|                      |                            | T <sub>j</sub> = 150 °C |      | 0.76 | 0.86 | V    |
| r <sub>F</sub>       | chipelevel                 | T <sub>j</sub> = 25 °C  |      | 6.5  | 7.5  | mΩ   |
|                      |                            | T <sub>j</sub> = 150 °C |      | 8.0  | 9.0  | mΩ   |
| I <sub>RRM</sub>     |                            |                         |      | -    |      | A    |
| Q <sub>rr</sub>      |                            |                         |      | -    |      | μC   |
| E <sub>rr</sub>      |                            |                         |      | -    |      | mJ   |
|                      |                            |                         |      |      |      |      |
| R <sub>th(j-s)</sub> | per Diode, P12 (Reference) |                         |      | 0.83 |      | K/W  |
| R <sub>th(j-s)</sub> | per Diode, HPTP / HP-PCM   |                         |      | 0.56 |      | K/W  |

# SK150AML120CR03TE2



SEMITOP®E2

## 3-Level ANPC (Full SiC)

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#### Features\*

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- Integrated NTC temperature sensor
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- Energy Storage Systems
- Solar

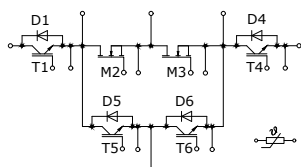
#### Remarks

- Recommended  $T_{j,op} = -40 \dots +150 \text{ }^{\circ}\text{C}$
- Recommended turn-off / turn-on gate voltage  $V_{GS} = -4 \dots 0/+15\text{V}$
- MOSFET1: MOSFETs M2, M3
- IGBT1: IGBTs T1, T4, T5, T6
- Diode1: Diodes D1, D4
- Diode2: Diodes D5, D6

| Characteristics      |                            |                         |      |      |      |      |
|----------------------|----------------------------|-------------------------|------|------|------|------|
| Symbol               | Conditions                 |                         | min. | typ. | max. | Unit |
| Diode 2              |                            |                         |      |      |      |      |
| V <sub>F</sub>       | I <sub>F</sub> = 75 A      | T <sub>j</sub> = 25 °C  |      | 2.17 | 2.49 | V    |
|                      | chiplevel                  | T <sub>j</sub> = 150 °C |      | 2.11 | 2.42 | V    |
| V <sub>F0</sub>      | chiplevel                  | T <sub>j</sub> = 25 °C  |      | 1.30 | 1.50 | V    |
|                      |                            | T <sub>j</sub> = 150 °C |      | 0.90 | 1.10 | V    |
| r <sub>F</sub>       | chiplevel                  | T <sub>j</sub> = 25 °C  |      | 12   | 13   | mΩ   |
|                      |                            | T <sub>j</sub> = 150 °C |      | 16   | 18   | mΩ   |
| I <sub>RRM</sub>     |                            |                         |      | -    |      | A    |
| Q <sub>rr</sub>      |                            |                         |      | -    |      | μC   |
| E <sub>rr</sub>      |                            |                         |      | -    |      | mJ   |
| R <sub>th(j-s)</sub> | per Diode, P12 (reference) |                         |      | 0.82 |      | K/W  |
| R <sub>th(j-s)</sub> | per Diode, HPTP / HP-PCM   |                         |      | 0.55 |      | K/W  |

| Characteristics |             |      |      |      |      |
|-----------------|-------------|------|------|------|------|
| Symbol          | Conditions  | min. | typ. | max. | Unit |
| Module          |             |      |      |      |      |
| L <sub>CE</sub> |             |      | 15   |      | nH   |
| M <sub>s</sub>  | to heatsink | 1.6  |      | 2.3  | Nm   |
| w               | weight      |      | 35   |      | g    |

| Characteristics    |                                                                  |      |          |      |      |
|--------------------|------------------------------------------------------------------|------|----------|------|------|
| Symbol             | Conditions                                                       | min. | typ.     | max. | Unit |
| Temperature Sensor |                                                                  |      |          |      |      |
| R <sub>100</sub>   | T <sub>C</sub> =100°C (R <sub>25</sub> =5 kΩ)                    |      | 493 ± 5% |      | Ω    |
| B <sub>25/85</sub> | R(T)=R <sub>25</sub> *exp[B <sub>25/85</sub> *(1/T-1/298)], T[K] |      | 3420     |      | K    |



