

**ELECTRICAL CHARACTERISTICS: OM200F120CMD (Tc= 25°C unless otherwise specified)**

| Characteristic | Symbol | Min. | Typ. | Max | Unit |
|----------------|--------|------|------|-----|------|
|----------------|--------|------|------|-----|------|

**OFF CHARACTERISTICS**

|                                                              |           |      |     |  |         |
|--------------------------------------------------------------|-----------|------|-----|--|---------|
| Collector Emitter Breakdown Voltage, $V_{CE}=0V$             | $V_{CES}$ | 1200 |     |  | V       |
| Zero Gate Voltage Drain Current, $V_{GE}=0$ , $V_{CE}=1200V$ | $I_{CES}$ |      | 10  |  | $\mu A$ |
| Gate Emitter Leakage Current, $V_{GE}=\pm 15V$ , $V_{CE}=0V$ | $I_{GES}$ |      | 100 |  | $\mu A$ |

**ON CHARACTERISTICS**

|                                                                 |               |     |     |     |   |
|-----------------------------------------------------------------|---------------|-----|-----|-----|---|
| Gate Threshold Voltage, $V_{CE}=V_{GE}$ , $I_C=6mA$             | $V_{GE(TH)}$  | 4.5 | 5.5 | 6.5 | V |
| Collector Emitter Saturation Voltage, $V_{GE}=15V$ , $I_C=200A$ | $V_{CE(SAT)}$ |     | 2.5 | 3.0 | V |

**DYNAMIC CHARACTERISTICS**

|                           |                          |           |    |    |    |
|---------------------------|--------------------------|-----------|----|----|----|
| Fwd. Transconductance     | $V_{CE}=5V$ , $I_C=200A$ | $g_{fs}$  | 50 | 69 | S  |
| Input Capacitance         | $V_{GE}=0$               | $C_{ies}$ |    | 17 | nF |
| Output Capacitance        | $V_{CE}=25V$             | $C_{oes}$ |    | 5  | nF |
| Rev. Transfer Capacitance | $f=1.0MHz$               | $C_{res}$ |    | 2  | nF |

**SWITCHING INDUCTIVE LOAD CHARACTERISTICS**

|                     |                                                                                          |              |  |     |     |    |
|---------------------|------------------------------------------------------------------------------------------|--------------|--|-----|-----|----|
| Turn-On Delay Time  | $V_{CC}=600V$ , $I_C=200A$<br><br>$V_{GE}=\pm 15/-10V$ , $R_G=5.1\Omega$<br>$L=100\mu H$ | $t_{(on)}$   |  | 175 | 400 | nS |
| Rise Time           |                                                                                          | $t_r$        |  | 140 |     | nS |
| Turn-on Losses      |                                                                                          | $E_{on}$     |  | 28  |     | mJ |
|                     |                                                                                          |              |  |     |     |    |
| Turn-off Delay Time |                                                                                          | $t_{d(off)}$ |  | 720 | 850 | nS |
| Fall Time           |                                                                                          | $t_f$        |  | 120 |     | nS |
| Turn-off Losses     |                                                                                          | $E_{off}$    |  | 15  |     | mJ |

