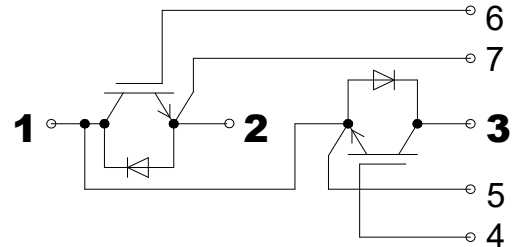


# SGG100N125UC1

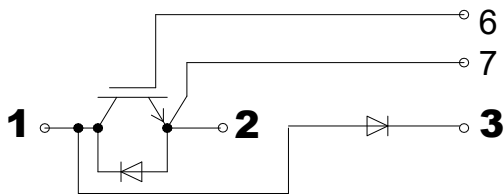
## Ultra Fast IGBT Modules



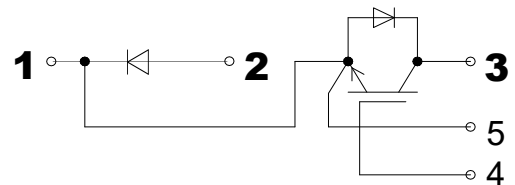
**SGG100N125UC1**



**SGD100N125UC1**



**SDG100N125UC1**



| Symbol                 | Test Condition  | Value                | Unit                 |
|------------------------|---|----------------------|----------------------|
| <b>IGBT</b>            |   |                      |                      |
| $V_{CES}$              |   | 1200                 | V                    |
| $I_C$                  | $T_C = 25(100)^\circ\text{C}$ per chip                            | 100(75)              | A                    |
| $V_{GES}$              |   | $\pm 20$             | V                    |
| $T_{vj}$ ( $T_{stg}$ ) |   | $-40 \sim +150(125)$ | $^\circ\text{C}$     |
| $P_{tot}$              |   | 450                  | W                    |
| <b>INVERSE DIODE</b>   |   |                      |                      |
| $I_F$                  | $T_C = 25(100)^\circ\text{C}$ per chip                            | 100(75)              | A                    |
| $I_{FM}$               |   | 200                  | A                    |
| $V_{RRM}$              |   | 1200                 | V                    |
| $i^2t$                 | $T_j = 125^\circ\text{C}$ , $t = 10\text{ms}$ , $V_R = 0\text{V}$ | 2000                 | $\text{A}^2\text{s}$ |

# SGG100N125UC1

## Ultra Fast IGBT Modules

| Symbol  | Test Conditions  | Min | Typ      | Max       | Unit |
|---|--|-----|----------|-----------|------|
| <b>IGBT</b> <span style="float: right;"><b>Tc = 25°C unless otherwise specified</b></span>          |  |     |          |           |      |
| $V_{GE(th)}$  | $V_{GE}=V_{CE}, I_C=2mA$   | 4.5 | 5.5      | 6.5       | V    |
| $I_{CES}$   | $V_{GE}=0; V_{CE}=V_{CES}; T_j=25(125)^\circ C$  |     | 0.15     | 0.5       | mA   |
| $V_{CE(TO)}$  | $T_j=25(125)^\circ C$  |     | 1.4(1.6) | 1.6(1.8)  | V    |
| $r_{CE}$  | $V_{GE}=15V$   |     | 11(15)   | 14(19)    | mΩ   |
| $V_{CE(sat)}$   | $I_C=75A; V_{GE}=15V; \text{chip level}$   |     | 3.3      | 3.7       | V    |
| $C_{ies}$   | $V_{GE}=0V, V_{CE}=25V, f=1MHz$  |     | 6.0      |           | nF   |
| $C_{oes}$   |  |     | 0.80     |           |      |
| $C_{res}$   |  |     | 0.40     |           |      |
| LCE   |  |     |          | 30        | nH   |
| RCC'+EE'  | Terminal to Case, $T_c=25^\circ C$   |     | 0.35     |           | mΩ   |
| $t_{d(on)}$   | $V_{CC} = 600V, I_C = 75A$<br>$R_{GON} = R_{GOFF} = 10\Omega$<br>$T_j=150^\circ C$<br>$V_{GE}=\pm 15V$ |     | 79       |           | ns   |
| $t_r$   |  |     | 40       |           | ns   |
| $t_{d(off)}$  |  |     | 350      |           | ns   |
| $t_f$   |  |     | 20       |           | ns   |
| $E_{on}/E_{off}$  |  |     |          | 8.50/3.30 |      |
| <b>INVERSE DIODE</b> <span style="float: right;"><b>Tc = 25°C unless otherwise specified</b></span> |  |     |          |           |      |
| $V_F$   | $I_F = 75A; V_{GE}=0V; T_j = 25^\circ C$   |     | 1.9      | 2.5       | V    |
| $Q_{rr}$  | $I_F=75A; V_R=300V; T_j=25^\circ C$<br>$di/dt = 600A/us, V_{GE}=-15V$                                  |     | 2.5      |           | μC   |
| $I_{RRM}$   |  |     | 25       |           | A    |
| $E_{rec}$   |  |     | 2.30     |           | mJ   |
| <b>THERMAL CHARACTERISTICS</b>  |  |     |          |           |      |
| $R_{th(j-c)}$   | per IGBT   |     |          | 0.18      | K/W  |
| $R_{th(j-c)D}$  | per FRD  |     |          | 0.49      | K/W  |
| Mechanical Data   |  |     |          |           |      |
| Ms  |  | 2.5 |          | 4         | Nm   |
| Weight  |  |     | 158      |           | g    |