AML1-T

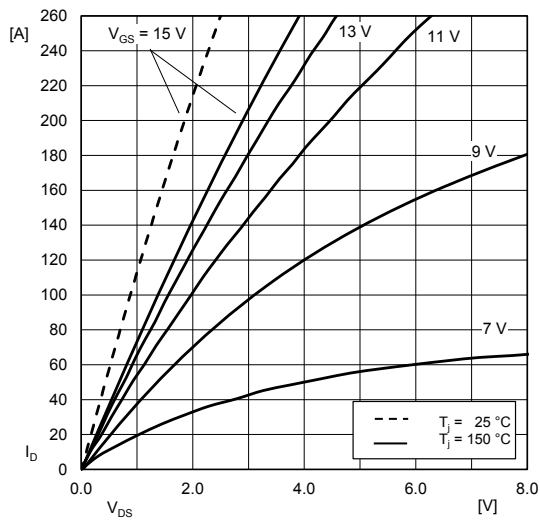


Fig. 1: Typ. MOSFET forward output characteristic, incl.  $R_{DS(on)} + SS$

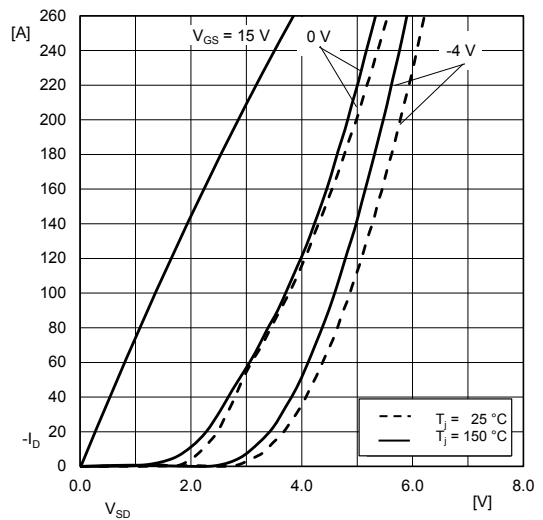


Fig. 1a: Typ. MOSFET reverse output characteristics, incl.  $R_{DS(on)} + SS$

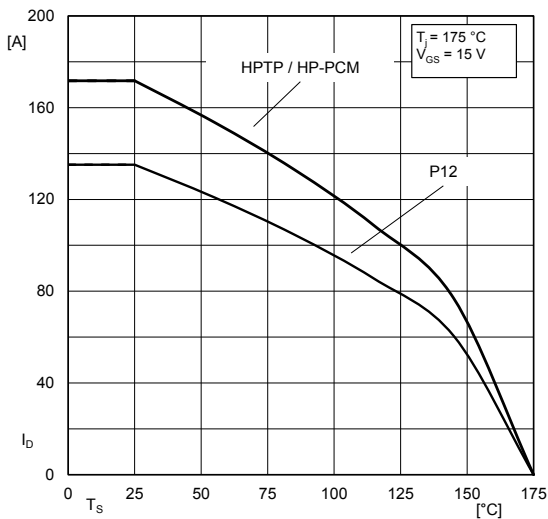


Fig. 2: MOSFET Rated current vs. Temperature  $I_D = f(T_S)$

