PrimePACK™2 Modul mit Trench/Feldstopp IGBT4 und Emitter Controlled Diode
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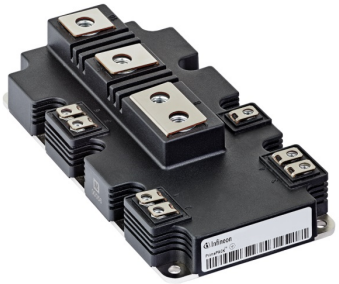

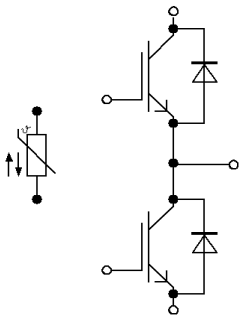

V_{CES} = 1200V
$I_{C\ nom}$ = 600A / I_{CRM} = 1200A

Potentielle Anwendungen
- 3-Level-Applikationen
- Motorantriebe
- Windgeneratoren

Potential Applications
- 3-level-applications
- Motor drives
- Wind turbines

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

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

Mechanische Eigenschaften
- 4 kV AC 1min Isolationsfestigkeit
- Gehäuse mit CTI > 400
- Große Luft- und Kriechstrecken
- Integrierter NTC Temperatur Sensor
- RoHS konform

Mechanical Features
- 4 kV AC 1min insulation
- Package with CTI > 400
- High creepage and clearance distances
- Integrated NTC temperature sensor
- RoHS compliant

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}	1200	V
Kollektor-Dauergleichstrom Continuous DC collector current	T_C = 100°C, $T_{vj\,max}$ = 175°C	I_{CDC}	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	$V_{CE\,sat}$		1,70 2,00 2,10	2,05 2,45 2,55	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 23,0 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	5,00	5,80	6,50	V
Gateladung Gate charge	V_{GE} = -15 / 15 V		Q_G		4,40		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		1,8		Ω
Eingangskapazität Input capacitance	f = 1000 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		37,0		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1000 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		2,05		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_{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 = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,21 0,24 0,24		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,12 0,12 0,13		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		0,70 0,80 0,85		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_f		0,15 0,20 0,20		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, di/dt = 3800 A/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, di/dt = 3800 A/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, di/dt = 3800 A/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Gon} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		52,0 77,0 83,0		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, du/dt = 3100 V/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, du/dt = 3100 V/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω I_C = 600 A, V_{CE} = 600 V, Lσ = 45 nH, du/dt = 3100 V/µs (T_{vj} = 150°C), V_{GE} = -15 / 15 V, R_{Goff} = 2,2 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		81,0 105 115		mJ mJ mJ
Kurzschlußverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 800 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt	t_P ≤ 10 µs, T_{vj} = 150°C	I_{SC}		2400		A
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT		R_{thJC}			45,0	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}		14,0		K/kW
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C