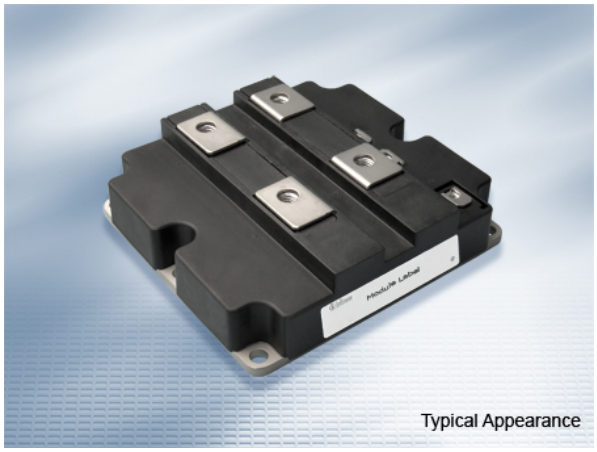
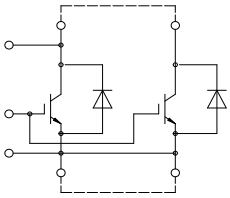
IHM-B Modul mit schnellem Trench/Feldstopp IGBT3 und Emitter Controlled 3 Diode
IHM-B module with fast Trench/Fieldstop IGBT3 and Emitter Controlled 3 diode





external connection
(to be done)

V_{CES} = 3300V
$I_{C\ nom}$ = 1000A / I_{CRM} = 2000A

Potentielle Anwendungen
- Chopper-Anwendungen
- Mittelspannungsantriebe
- Motorantriebe
- Traktionsumrichter
- USV-Systeme
- Windgeneratoren

Potential Applications
- Chopper applications
- Medium voltage converters
- Motor drives
- Traction drives
- UPS systems
- Wind turbines

Elektrische Eigenschaften
- Große DC-Festigkeit
- Hohe Kurzschlussrobustheit
- Niedrige Schaltverluste
- Niedriges V_{CEsat}
- Sehr große Robustheit
- $T_{vj\ op}$ = 150°C
- V_{CEsat} mit positivem Temperaturkoeffizienten

Electrical Features
- High DC stability
- High short-circuit capability
- Low switching losses
- Low V_{CEsat}
- Unbeatable robustness
- $T_{vj\ op}$ = 150°C
- V_{CEsat} with positive temperature coefficient

Mechanische Eigenschaften
- AlSiC Bodenplatte für erhöhte thermische Lastwechselfestigkeit
- Gehäuse mit CTI > 600
- IHM B Gehäuse
- Isolierte Bodenplatte

Mechanical Features
- AlSiC base plate for increased thermal cycling capability
- Package with CTI > 600
- IHM B housing
- Isolated base plate

Module Label Code

Barcode Code 128

DMX - Code

Content of the Code	Digit
Module Serial Number	1 - 5
Module Material Number	6 - 11
Production Order Number	12 - 19
Datecode (Production Year)	20 - 21
Datecode (Production Week)	22 - 23

IGBT,Wechselrichter / IGBT,Inverter

Höchstzulässige Werte / Maximum Rated Values

Kollektor-Emitter-Sperrspannung Collector-emitter voltage	T_{vj} = -40°C T_{vj} = 150°C	V_{CES}		3300 3300	V
Kollektor-Dauergleichstrom Continuous DC collector current	T_C = 95°C, $T_{vj\,max}$ = 150°C	I_{CDC}		1000	A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	t_P = 1 ms	I_{CRM}		2000	A
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 = 1000 A, V_{GE} = 15 V T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$V_{CE\,sat}$		2,55 3,00 3,15	3,10 3,45	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 48,0 mA, V_{CE} = V_{GE}, T_{vj} = 25°C	V_{GEth}	5,20	5,80	6,40	V
Gateladung Gate charge	V_{GE} = -15 / 15 V, V_{CE} = 1800 V	Q_G		28,0		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C	R_{Gint}		0,63		Ω
Eingangskapazität Input capacitance	f = 1000 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V	C_{ies}		190		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1000 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V	C_{res}		4,00		nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	V_{CE} = 3300 V, V_{GE} = 0 V, T_{vj} = 25°C	I_{CES}			5,0	mA
Gate-Emitter-Reststrom Gate-emitter leakage current	V_{CE} = 0 V, V_{GE} = 20 V, T_{vj} = 25°C	I_{GES}			400	nA
Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load	I_C = 1000 A, V_{CE} = 1800 V V_{GE} = -15 / 15 V R_{Gon} = 0,71 Ω, C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,35 0,38 0,38		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 1000 A, V_{CE} = 1800 V V_{GE} = -15 / 15 V R_{Gon} = 0,71 Ω, C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,35 0,38 0,38		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 1000 A, V_{CE} = 1800 V V_{GE} = -15 / 15 V R_{Goff} = 2,3 Ω, C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		3,00 3,20 3,20		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 1000 A, V_{CE} = 1800 V V_{GE} = -15 / 15 V R_{Goff} = 2,3 Ω, C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_f		0,30 0,35 0,35		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 1000 A, V_{CE} = 1800 V, Lσ = 85 nH di/dt = 3000 A/µs (T_{vj} = 150°C) V_{GE} = -15 / 15 V, R_{Gon} = 0,71 Ω C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		1250 1700 1950		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 1000 A, V_{CE} = 1800 V, Lσ = 85 nH du/dt = 2100 V/µs (T_{vj} = 150°C) V_{GE} = -15 / 15 V, R_{Goff} = 2,3 Ω C_{GE} = 220 nF T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		1050 1400 1550		mJ mJ mJ
Kurzschlußverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 2500 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt t_P ≤ 10 µs, T_{vj} = 150°C	I_{SC}		4200		A
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT	R_{thJC}			11,1	K/kW
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro IGBT / per IGBT λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)	R_{thCH}		14,5		K/kW
Temperatur im Schaltbetrieb Temperature under switching conditions		$T_{vj\,op}$	-40		150	°C