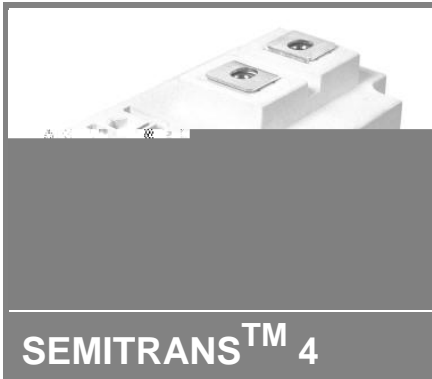


SKM 600GA125D



SEMITRANS™ 4

Ultra Fast IGBT Modules

SKM 600GA125D

Preliminary Data

Features

- $V_{CE(sat)}$ 1.7V @ $I_C = 125A$, $V_{CE} = 1.2V$, $f_{sw} = 10kHz$
- t_{fall} 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- t_{rise} 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- $t_{turn-off}$ 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- $t_{turn-on}$ 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$

Typical Applications

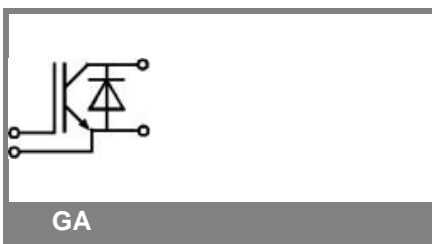
- Inverter for AC motor drives
- Inverter for UPS
- Inverter for power supplies

