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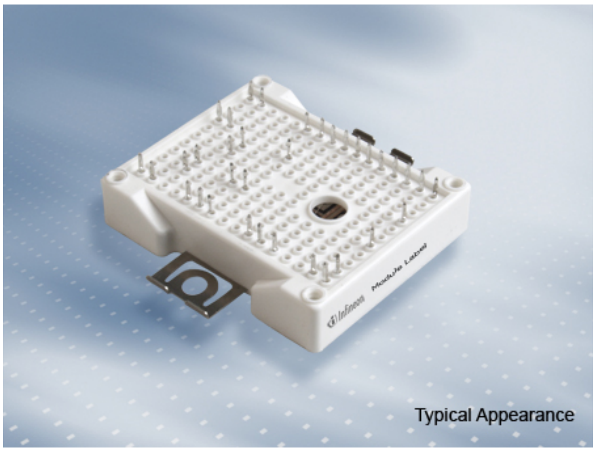
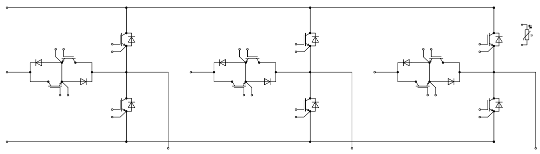
Vorläufige Daten / Preliminary Data



Typical Appearance



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

Typische Anwendungen
- 3-Level-Applikationen
- Solar Anwendungen

Typical Applications
- 3-Level-Applications
- Solar Applications

Elektrische Eigenschaften
- Niederinduktives Design
- Niedrige Schaltverluste
- Niedriges V_{CEsat}

Electrical Features
- Low inductive design
- Low Switching Losses
- Low V_{CEsat}

Mechanische Eigenschaften
- Al_2O_3 Substrat mit kleinem thermischen Widerstand
- Kompaktes Design
- PressFIT Verbindungstechnik
- Robuste Montage durch integrierte Befestigungsklammern

Mechanical Features
- Al_2O_3 Substrate with Low Thermal Resistance
- Compact design
- PressFIT Contact Technology
- Rugged mounting due to integrated mounting clamps

Module Label Code

Barcode Code 128

00000123456000000000000

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: CM	date of publication: 2013-11-25	
approved by: MB	revision: 2.0	UL approved (E83335)

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_C = 100°C, $T_{vj\,max}$ = 175°C T_C = 25°C, $T_{vj\,max}$ = 175°C	$I_{C\,nom}$ I_C	15 20	A A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	t_P = 1 ms	I_{CRM}	30	A
Gesamt-Verlustleistung Total power dissipation	T_C = 25°C, $T_{vj\,max}$ = 175°C	P_{tot}	145	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 = 15 A, V_{GE} = 15 V I_C = 15 A, V_{GE} = 15 V I_C = 15 A, V_{GE} = 15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$V_{CE\,sat}$		2,05 2,50 2,60	2,40	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 0,50 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	5,0	5,8	6,5	V
Gateladung Gate charge	V_{GE} = -15 V ... +15 V		Q_G		0,075		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		0,0		Ω
Eingangskapazität Input capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		0,875		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		0,045		nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	V_{CE} = 1200 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 = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Gon} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,04 0,04 0,04		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Gon} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,025 0,026 0,027		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Goff} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		0,27 0,31 0,32		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Goff} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_f		0,02 0,03 0,035		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 15 A, V_{CE} = 350 V, L_S = 30 nH V_{GE} = 15 V, di/dt = 700 A/µs (T_{vj} = 150°C) R_{Gon} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		0,40 0,60 0,64		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 15 A, V_{CE} = 350 V, L_S = 30 nH V_{GE} = 15 V, du/dt = 2800 V/µs (T_{vj} = 150°C) R_{Goff} = 35 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		0,37 0,53 0,54		mJ mJ mJ
Kurzschlußverhalten SC data	$V_{GE} \leq$ 15 V, V_{CC} = 800 V V_{CEmax} = V_{CES} $-L_{sCE} \cdot di/dt$	$t_P \leq$ 10 µs, T_{vj} = 150°C	I_{SC}		48		A
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT		R_{thJC}		0,95	1,05	K/W
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}		0,80		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

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Vorläufige Daten
Preliminary Data

Diode, Wechselrichter / Diode, Inverter

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrspannung Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	1200	V
Dauergleichstrom Continuous DC forward current		I_F	15	A
Periodischer Spitzenstrom Repetitive peak forward current	t_P = 1 ms	I_{FRM}	50	A
Grenzlastintegral I²t - value	V_R = 0 V, t_P = 10 ms, T_{vj} = 125°C V_R = 0 V, t_P = 10 ms, T_{vj} = 150°C	I^2t	40,0 34,0	A²s A²s

