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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, $T_{vj} \geq 25^{\circ}\text{C}$	V_{CE}	650	V
DC collector current, limited by T_{vjmax} $T_C = 25^{\circ}\text{C}$ value limited by bondwire $T_C = 130^{\circ}\text{C}$	I_C	80.0 50.0	A
Pulsed collector current, t_p limited by T_{vjmax}	I_{Cpuls}	150.0	A
Turn off safe operating area $V_{CE} \leq 650\text{V}$, $T_{vj} \leq 175^{\circ}\text{C}$, $t_p = 1\mu\text{s}$	-	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	37.0 22.0	A
Diode pulsed current, t_p limited by T_{vjmax}	I_{Fpuls}	150.0	A
Gate-emitter voltage	V_{GE}	± 20	V
Power dissipation $T_C = 25^{\circ}\text{C}$ Power dissipation $T_C = 130^{\circ}\text{C}$	P_{tot}	282.0 141.0	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	Max. Value	Unit
Characteristic				
IGBT thermal resistance, junction - case	$R_{th(j-c)}$		0.53	K/W
Diode thermal resistance, junction - case	$R_{th(j-c)}$		2.29	K/W
Thermal resistance junction - ambient	$R_{th(j-a)}$		40	K/W