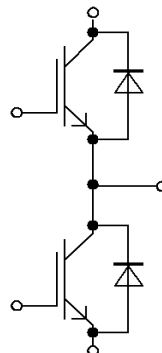
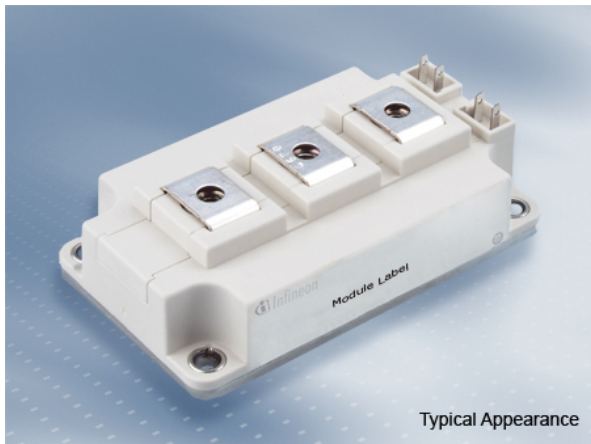


62mm C-Serien Modul mit schnellem IGBT2 für hochfrequentes Schalten
62mm C-Series module with the fast IGBT2 for high-frequency switching



$V_{CES} = 1200V$
 $I_{C\ nom} = 150A / I_{CRM} = 300A$

Typische Anwendungen

- Anwendungen mit hohen Schaltfrequenzen
- Medizinische Anwendungen
- Motorantriebe
- Anwendungen für Resonanz Umrichter
- Servoumrichter
- USV-Systeme

Elektrische Eigenschaften

- Hohe Kurzschlussrobustheit, selbstlimitierender Kurzschlussstrom
- Niedrige Schaltverluste
- Sehr große Robustheit
- V_{CESat} mit positivem Temperaturkoeffizienten

Mechanische Eigenschaften

- Gehäuse mit CTI > 400
- Große Luft- und Kriechstrecken
- Isolierte Bodenplatte
- Kupferbodenplatte
- Standardgehäuse

Typical Applications

- High Frequency Switching Application
- Medical Applications
- Motor Drives
- Resonant Inverter Applications
- Servo Drives
- UPS Systems

Electrical Features

- High Short Circuit Capability, Self Limiting Short Circuit Current
- Low Switching Losses
- Unbeatable Robustness
- V_{CESat} with positive Temperature Coefficient

Mechanical Features

- Package with CTI > 400
- High Creepage and Clearance Distances
- Isolated Base Plate
- Copper Base Plate
- Standard Housing

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

prepared by: MB	date of publication: 2013-10-02	
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IGBT, Wechselrichter / IGBT, Inverter

Höchstzulässige Werte / Maximum Rated Values

Kollektor-Emitter-Sperrspannung Collector-emitter voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{CES}	1200	V
Kollektor-Dauergleichstrom Continuous DC collector current	$T_C = 75^{\circ}\text{C}, T_{vj\text{max}} = 150^{\circ}\text{C}$ $T_C = 25^{\circ}\text{C}, T_{vj\text{max}} = 150^{\circ}\text{C}$	$I_{C\text{nom}}$ I_C	150 225	A A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	$t_P = 1\text{ ms}$	I_{CRM}	300	A
Gesamt-Verlustleistung Total power dissipation	$T_C = 25^{\circ}\text{C}, T_{vj\text{max}} = 150$	P_{tot}	1250	W
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	$I_C = 150\text{ A}, V_{GE} = 15\text{ V}$ $I_C = 150\text{ A}, V_{GE} = 15\text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$V_{CE\text{sat}}$	3,20 3,85	3,70	V V	
Gate-Schwellenspannung Gate threshold voltage	$I_C = 6,00\text{ mA}, V_{CE} = V_{GE}, T_{vj} = 25^{\circ}\text{C}$		$V_{G\text{Eth}}$	4,5	5,5	6,5	V
Gateladung Gate charge	$V_{GE} = -15\text{ V} \dots +15\text{ V}$		Q_G	1,60		μC	
Interner Gatewiderstand Internal gate resistor	$T_{vj} = 25^{\circ}\text{C}$		$R_{G\text{int}}$	2,5		Ω	
Eingangskapazität Input capacitance	$f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{ies}	11,0		nF	
Rückwirkungskapazität Reverse transfer capacitance	$f = 1\text{ MHz}, T_{vj} = 25^{\circ}\text{C}, V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}$		C_{res}	0,50		nF	
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	$V_{CE} = 1200\text{ V}, V_{GE} = 0\text{ V}, T_{vj} = 25^{\circ}\text{C}$		I_{CES}		5,0	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}		400	nA	
Einschaltverzögerungszeit, induktive Last Turn-on delay time, inductive load	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$t_{d\text{on}}$	0,10 0,11		μs μs	
Anstiegszeit, induktive Last Rise time, inductive load	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	t_r	0,06 0,07		μs μs	
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	$t_{d\text{off}}$	0,53 0,55		μs μs	
Fallzeit, induktive Last Fall time, inductive load	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	t_f	0,03 0,04		μs μs	
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}, L_S = 60\text{ nH}$ $V_{GE} = \pm 15\text{ V}, di/dt = 1500\text{ A}/\mu\text{s}$ $R_{G\text{on}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	E_{on}	14,5		mJ mJ	
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	$I_C = 150\text{ A}, V_{CE} = 600\text{ V}, L_S = 60\text{ nH}$ $V_{GE} = \pm 15\text{ V}$ $R_{G\text{off}} = 6,8\ \Omega$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	E_{off}	11,0		mJ mJ	
Kurzschlußverhalten SC data	$V_{GE} \leq 15\text{ V}, V_{CC} = 900\text{ V}$ $V_{CE\text{max}} = V_{CES} - L_{SCE} \cdot di/dt$	$t_P \leq 10\ \mu\text{s}, T_{vj} = 125^{\circ}\text{C}$	I_{SC}	950		A	
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT		R_{thJC}		0,10	K/W	
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro IGBT / per IGBT $\lambda_{\text{Paste}} = 1\text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{\text{grease}} = 1\text{ W}/(\text{m}\cdot\text{K})$		R_{thCH}	0,03		K/W	
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\text{op}}$	-40	125	$^{\circ}\text{C}$	

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