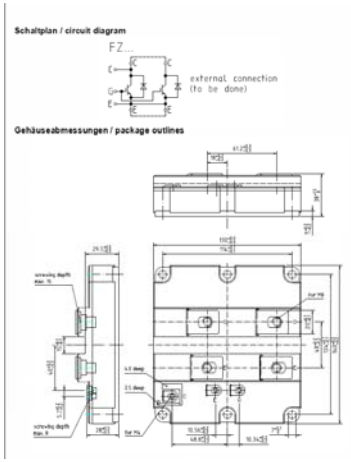
1. IGBT

NAME : IGBT
CODE : AGD025000006
P/N : FZ800R12KS4
MANUFACTUR : EUPEC

○ IGBT(INSULATED GATE BIPOLAR TRANSISTOR)

○ MODEL P/N : FZ800R12KS4
○ DESCRIPION : INSULATED GATE BIPOLAR TRANSISTOR
○ ELECTRICAL SPECIFICATION :
- V(ces) : 1200 V
- I(c) : 800 A
○ OPERATING TEMPERATURE : 25 ~ 150℃



Technische Information / technical information
IGBT-Module
IGBT-modules
FZ800R12KS4_B2
power electronics in motion
eupec

Hochleistungsmodul mit AlSiC Bodenplatte und schnellem IGBT2 für hochfrequentes Schalten
High Power Module with AlSiC base plate and short tail IGBT2 for high switching frequency

IGBT-Wechselrichter / IGBT-inverter
Höchstzulässige Werte / maximum rated values

Kollektor-Emitter-Sperrspannung collector-emitter voltage	T_{vj} = 25°C	V_{CES}	1200	V
Kollektor-Dauergleichstrom DC-collector current	T_C = 80°C, T_{vj} = 150°C T_C = 25°C, T_{vj} = 150°C	$I_{C\ nom}$ I_C	800 1200	A A
Periodischer Kollektor Spitzenstrom repetitive peak collector current	t_P = 1 ms	I_{CRM}	1600	A
Gesamt-Verlustleistung total power dissipation	T_C = 25°C, T_{vj} = 150°C	P_{tot}	7,60	kW
Gate-Emitter-Spitzenspannung gate-emitter peak voltage		V_{GES}	+/-20	V

Charakteristische Werte / characteristic values

			min.	typ.	max.	
Kollektor-Emitter Sättigungsspannung collector-emitter saturation voltage	I_C = 800 A, V_{GE} = 15 V I_C = 800 A, V_{GE} = 15 V	T_{vj} = 25°C T_{vj} = 125°C	$V_{CE\ sat}$	3,20 3,85	3,70	V V
Gate-Schwellenspannung gate threshold voltage	I_C = 32,0 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	4,5	5,5	6,5	V
Gateladung gate charge	V_{GE} = -15 V ... +15 V, V_{CE} = 600V		Q_G		8,40		µC
Interner Gatewiderstand internal gate resistor	T_{vj} = 25°C		R_{Gint}		0,56		Ω
Eingangskapazität input capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		52,0		nF
Rückwirkungskapazität reverse transfer capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		3,40		nF
Kollektor-Emitter Reststrom collector-emitter cut-off current	V_{CE} = 1200 V, V_{GE} = 0 V, T_{vj} = 25°C		I_{CES}			5,0	mA
Gate-Emitter Reststrom gate-emitter leakage current	V_{GE} = 0 V, V_{GE} = 20 V, T_{vj} = 25°C		I_{GES}			400	nA
Einschaltverzögerungszeit (ind. Last) turn-on delay time (inductive load)	I_C = 800 A, V_{CE} = 600 V V_{GE} = ±15 V R_{Gon} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	$t_{d\ on}$		0,10 0,125		µs µs
Anstiegszeit (induktive Last) rise time (inductive load)	I_C = 800 A, V_{CE} = 600 V V_{GE} = ±15 V R_{Gon} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	t_r		0,09 0,10		µs µs
Abschaltverzögerungszeit (ind. Last) turn-off delay time (inductive load)	I_C = 800 A, V_{CE} = 600 V V_{GE} = ±15 V R_{Goff} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	$t_{d\ off}$		0,53 0,59		µs µs
Fallzeit (induktive Last) fall time (inductive load)	I_C = 800 A, V_{CE} = 600 V V_{GE} = ±15 V R_{Goff} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	t_f		0,06 0,07		µs µs
Einschaltverlustenergie pro Puls turn-on energy loss per pulse	I_C = 800 A, V_{CE} = 600 V, L_S = 60 nH V_{GE} = ±15 V R_{Gon} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	E_{on}		76,0		mJ mJ
Abschaltverlustenergie pro Puls turn-off energy loss per pulse	I_C = 800 A, V_{CE} = 600 V, L_S = 60 nH V_{GE} = ±15 V R_{Goff} = 1,3 Ω	T_{vj} = 25°C T_{vj} = 125°C	E_{off}		58,0		mJ mJ
Kurzschlussverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 900 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt	t_P ≤ 10 µs, T_{vj} = 125°C	I_{SC}		6000		A
Innerer Wärmewiderstand thermal resistance, junction to case	pro IGBT per IGBT		R_{thJC}			16,5	K/kW
Übergangs-Wärmewiderstand thermal resistance, case to heatsink	pro IGBT / per IGBT λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		13,5		K/kW