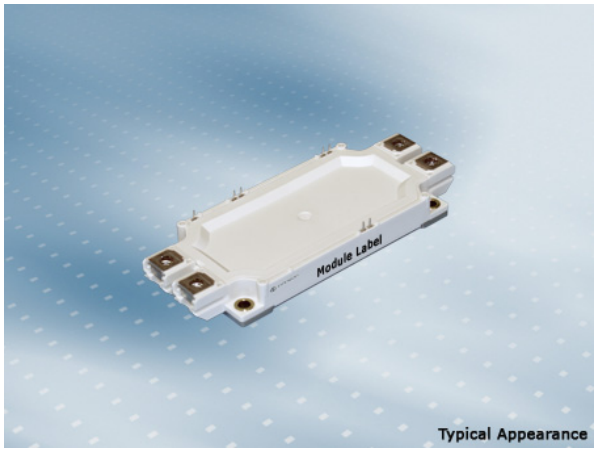
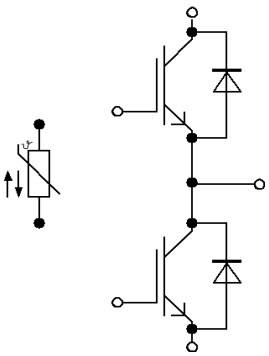
EconoDUAL™3 Modul mit Trench/Feldstopp IGBT4 und Emitter Controlled Diode und PressFIT / NTC / TIM
EconoDUAL™3 module with Trench/Fieldstop IGBT4 and Emitter Controlled diode and PressFIT / NTC / TIM





V_{CES} = 1700V
$I_{C\ nom}$ = 600A / I_{CRM} = 1200A

Typische Anwendungen
- Hochleistungsumrichter
- Windgeneratoren

Typical Applications
- High power converters
- Wind turbines

Elektrische Eigenschaften
- Hohe Stromdichte
- Niedriges V_{CEsat}
- $T_{vj\ op}$ = 150°C
- V_{CEsat} mit positivem Temperaturkoeffizienten

Electrical Features
- High current density
- Low V_{CEsat}
- $T_{vj\ op}$ = 150°C
- V_{CEsat} with positive temperature coefficient

Mechanische Eigenschaften
- Hohe Leistungsdichte
- Isolierte Bodenplatte
- Standardgehäuse
- Thermisches Interface Material bereits aufgetragen

Mechanical Features
- High power density
- Isolated base plate
- Standard housing
- Pre-applied Thermal Interface Material

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} = 25°C	V_{CES}	1700	V
Kollektor-Dauergleichstrom Continuous DC collector current	T_H = 50°C, $T_{vj\,max}$ = 175°C	$I_{C\,nom}$	600	A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	t_P = 1 ms	I_{CRM}	1200	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 = 600 A, V_{GE} = 15 V I_C = 600 A, V_{GE} = 15 V I_C = 600 A, V_{GE} = 15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$V_{CE\,sat}$		1,95 2,35 2,45	2,30	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 24,0 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	5,20	5,80	6,40	V
Gateladung Gate charge	V_{GE} = -15 V ... +15 V		Q_G		6,15		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		1,2		Ω
Eingangskapazität Input capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		48,0		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		1,55		nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	V_{CE} = 1700 V, V_{GE} = 0 V, T_{vj} = 25°C		I_{CES}			1,0	mA
Gate-Emitter-Reststrom Gate-emitter leakage current	V_{CE} = 0 V, V_{GE} = 20 V, T_{vj} = 25°C		I_{GES}			100	nA
Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load	I_C = 600 A, V_{CE} = 900 V V_{GE} = ±15 V R_{Gon} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,20 0,21 0,24		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 600 A, V_{CE} = 900 V V_{GE} = ±15 V R_{Gon} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,07 0,08 0,08		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 600 A, V_{CE} = 900 V V_{GE} = ±15 V R_{Goff} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		0,62 0,75 0,80		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 600 A, V_{CE} = 900 V V_{GE} = ±15 V R_{Goff} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_f		0,11 0,16 0,18		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 600 A, V_{CE} = 900 V, L_S = 80 nH V_{GE} = ±15 V, di/dt = 6500 A/µs (T_{vj} = 150°C) R_{Gon} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		140 210 225		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 600 A, V_{CE} = 900 V, L_S = 80 nH V_{GE} = ±15 V, du/dt = 3000 V/µs (T_{vj} = 150°C) R_{Goff} = 1,0 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		115 180 205		mJ mJ mJ
Kurzschlußverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 1000 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt	t_P ≤ 10 µs, T_{vj} = 25°C t_P ≤ 10 µs, T_{vj} = 150°C	I_{SC}		3000 2300		A A
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro IGBT / per IGBT valid with IFX pre-applied thermal interface material		R_{thJH}			0,0673	K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C