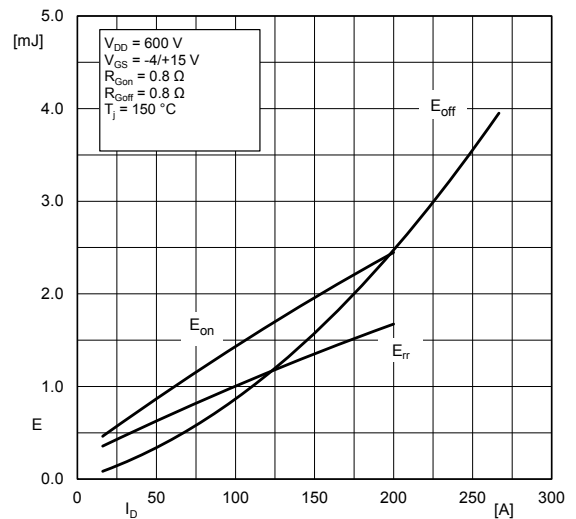


Fig. 3: Typ. MOSFET switching energy  $E = f(I_D)$  at  $R_{G1}$

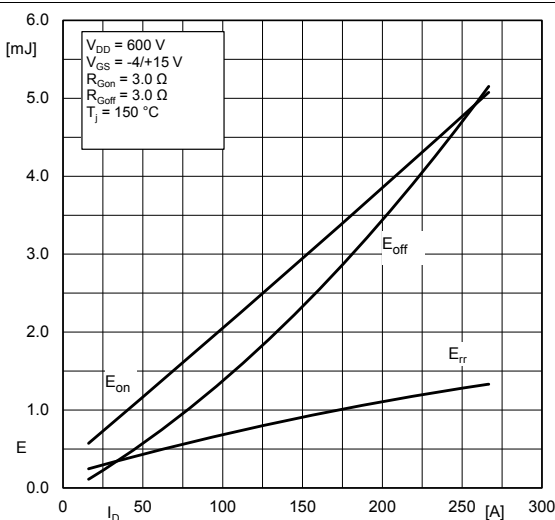


Fig. 3a: Typ. MOSFET switching energy  $E = f(I_D)$  at  $R_{G2}$

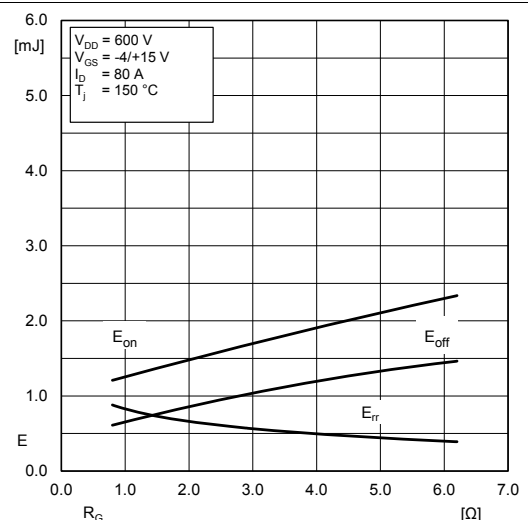


Fig. 4: Typ. MOSFET switching energy  $E = f(R_G)$  at  $I_{D1}$

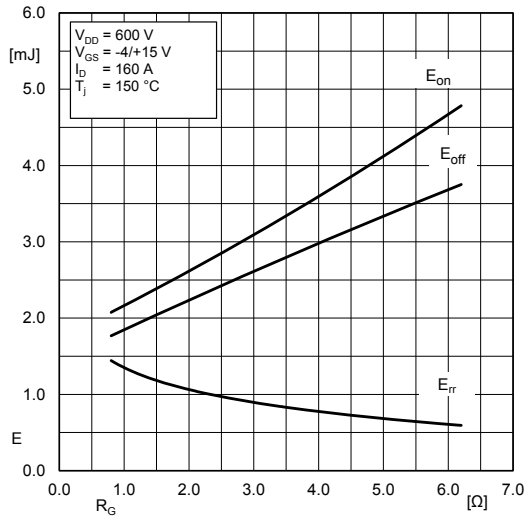