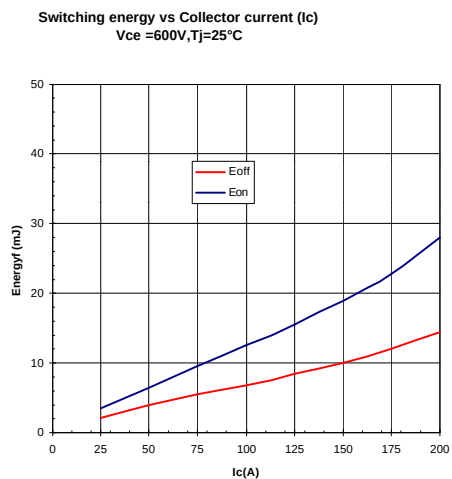
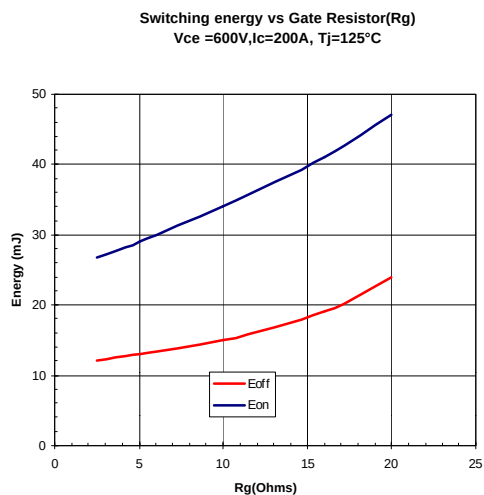
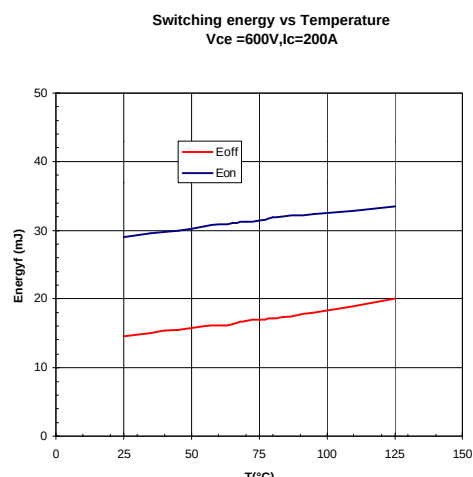
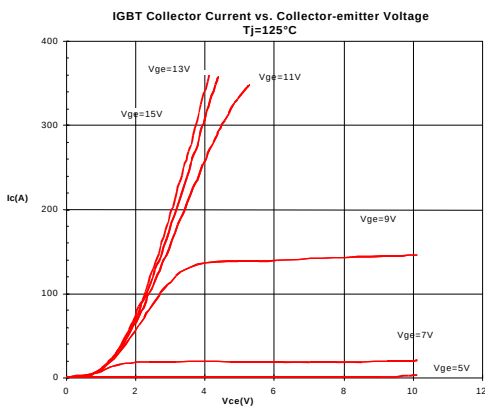
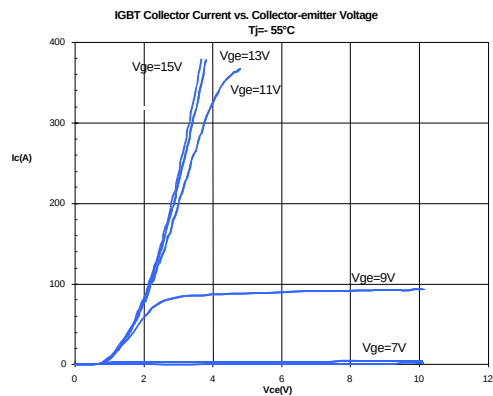
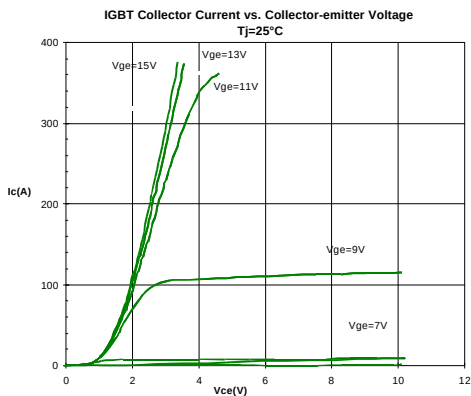
**DIODE CHARACTERISTICS**

|                                  |                                                                                                                                 |          |  |     |     |         |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------|--|-----|-----|---------|
| Maximum Forward Voltage          | $I_F=200A$ , $T_j=25^\circ C$<br>$T_j=125^\circ C$                                                                              | $V_F$    |  | 2.0 | 2.8 | V       |
|                                  |                                                                                                                                 |          |  | 1.8 | 2.3 |         |
| Reverse Recovery Characteristics | $V_R=600V$ , $T_j=25^\circ C$<br>$I_F=200A$ , $T_j=125^\circ C$<br>$di/dt=-1500A/\mu S$ , $T_j=25^\circ C$<br>$T_j=125^\circ C$ | $Q_{rr}$ |  | 10  |     | $\mu C$ |
|                                  |                                                                                                                                 |          |  | 15  |     |         |
|                                  |                                                                                                                                 | $I_{rr}$ |  | 75  |     | A       |
|                                  |                                                                                                                                 |          |  | 95  |     |         |
|                                  | $T_j=25^\circ C$<br>$T_j=125^\circ C$                                                                                           | $t_{rr}$ |  | 100 |     | nS      |
|                                  |                                                                                                                                 |          |  | 150 |     |         |