### Features

- NPT Technology IGBT
- Fast Recovery Free Wheeling Diode
- Low Switching Losses
- $V_{ce(sat)}$  with positive temperature coefficient
- Fast Switching and short tail current
- Switched mode power supplies at  $f_{sw}>25KHz$
- Resonant inverters up to 100KHz
- Electronic Welders at  $f_{sw}>25KHz$

### Application

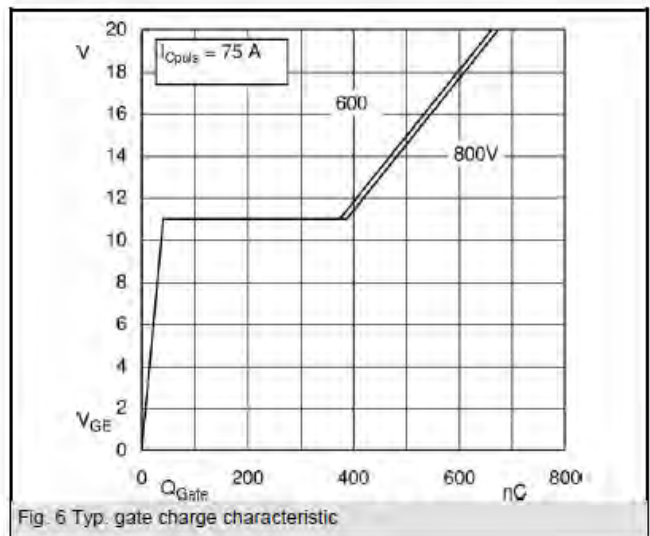
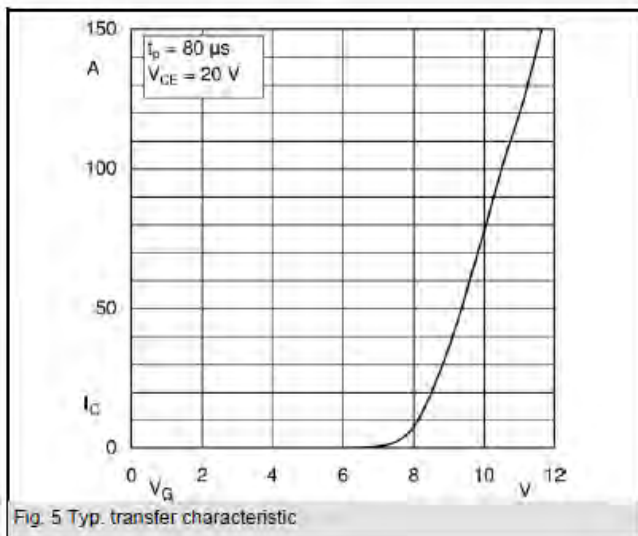
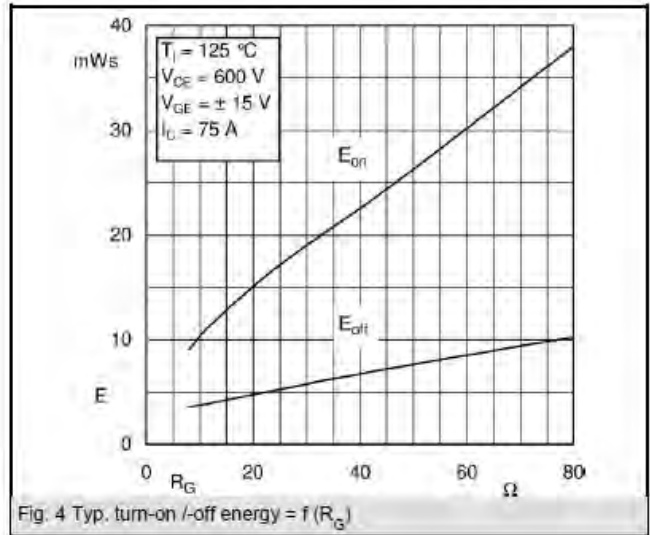
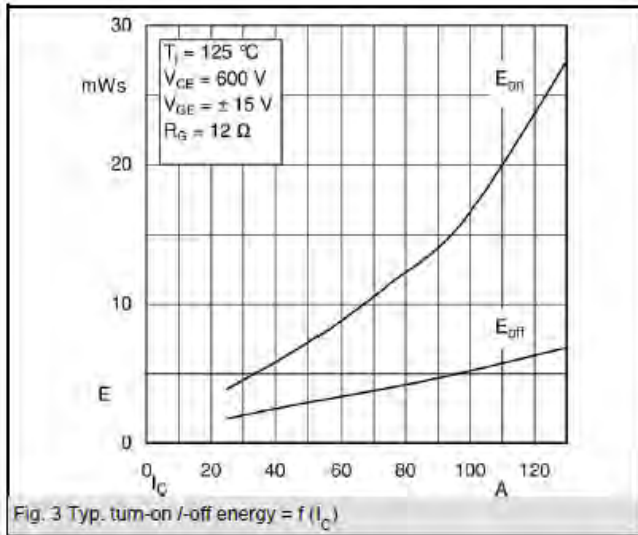
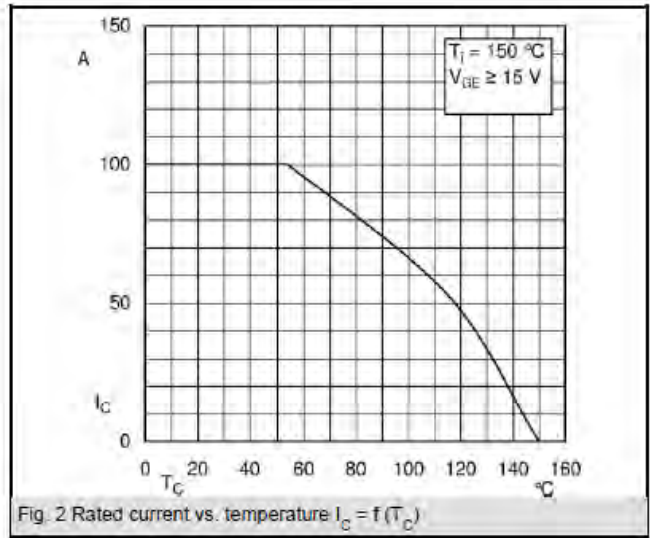
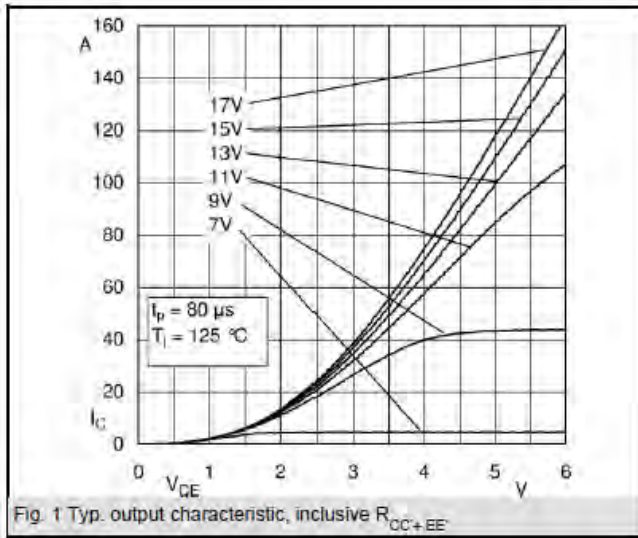
- Welding inverters
- Inductive Heating

