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Resonant Switching Series

Maximum Ratings

For optimum lifetime and reliability, Infineon recommends operating conditions that do not exceed 80% of the maximum ratings stated in this datasheet.

| Parameter | Symbol | Value | Unit |
|---|-------------|----------------------|--------------------|
| Collector-emitter voltage, $T_{vj} \geq 25^{\circ}\text{C}$ | V_{CE} | 1200 | V |
| DC collector current, limited by T_{vjmax} $T_c = 25^{\circ}\text{C}$ $T_c = 100^{\circ}\text{C}$ | I_C | 40.0 20.0 | A |
| Pulsed collector current, t_p limited by T_{vjmax} | I_{Cpuls} | 60.0 | A |
| Non repetitive peak collector current ¹⁾ | I_{CSM} | 200 | A |
| Turn off safe operating area $V_{CE} \leq 1200\text{V}$, $T_{vj} \leq 175^{\circ}\text{C}$, $t_p = 1\mu\text{s}$ | - | 60.0 | A |
| Diode forward current, limited by T_{vjmax} $T_c = 25^{\circ}\text{C}$ $T_c = 100^{\circ}\text{C}$ | I_F | 40.0 20.0 | A |
| Diode pulsed current, t_p limited by T_{vjmax} | I_{Fpuls} | 60.0 | A |
| Gate-emitter voltage Transient Gate-emitter voltage ($t_p \leq 10\mu\text{s}$, $D < 0.010$) | V_{GE} | ± 20 ± 25 | V |
| Power dissipation $T_c = 25^{\circ}\text{C}$ Power dissipation $T_c = 100^{\circ}\text{C}$ | P_{tot} | 288.0 144.0 | W |
| Operating junction temperature | T_{vj} | -40...+175 | $^{\circ}\text{C}$ |
| Storage temperature | T_{stg} | -55...+150 | $^{\circ}\text{C}$ |
| Soldering temperature, wave soldering 1.6mm (0.063in.) from case for 10s | | 260 | $^{\circ}\text{C}$ |
| Mounting torque, M3 screw Maximum of mounting processes: 3 | M | 0.6 | Nm |

Thermal Resistance

| Parameter | Symbol | Conditions | Value | | | Unit |
|--|---------------|------------|-------|------|------|------|
| | | | min. | typ. | max. | |
| R_{th} Characteristics | | | | | | |
| IGBT thermal resistance, junction - case | $R_{th(j-c)}$ | | - | - | 0.52 | K/W |
| Diode thermal resistance, junction - case | $R_{th(j-c)}$ | | - | - | 0.52 | K/W |
| Thermal resistance junction - ambient | $R_{th(j-a)}$ | | - | - | 40 | K/W |

¹⁾ capacitor charging saturation current limited by $T_{vjmax} < 175^{\circ}\text{C}$ and $t_p < 3\mu\text{s}$