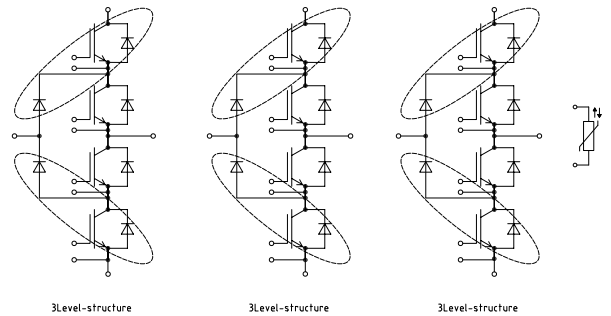
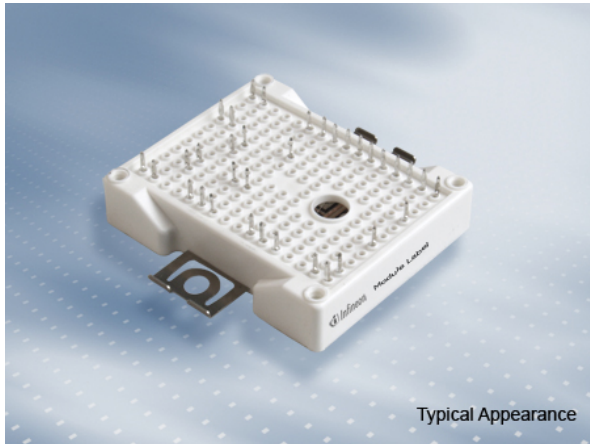


EasyPACK™ Modul mit TRENCHSTOP™ 5 H5 und CoolSiC™ Schottky Diode und PressFIT / NTC
 EasyPACK™ module with TRENCHSTOP™ 5 H5 and CoolSiC™ Schottky diode and PressFIT / NTC



$V_{CES} = 650V$
 $I_{C\ nom} = 40A / I_{CRM} = 80A$

Potentielle Anwendungen

- 3-Level-Applikationen
- Motorantriebe
- Solar Anwendungen
- USV-Systeme

Elektrische Eigenschaften

- CoolSiC™ Schottky Diode Gen 5
- Erhöhte Sperrspannungsfestigkeit auf 650V
- Niedrige Schaltverluste

Mechanische Eigenschaften

- Al₂O₃ Substrat mit kleinem thermischen Widerstand
- Kompaktes Design
- PressFIT Verbindungstechnik
- Robuste Montage durch integrierte Befestigungsklammern

Potential Applications

- 3-level-applications
- Motor drives
- Solar applications
- UPS systems

Electrical Features

- CoolSiC™ Schottky diode gen 5
- Increased blocking voltage capability up to 650V
- Low switching losses

Mechanical Features

- Al₂O₃ substrate with low thermal resistance
- Compact design
- PressFIT contact technology
- Rugged mounting due to integrated mounting clamps

Module Label Code

Barcode Code 128



DMX - Code



Content of the 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	$T_{vj} = 25^{\circ}\text{C}$	V_{CES}	650	V
Implementierter Kollektor-Strom Implemented collector current		I_{CN}	40	A
Kollektor-Dauergleichstrom Continuous DC collector current	$T_H = 65^{\circ}\text{C}, T_{vj\max} = 175^{\circ}\text{C}$	I_{CDC}	20	A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	$t_p = 1\text{ ms}$	I_{CRM}	80	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	$I_C = 20\text{ A}$ $V_{GE} = 15\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	$V_{CE\text{ sat}}$	1,40 1,46 1,50	1,81 V V V
Gate-Schwellenspannung Gate threshold voltage	$I_C = 0,35\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$		V_{GETH}	3,25 4,00 4,75	V
Gateladung Gate charge	$V_{GE} = -15 / 15\text{ V}, V_{CE} = 300\text{ V}$		Q_G	0,165	μC
Interner Gatewiderstand Internal gate resistor	$T_{vj} = 25^{\circ}\text{C}$		R_{Gint}	0,0	Ω
Eingangskapazität Input capacitance	$f = 1000\text{ kHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{ies}	2,00	nF
Rückwirkungskapazität Reverse transfer capacitance	$f = 1000\text{ kHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{res}	0,008	nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	$V_{CE} = 650\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{CES}	0,018	mA
Gate-Emitter-Reststrom Gate-emitter leakage current	$V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{GES}	100	nA
Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Gon} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_{don}	0,019 0,02 0,02	μs μs μs
Anstiegszeit, induktive Last Rise time, inductive load	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Gon} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_r	0,008 0,008 0,008	μs μs μs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Goff} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_{doff}	0,09 0,11 0,11	μs μs μs
Fallzeit, induktive Last Fall time, inductive load	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}$ $V_{GE} = -15 / 15\text{ V}$ $R_{Goff} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	t_f	0,014 0,022 0,024	μs μs μs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}, L_{\sigma} = 35\text{ nH}$ $di/dt = 1000\text{ A}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$ $V_{GE} = -15 / 15\text{ V}, R_{Gon} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{on}	0,32 0,44 0,47	mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	$I_C = 20\text{ A}, V_{CE} = 300\text{ V}, L_{\sigma} = 35\text{ nH}$ $du/dt = 5600\text{ V}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$ $V_{GE} = -15 / 15\text{ V}, R_{Goff} = 7,5\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 150^{\circ}\text{C}$	E_{off}	0,10 0,15 0,16	mJ mJ mJ
Kurzschlußverhalten SC data	$V_{GE} \leq 15\text{ V}, V_{CC} = 360\text{ V}$ $V_{CE\max} = V_{CES} - L_{SCE} \cdot di/dt$ $t_p \leq 0\ \mu\text{s}, T_{vj} = 150^{\circ}\text{C}$		I_{SC}	180	A
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro IGBT / per IGBT		R_{thJH}	2,12	K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\text{ op}}$	-40	150 $^{\circ}\text{C}$