### Advantages

- Space and weight savings
- Reduced protection circuits

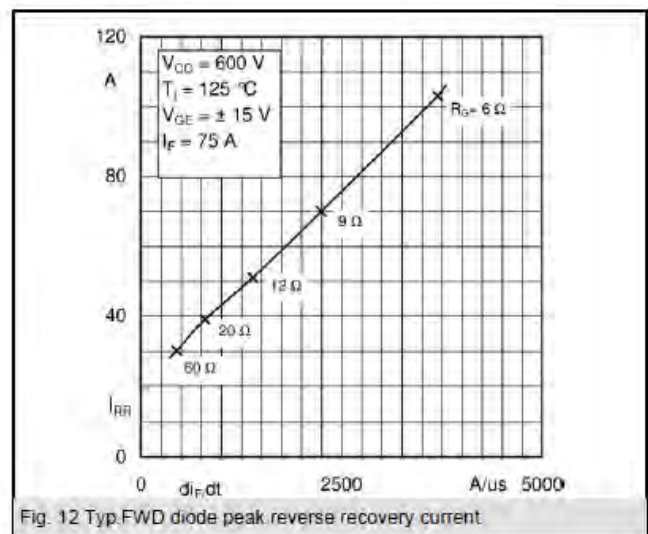
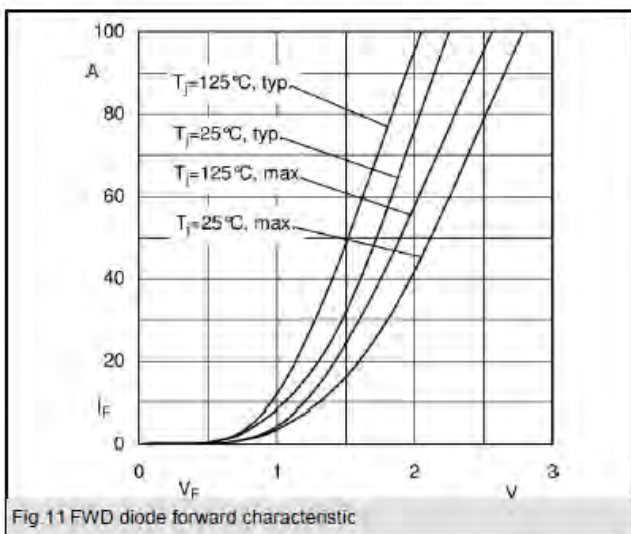
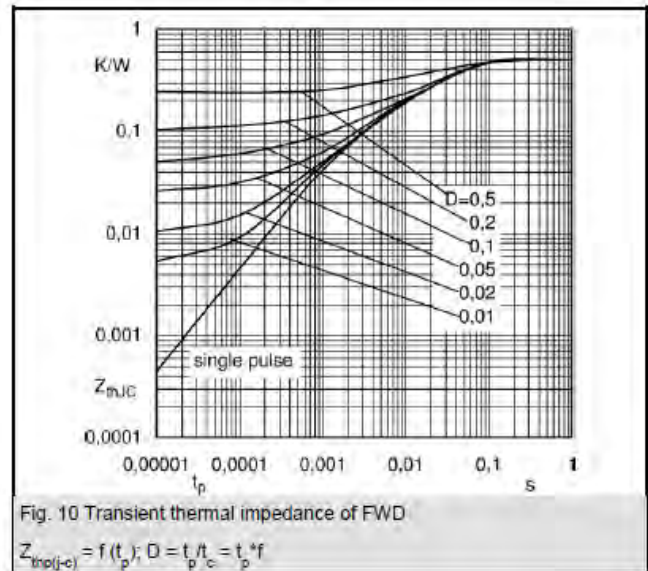
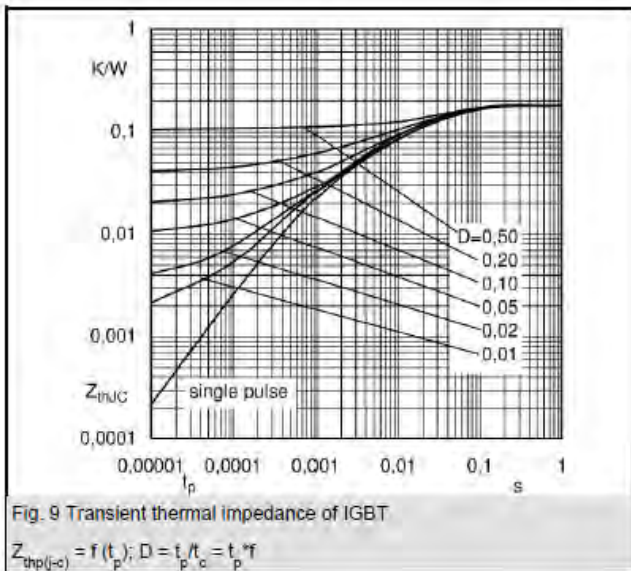
