EasyPIM™ Modul mit TRENCHSTOP™ IGBT7 und Emitter Controlled 7 Diode und NTC
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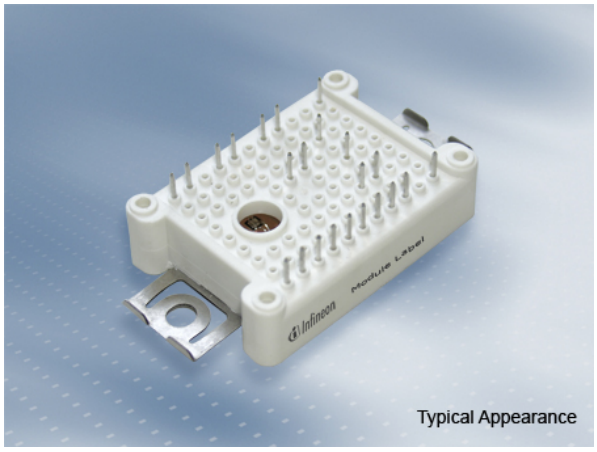
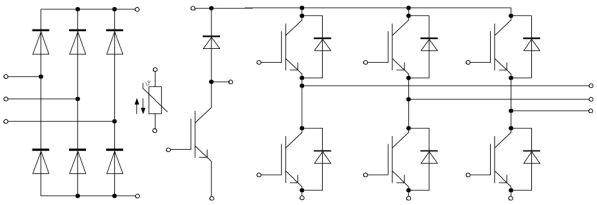
Vorläufige Daten / Preliminary Data





V_{CES} = 1200V
$I_{C\ nom}$ = 15A / I_{CRM} = 30A

Potentielle Anwendungen
- Hilfsumrichter
- Klimaanlagen
- Motorantriebe

Potential Applications
- Auxiliary inverters
- Air conditioning
- Motor drives

Elektrische Eigenschaften
- Niedriges V_{CEsat}
- Trenchstop™ IGBT7
- Überlastbetrieb bis zu 175°C

Electrical Features
- Low V_{CEsat}
- Trenchstop™ IGBT7
- Overload operation up to 175°C

Mechanische Eigenschaften
- 2,5 kV AC 1min Isolationsfestigkeit
- Al_2O_3 Substrat mit kleinem thermischen Widerstand
- Hohe Leistungsdichte
- Kompaktes Design
- Lötverbindungstechnik

Mechanical Features
- 2.5 kV AC 1min insulation
- Al_2O_3 substrate with low thermal resistance
- High power density
- Compact design
- Solder contact technology

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

Vorläufige Daten
Preliminary Data

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_H = 110°C, $T_{vj\,max}$ = 175°C	I_{CDC}	15		A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	t_P = 1 ms	I_{CRM}	30		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 = 15 A, V_{GE} = 15 V 	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	$V_{CE\,sat}$		1,60 1,74 1,82	t.b.d.	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 0,553 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	5,15	5,80	6,45	V
Gateladung Gate charge	V_{GE} = -15 / 15 V, V_{CE} = 600 V		Q_G		0,234		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		0,0		Ω
Eingangskapazität Input capacitance	f = 100 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		2,82		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 100 kHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		0,0099		nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	V_{CE} = 1200 V, V_{GE} = 0 V, T_{vj} = 25°C		I_{CES}			0,003	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 = 15 A, V_{CE} = 600 V V_{GE} = -15 / 15 V R_{Gon} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	$t_{d\,on}$		0,023 0,025 0,026		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 15 A, V_{CE} = 600 V V_{GE} = -15 / 15 V R_{Gon} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	t_r		0,012 0,015 0,016		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 15 A, V_{CE} = 600 V V_{GE} = -15 / 15 V R_{Goff} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	$t_{d\,off}$		0,18 0,275 0,31		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 15 A, V_{CE} = 600 V V_{GE} = -15 / 15 V R_{Goff} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	t_f		0,23 0,36 0,42		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 15 A, V_{CE} = 600 V, Lσ = 35 nH di/dt = 750 A/µs (T_{vj} = 175°C) V_{GE} = -15 / 15 V, R_{Gon} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	E_{on}		0,87 1,21 1,45		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 15 A, V_{CE} = 600 V, Lσ = 35 nH du/dt = 2400 V/µs (T_{vj} = 175°C) V_{GE} = -15 / 15 V, R_{Goff} = 7,5 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 175°C	E_{off}		1,24 1,90 2,25		mJ mJ mJ
Kurzschlußverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 800 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt	t_P ≤ 8 µs, T_{vj} = 150°C t_P ≤ 7 µs, T_{vj} = 175°C	I_{SC}		48 45		A A
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro IGBT / per IGBT		R_{thJH}		1,80		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		175	°C