Remarks

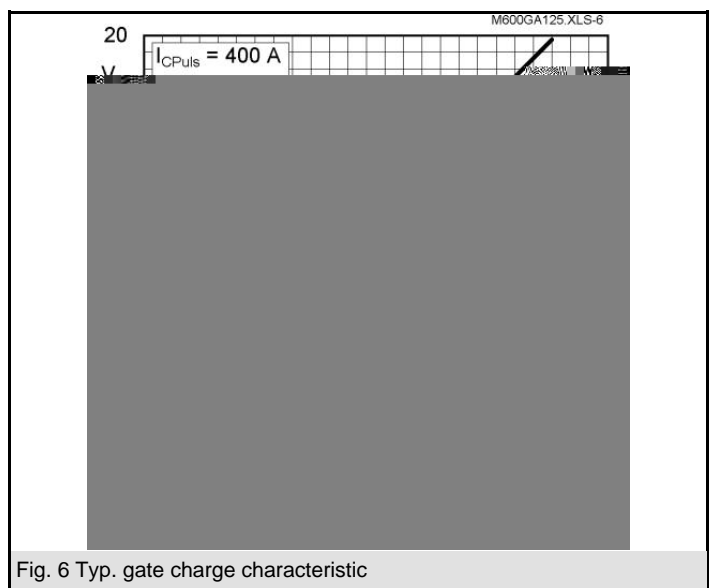
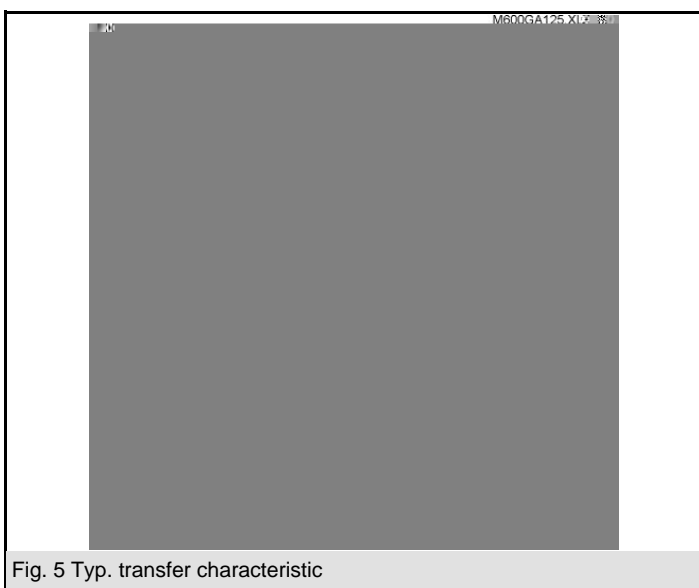
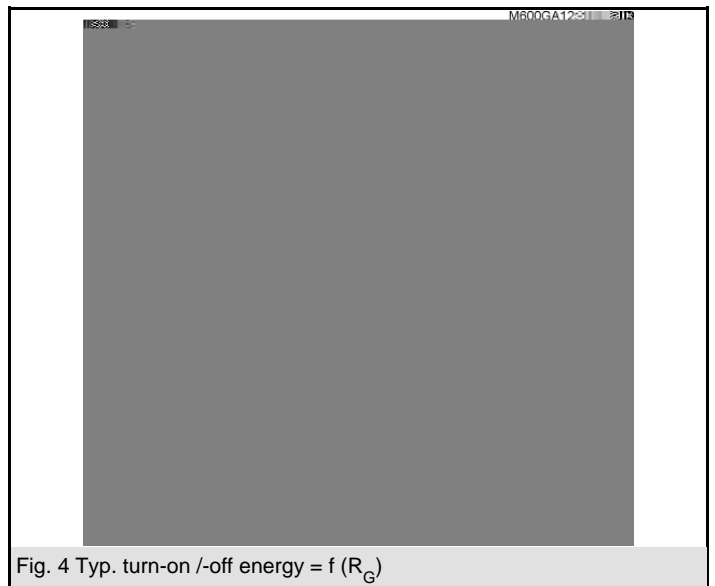
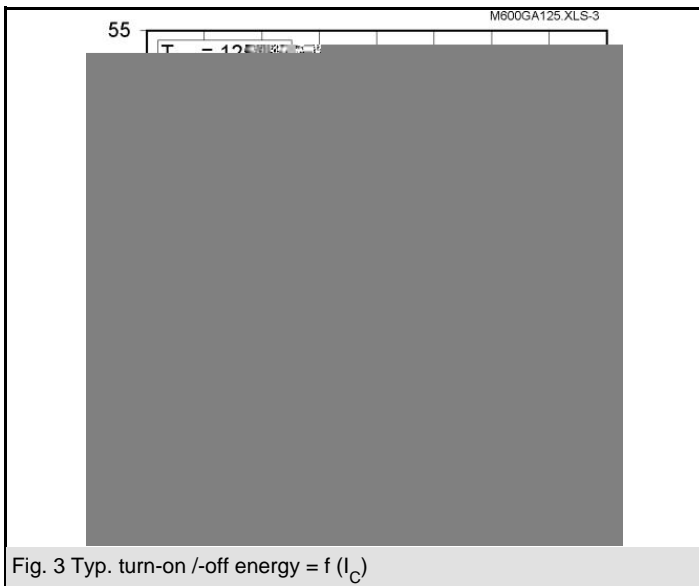
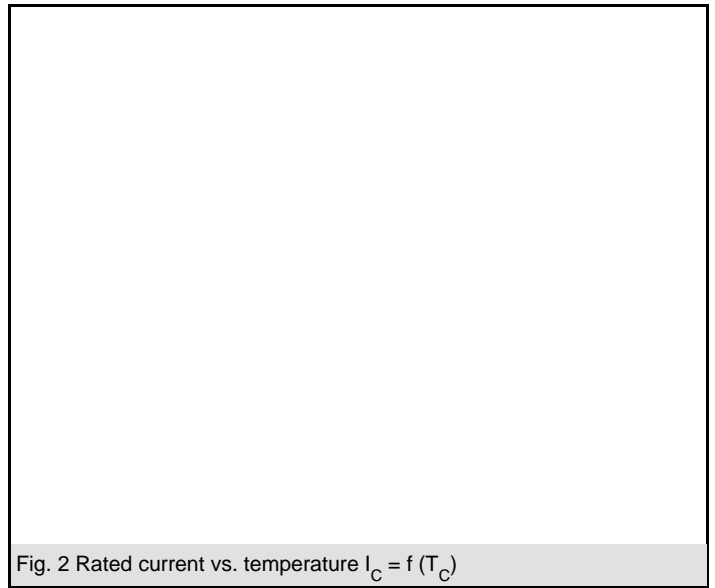
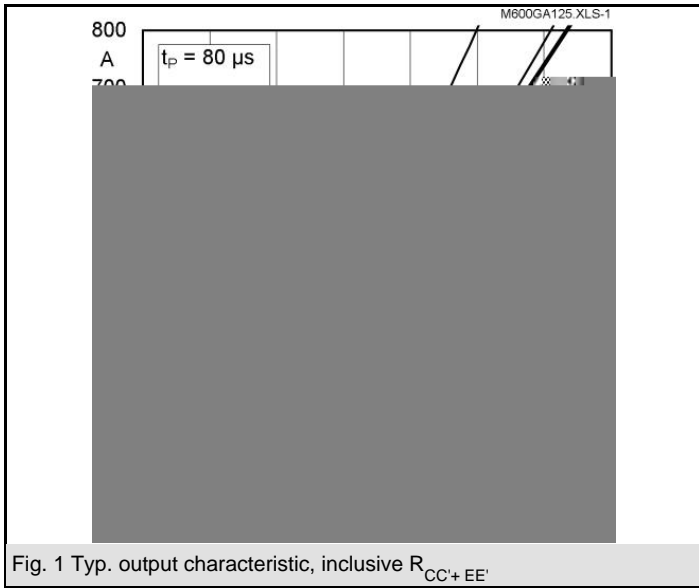
- $V_{CE(sat)}$ 1.7V @ $I_C = 125A$, $V_{CE} = 1.2V$, $f_{sw} = 10kHz$
- t_{fall} 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- t_{rise} 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- $t_{turn-off}$ 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$
- $t_{turn-on}$ 1.5ns @ $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$

