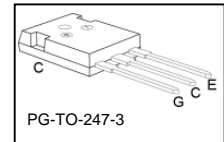
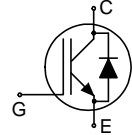


Low Loss DuoPack : IGBT in **TrenchStop®** and Fieldstop technology with soft, fast recovery anti-parallel Emitter Controlled HE diode

- Approx. 1.0V reduced $V_{CE(sat)}$ and 0.5V reduced V_F compared to BUP313D
- Short circuit withstand time – 10 μ s
- Designed for :
 - Frequency Converters
 - Uninterrupted Power Supply
- **TrenchStop®** and Fieldstop technology for 1200 V applications offers :
 - very tight parameter distribution
 - high ruggedness, temperature stable behavior
- NPT technology offers easy parallel switching capability due to positive temperature coefficient in $V_{CE(sat)}$
- Low EMI
- Low Gate Charge
- Very soft, fast recovery anti-parallel Emitter Controlled HE diode
- Qualified according to JEDEC¹ for target applications
- Pb-free lead plating; RoHS compliant
- Complete product spectrum and PSpice Models : <http://www.infineon.com/igbt/>



Type	V_{CE}	I_C	$V_{CE(sat), T_j=25^\circ C}$	$T_{j,max}$	Marking Code	Package
IKW15T120	1200V	15A	1.7V	150°C	K15T120	PG-TO-247-3

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CE}	1200	V
DC collector current $T_C = 25^\circ C$ $T_C = 100^\circ C$	I_C	30 15	A
Pulsed collector current, t_p limited by $T_{j,max}$	$I_{C,puls}$	45	
Turn off safe operating area $V_{CE} \leq 1200V, T_j \leq 150^\circ C$	-	45	
Diode forward current $T_C = 25^\circ C$ $T_C = 100^\circ C$	I_F	30 15	
Diode pulsed current, t_p limited by $T_{j,max}$	$I_{F,puls}$	45	
Gate-emitter voltage	V_{GE}	± 20	V
Short circuit withstand time ²⁾ $V_{GE} = 15V, V_{CC} \leq 1200V, T_j \leq 150^\circ C$	t_{SC}	10	μs
Power dissipation $T_C = 25^\circ C$	P_{tot}	110	W
Operating junction temperature	T_j	-40...+150	°C
Storage temperature	T_{stg}	-55...+150	

¹ J-STD-020 and JESD-022

²⁾ Allowed number of short circuits: <1000; time between short circuits: >1s.

Soldering temperature, 1.6mm (0.063 in.) from case for 10s	-	260	
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Thermal Resistance

Parameter	Symbol	Conditions	Max. Value	Unit
Characteristic				
IGBT thermal resistance, junction – case	R_{thJC}		1.1	K/W
Diode thermal resistance, junction – case	R_{thJCD}		1.5	
Thermal resistance, junction – ambient	R_{thJA}		40	

Electrical Characteristic, at $T_j = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			min.	typ.	max.	
Static Characteristic						
Collector-emitter breakdown voltage	$V_{(BR)CES}$	$V_{GE}=0V, I_C=0.5mA$	1200	-	-	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$V_{GE} = 15V, I_C=15A$ $T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$ $T_j=150^\circ\text{C}$	- - -	1.7 2.0 2.2	2.2 - -	
Diode forward voltage	V_F	$V_{GE}=0V, I_F=15A$ $T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$ $T_j=150^\circ\text{C}$	- - -	1.7 1.7 1.7	2.2 - -	
Gate-emitter threshold voltage	$V_{GE(th)}$	$I_C=0.6mA, V_{CE}=V_{GE}$	5.0	5.8	6.5	
Zero gate voltage collector current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V$ $T_j=25^\circ\text{C}$ $T_j=150^\circ\text{C}$	- -	- -	0.2 2.0	mA
Gate-emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V$	-	-	100	
Transconductance	g_{fs}	$V_{CE}=20V, I_C=15A$	-	10	-	S
Integrated gate resistor	R_{Gint}		none			Ω