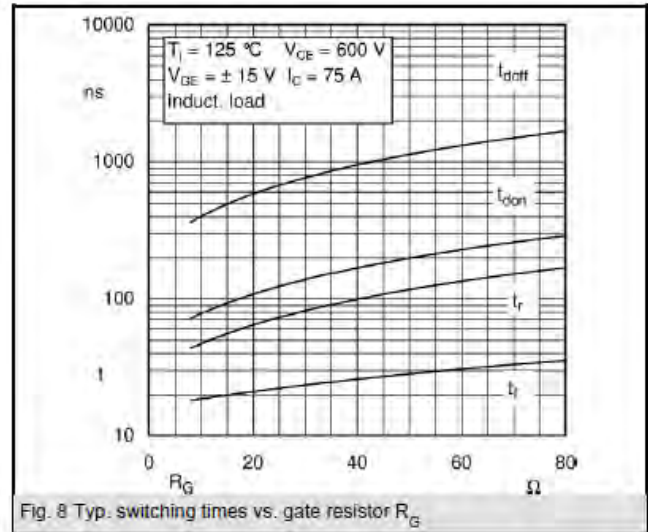
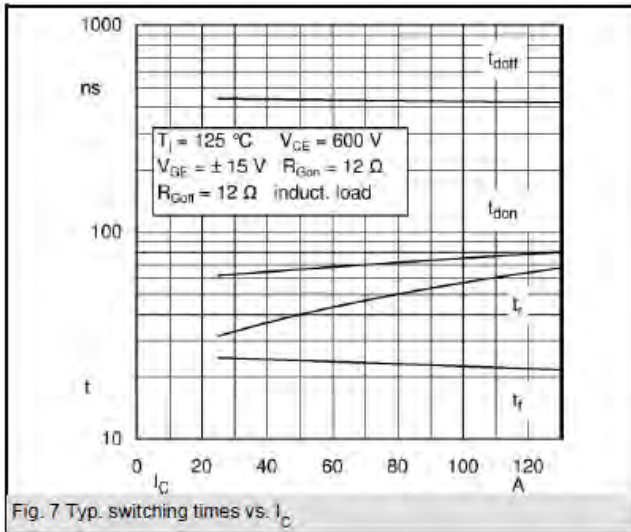
# SGG100N125UC1

## Ultra Fast IGBT Modules



# SGG100N125UC1

## Ultra Fast IGBT Modules



# SGG100N125UC1

## Ultra Fast IGBT Modules