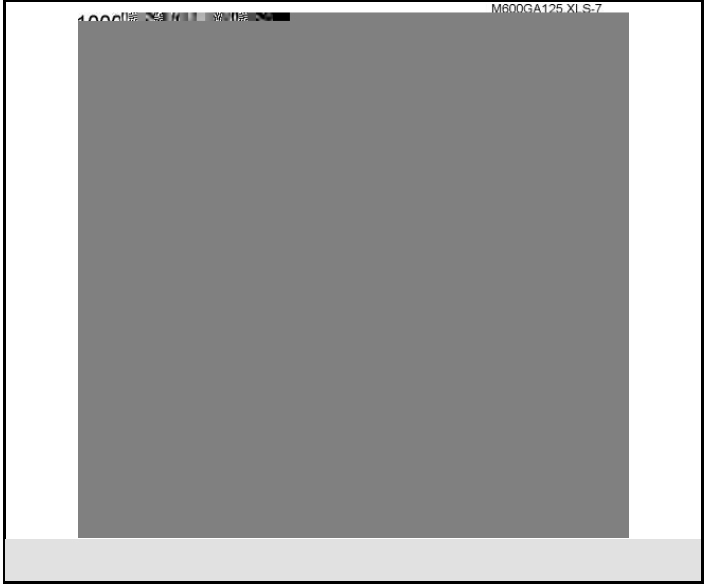
| Absolute Maximum Ratings | | | |
|--------------------------|------------------------|--------|-------|
| Symbol | Conditions | Values | Units |
| IGBT | | | |
| V_{CE} | $V_{CE} < V_{GE} < 0V$ | 1200 | V |
| V_{GE} | $V_{CE} < V_{GE} < 0V$ | 15 | V |
| I_C | $V_{CE} < V_{GE} < 0V$ | 125 | A |
| I_{EMV} | $V_{CE} < V_{GE} < 0V$ | 125 | A |
| I_{SM} | $V_{CE} < V_{GE} < 0V$ | 125 | A |
| Inverse diode | | | |
| V_{CE} | $V_{CE} < V_{GE} < 0V$ | 1200 | V |
| V_{GE} | $V_{CE} < V_{GE} < 0V$ | 15 | V |
| I_{SM} | $V_{CE} < V_{GE} < 0V$ | 125 | A |

| Characteristics | | | | | |
|--------------------------------|--|------|------|------|---------------|
| Symbol | Conditions | min. | typ. | max. | Units |
| IGBT | | | | | |
| $V_{CE(sat)}$ | $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$ | 1.7 | 1.7 | 1.7 | V |
| t_{fall} | $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$ | 1.5 | 1.5 | 1.5 | ns |
| t_{rise} | $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$ | 1.5 | 1.5 | 1.5 | ns |
| $t_{turn-off}$ | $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$ | 1.5 | 1.5 | 1.5 | ns |
| $t_{turn-on}$ | $V_{CE} = 1.2V$, $I_C = 125A$, $V_{GE} = 15V$, $f_{sw} = 10kHz$ | 1.5 | 1.5 | 1.5 | ns |
| Inverse diode | | | | | |
| V_{CE} | $V_{CE} < V_{GE} < 0V$ | 1200 | 1200 | 1200 | V |
| V_{GE} | $V_{CE} < V_{GE} < 0V$ | 15 | 15 | 15 | V |
| I_{SM} | $V_{CE} < V_{GE} < 0V$ | 125 | 125 | 125 | A |
| Thermal characteristics | | | | | |
| $R_{th(j-c)}$ | | 0.1 | 0.1 | 0.1 | $^{\circ}C/W$ |
| $R_{th(j-a)}$ | | 0.1 | 0.1 | 0.1 | $^{\circ}C/W$ |
| $R_{th(c-a)}$ | | 0.1 | 0.1 | 0.1 | $^{\circ}C/W$ |
| Mechanical data | | | | | |
| S_{max} | | 125 | 125 | 125 | A |
| S_{min} | | 125 | 125 | 125 | A |
| t_{max} | | 125 | 125 | 125 | A |