Fig. 4a: Typ. MOSFET switching energy  $E = f(R_G)$  at  $I_{D2}$

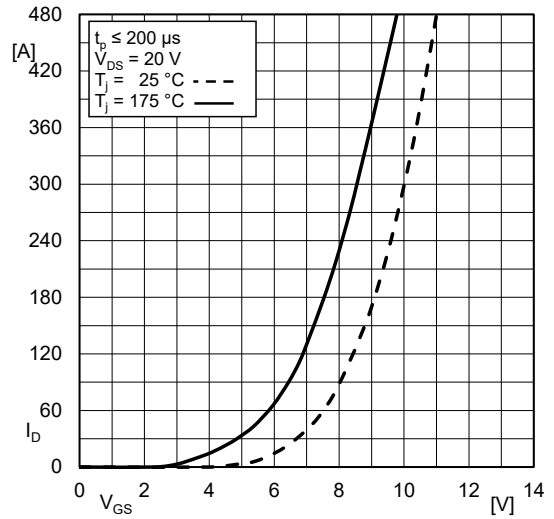


Fig. 5: Typ. MOSFET transfer characteristic

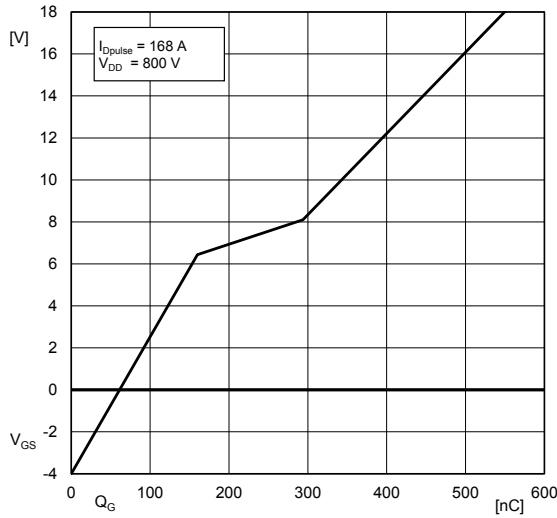


Fig. 6: Typ. MOSFET gate charge characteristic

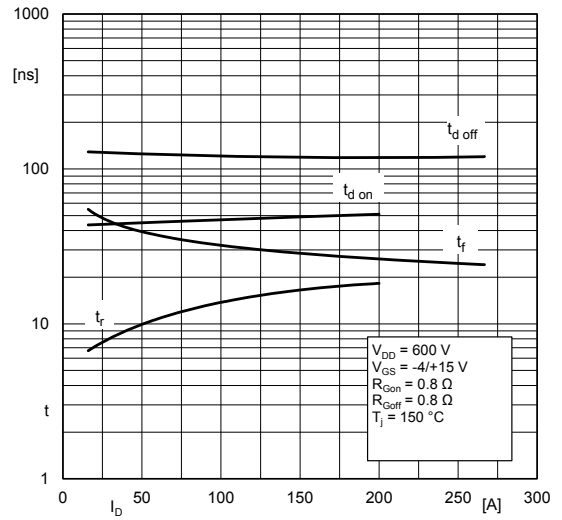


Fig. 7: Typ. MOSFET switching times  $t = f(I_D)$  at  $R_{g1}$

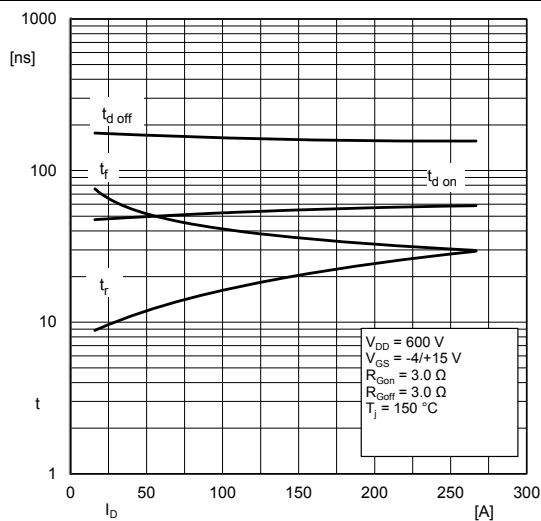


