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**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	$V_{CE}$	650	V
DC collector current, limited by $T_{vjmax}$ $T_C = 25^\circ\text{C}$ value limited by bondwire $T_C = 100^\circ\text{C}$	$I_C$	80.0 56.0	A
Pulsed collector current, $t_p$ limited by $T_{vjmax}$	$I_{Cpuls}$	150.0	A
Turn off safe operating area $V_{CE} \leq 650\text{V}$ , $T_{vj} \leq 175^\circ\text{C}$	-	150.0	A
Diode forward current, limited by $T_{vjmax}$ $T_C = 25^\circ\text{C}$ value limited by bondwire $T_C = 100^\circ\text{C}$	$I_F$	40.0 27.0	A
Diode pulsed current, $t_p$ limited by $T_{vjmax}$	$I_{Fpuls}$	150.0	A
Gate-emitter voltage Transient Gate-emitter voltage ( $t_p \leq 10\mu\text{s}$ , $D < 0.010$ )	$V_{GE}$	$\pm 20$ $\pm 30$	V
Power dissipation $T_C = 25^\circ\text{C}$ Power dissipation $T_C = 100^\circ\text{C}$	$P_{tot}$	305.0 152.5	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	Max. Value	Unit
<b>Characteristic</b>				
IGBT thermal resistance, junction - case	$R_{th(j-c)}$		0.50	K/W
Diode thermal resistance, junction - case	$R_{th(j-c)}$		1.50	K/W
Thermal resistance junction - ambient	$R_{th(j-a)}$		40	K/W