GA





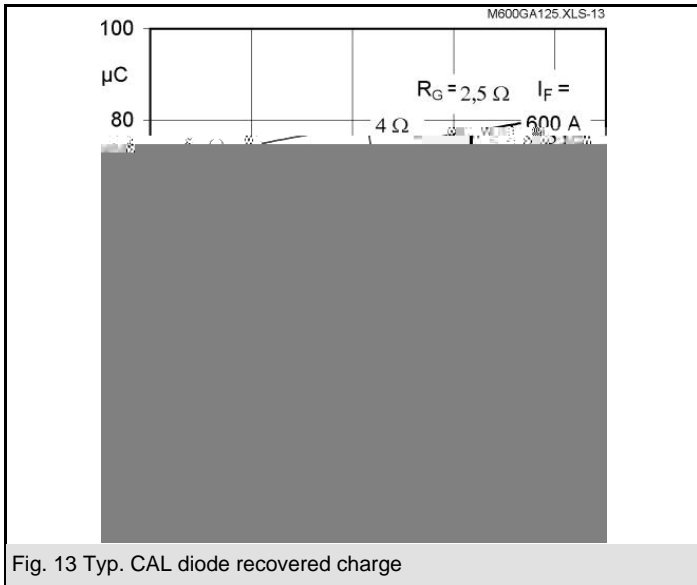
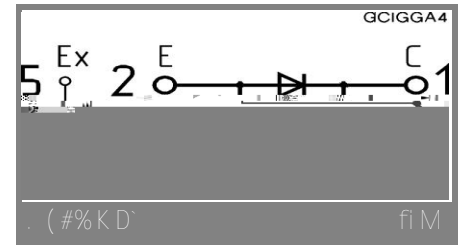
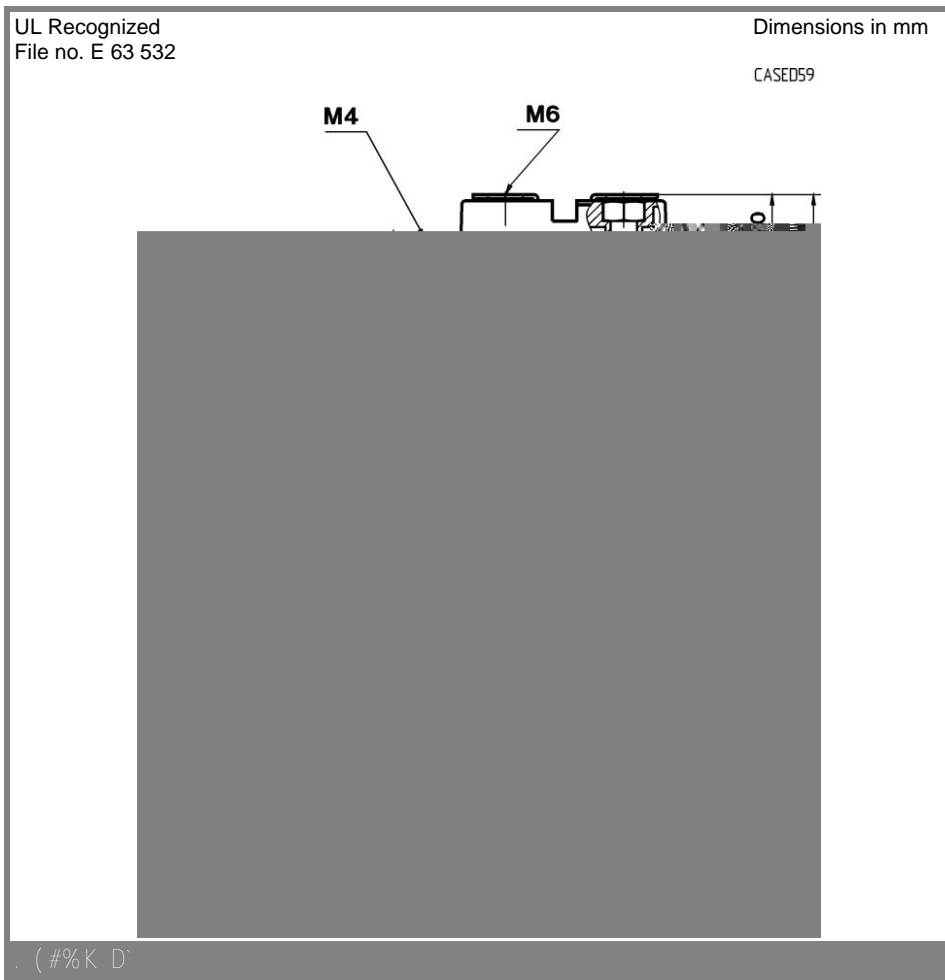


Fig. 13 Typ. CAL diode recovered charge



This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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