Fig. 7a: Typ. MOSFET switching times  $t = f(I_D)$  at  $R_{G2}$

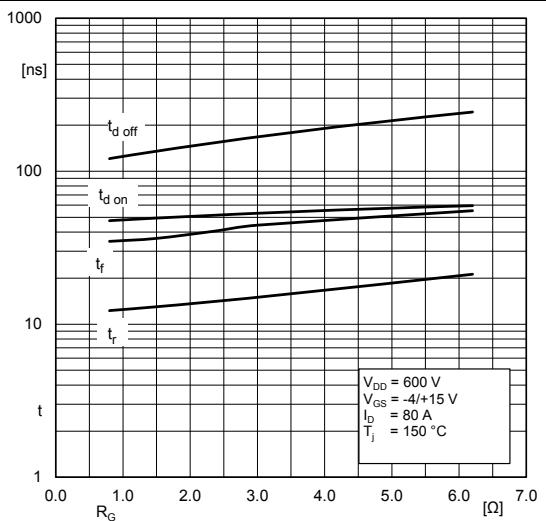
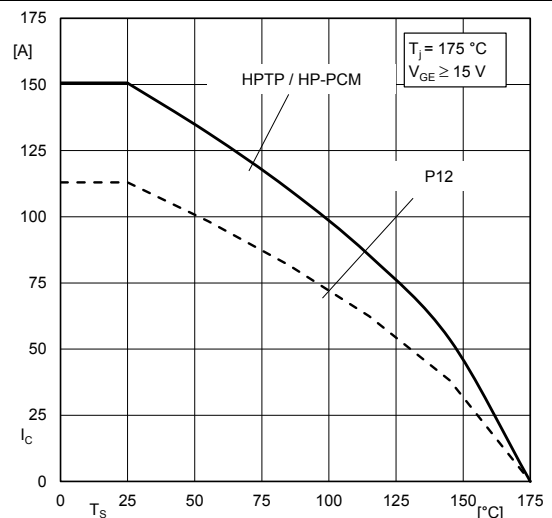
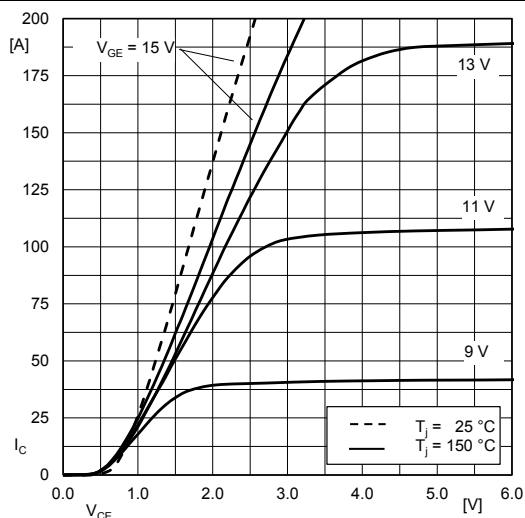
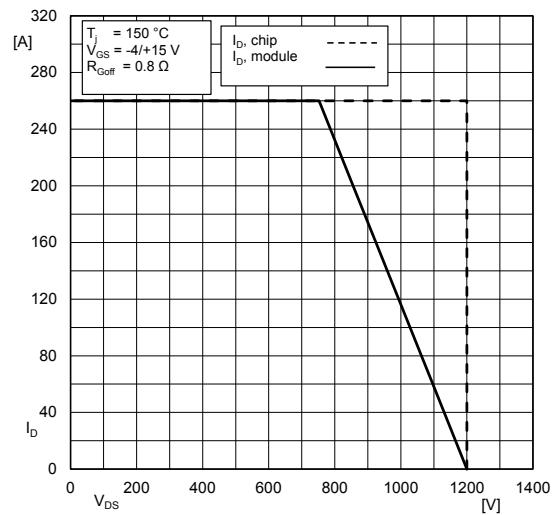
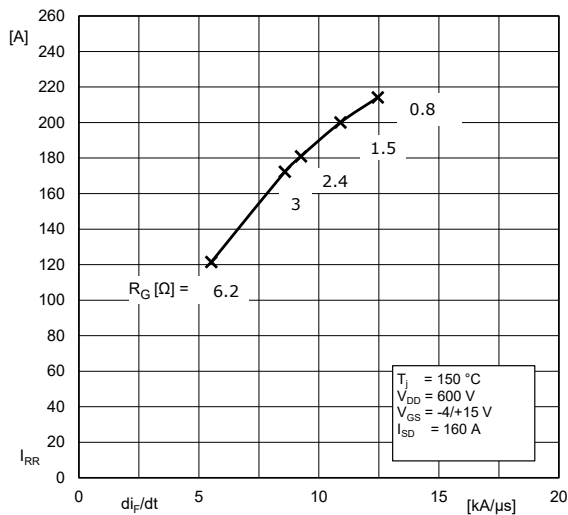
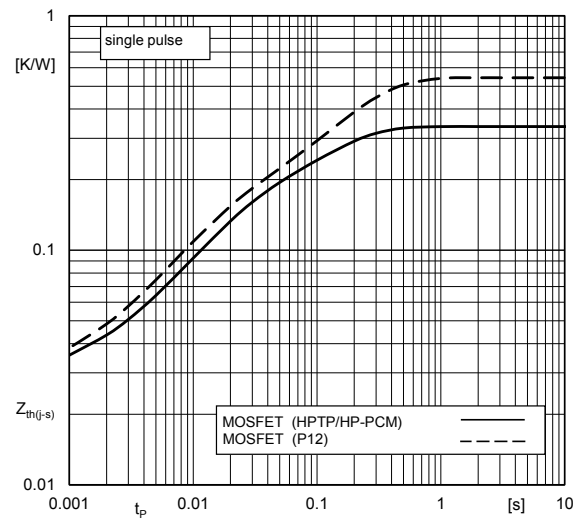
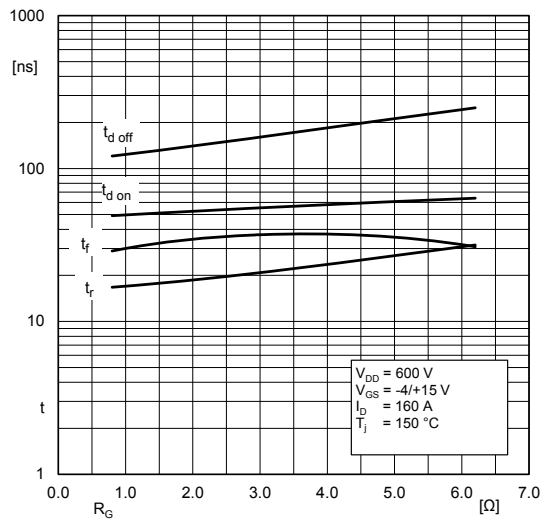


