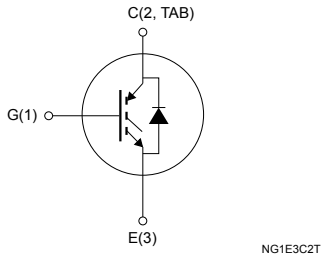
STGWA50IH65DF

Datasheet

Trench gate field-stop 650 V, 50 A, soft switching IH series IGBT in a TO-247 long leads package



Features

- Designed for soft-commutation only
- Maximum junction temperature: T_J = 175 °C
- $V_{CE(sat)}$ = 1.5 V (typ.) @ I_C = 50 A
- Minimized tail current
- Tight parameter distribution
- Low thermal resistance
- Low voltage drop freewheeling co-packaged diode
- Positive $V_{CE(sat)}$ temperature coefficient

Applications

- Induction heating
- Resonant converters
- Microwave ovens

Description

The newest IGBT 650 V soft-switching IH series has been developed using an advanced proprietary trench gate field-stop structure, whose performance is optimized both in conduction and switching losses for soft commutation. A freewheeling diode with a low drop forward voltage is included. The result is a product specifically designed to maximize efficiency for any resonant and soft-switching applications.

Product status link
STGWA50IH65DF

Product summary	
Order code	STGWA50IH65DF
Marking	G50IH65DF
Package	TO-247 long leads
Packing	Tube

1 Electrical ratings

Table 1. Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter voltage (V_{GE} = 0 V)	650	V
I_C	Continuous collector current at T_C = 25 °C	100	A
	Continuous collector current at T_C = 100 °C	50	
I_{CP}(1)	Pulsed collector current	150	
V_{GE}	Gate-emitter voltage	±20	V
I_F	Continuous forward current at T_C = 25 °C	50	A
	Continuous forward current at T_C = 100 °C	25	
I_{FP}(1)	Pulsed forward current	150	
P_{TOT}	Total power dissipation at T_C = 25 °C	300	W
T_{STG}	Storage temperature range	- 55 to 150	°C
T_J	Operating junction temperature range	- 55 to 175	

1. *Pulse width limited by maximum junction temperature.*

Table 2. Thermal data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal resistance junction-case IGBT	0.5	°C/W
	Thermal resistance junction-case diode	1.47	
R_{thJA}	Thermal resistance junction-ambient	50	