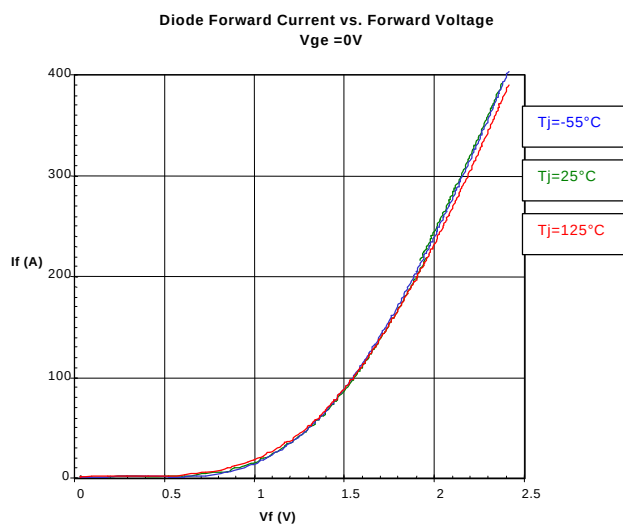
**THERMAL AND MECHANICAL CHARACTERISTICS**

|                                                  |           |   |     |      |       |
|--------------------------------------------------|-----------|---|-----|------|-------|
| Thermal Resistance, Junction to Case (Per IGBT)  | RthJC     |   |     | 0.07 | °C/W  |
| Thermal Resistance, Junction to Case (Per Diode) | RthJC     |   |     | 0.12 | °C/W  |
| Maximum Junction Temperature                     | TjMAX     |   |     | 150  | °C    |
| Isolation Voltage                                | VisRMS    |   |     | 2500 | V     |
| Screw Torque                                     | Mounting  | - | 15  | 20   | in-lb |
| Screw Torque (M6)                                | Terminals |   | 10  | 12   | in-lb |
| Screw Torque (M3)                                | Terminals | - | 6   | 8    | in-lb |
| Module Weight                                    | -         |   | 320 |      | Grams |

## OM200F120CMD

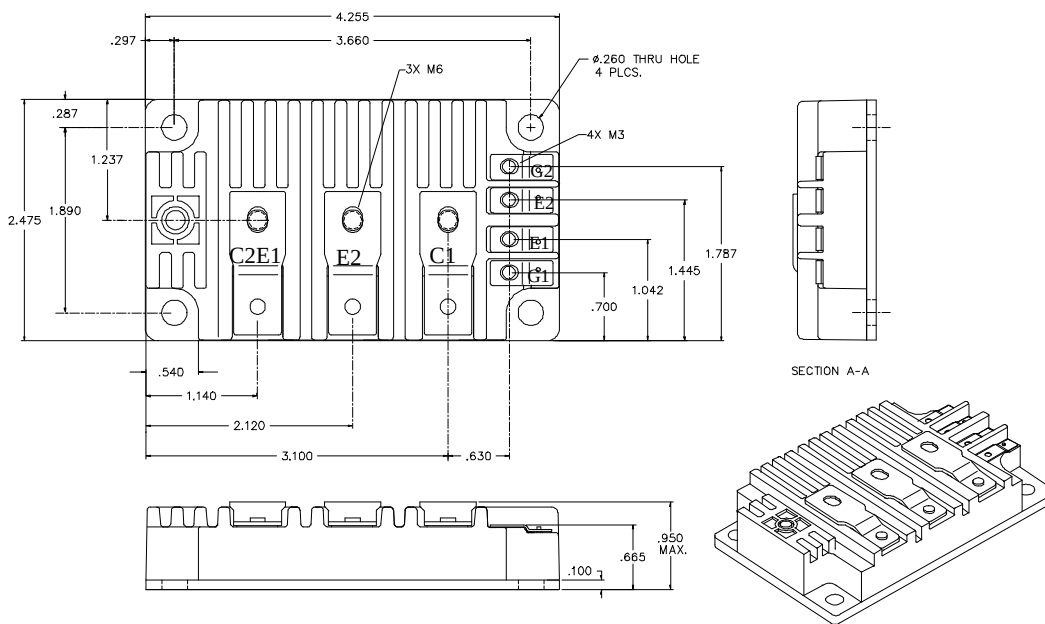


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### MECHANICAL OUTLINE



### EQUIVALENT CIRCUIT