Fig. 8: Typ. MOSFET switching times  $t = f(R_G)$  at  $I_{D1}$



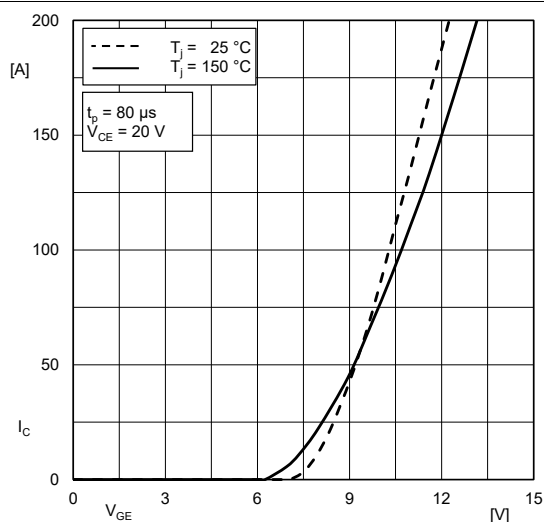


Fig. 16: Typ. IGBT1 transfer characteristic

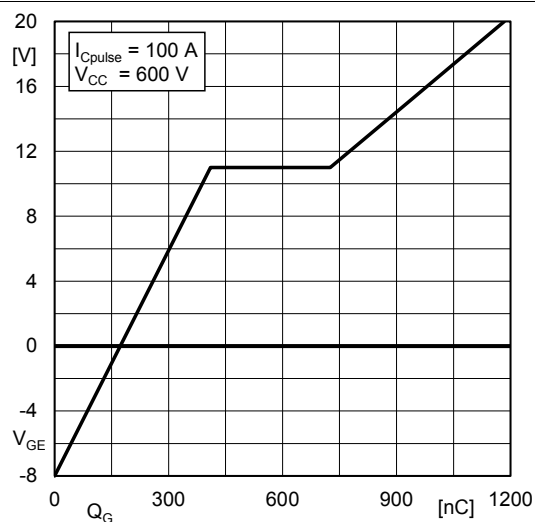


Fig. 17: Typ. IGBT1 gate charge characteristic

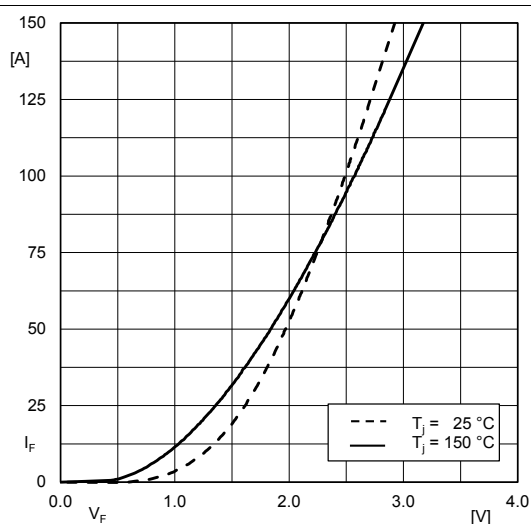


Fig. 18: Typ. Diode2 forward charact., incl.  $R_{CC'+EE'}$

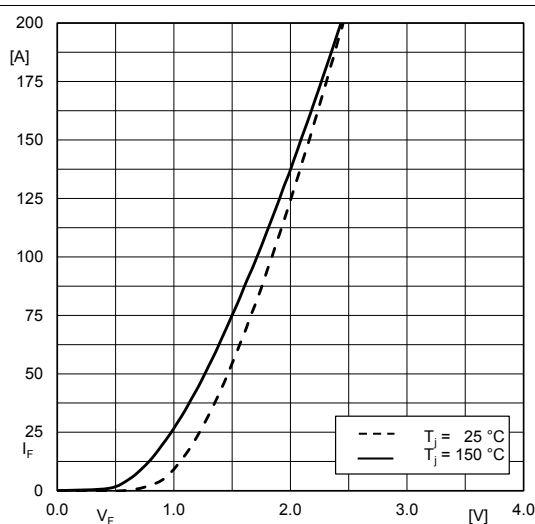
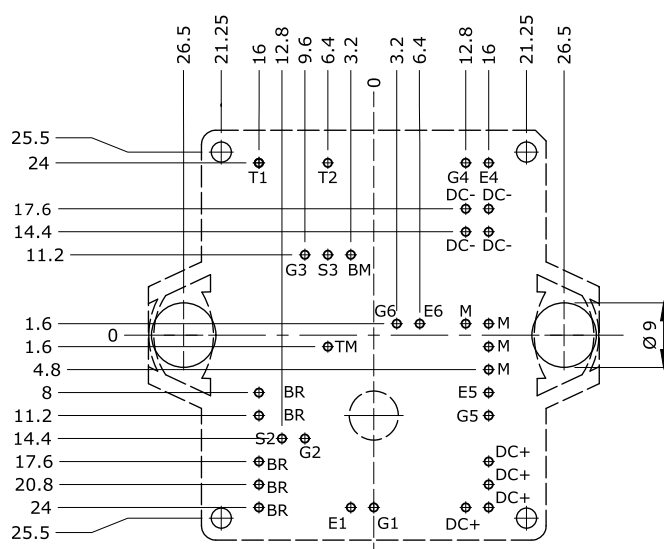
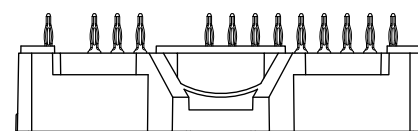
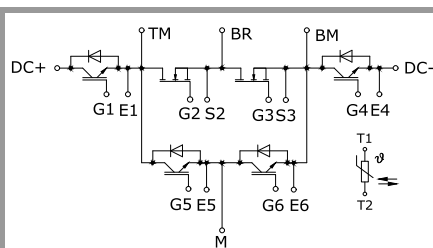


Fig. 19: Typ. Diode1 forward charact., incl.  $R_{CC'+EE'}$



- Pin-Grid 3.2 mm
- Tolerance of PCB hole pattern  $\Phi \pm 0.1$
- Diameters of drill  $\varnothing$  1.15mm
- Copper thickness in hole 25 - 50  $\mu$ m
- Hole specification for contacts:  
refer to SEMITOP E1/E2 Mounting Instruction

**AMLI-T**

## IMPORTANT INFORMATION AND WARNINGS

This is an electrostatic discharge sensitive device (ESDS) according to international standard IEC 61340.

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