Charakteristische Werte / Characteristic Values

				min.	typ.	max.	
Durchlassspannung Forward voltage	I_F = 15 A, V_{GE} = 0 V I_F = 15 A, V_{GE} = 0 V I_F = 15 A, V_{GE} = 0 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	V_F		1,75 1,75 1,75	2,15	V V V
Rückstromspitze Peak reverse recovery current	I_F = 15 A, - di_F/dt = 1300 A/µs (T_{vj}=150°C) V_R = 350 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	I_{RM}		36,0 38,0 38,0		A A A
Sperrverzögerungsladung Recovered charge	I_F = 15 A, - di_F/dt = 1300 A/µs (T_{vj}=150°C) V_R = 350 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	Q_r		1,05 2,10 2,40		µC µC µC
Abschaltenergie pro Puls Reverse recovery energy	I_F = 15 A, - di_F/dt = 1300 A/µs (T_{vj}=150°C) V_R = 350 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{rec}		0,40 0,66 0,70		mJ mJ mJ
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro Diode / per diode		R_{thJC}		1,30	1,45	K/W
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro Diode / per diode λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		1,05		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

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Vorläufige Daten
Preliminary Data

IGBT,3-Level / IGBT,3-Level

Höchstzulässige Werte / Maximum Rated Values

Kollektor-Emitter-Sperrspannung Collector-emitter voltage	T_{vj} = 25°C	V_{CES}	650	V
Implementierter Kollektor-Strom Implemented collector current		I_{CN}	30	A
Kollektor-Dauergleichstrom Continuous DC collector current	T_C = 100°C, $T_{vj\,max}$ = 175°C T_C = 25°C, $T_{vj\,max}$ = 175°C	$I_{C\,nom}$ I_C	15 25	A A
Periodischer Kollektor-Spitzenstrom Repetitive peak collector current	t_P = 1 ms	I_{CRM}	60	A
Gesamt-Verlustleistung Total power dissipation	T_C = 25°C, $T_{vj\,max}$ = 175°C	P_{tot}	150	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 = 15 A, V_{GE} = 15 V I_C = 15 A, V_{GE} = 15 V I_C = 15 A, V_{GE} = 15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$V_{CE\,sat}$		1,20 1,25 1,25	1,45	V V V
Gate-Schwellenspannung Gate threshold voltage	I_C = 0,30 mA, V_{CE} = V_{GE}, T_{vj} = 25°C		V_{GEth}	4,9	5,8	6,5	V
Gateladung Gate charge	V_{GE} = -15 V ... +15 V		Q_G		0,30		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		0,0		Ω
Eingangskapazität Input capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		1,65		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		0,051		nF
Kollektor-Emitter-Reststrom Collector-emitter cut-off current	V_{CE} = 650 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 = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,035 0,035 0,035		µs µs µs
Anstiegszeit, induktive Last Rise time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,01 0,012 0,013		µs µs µs
Abschaltverzögerungszeit, induktive Last Turn-off delay time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Goff} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		0,34 0,38 0,39		µs µs µs
Fallzeit, induktive Last Fall time, inductive load	I_C = 15 A, V_{CE} = 350 V V_{GE} = 15 V R_{Goff} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_f		0,045 0,07 0,075		µs µs µs
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_C = 15 A, V_{CE} = 350 V, L_S = 40 nH V_{GE} = 15 V, di/dt = 1300 A/µs (T_{vj} = 150°C) R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		0,19 0,26 0,28		mJ mJ mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_C = 15 A, V_{CE} = 350 V, L_S = 40 nH V_{GE} = 15 V, du/dt = 2600 V/µs (T_{vj} = 150°C) R_{Goff} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		0,47 0,60 0,64		mJ mJ mJ
Kurzschlußverhalten SC data	V_{GE} ≤ 15 V, V_{CC} = 360 V V_{CEmax} = V_{CES} -L_{sCE} ·di/dt	t_P ≤ 8 µs, T_{vj} = 25°C t_P ≤ 6 µs, T_{vj} = 150°C	I_{SC}		210 150		A A
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro IGBT / per IGBT		R_{thJC}		0,90	1,00	K/W

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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}		0,85		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\ op}$	-40		150	°C

Diode, 3-Level / Diode, 3-Level

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrspannung Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	650	V
Dauergleichstrom Continuous DC forward current		I_F	15	A
Periodischer Spitzenstrom Repetitive peak forward current	t_P = 1 ms	I_{FRM}	30	A
Grenzlastintegral I^2t - value	V_R = 0 V, t_P = 10 ms, T_{vj} = 125°C V_R = 0 V, t_P = 10 ms, T_{vj} = 150°C	I^2t	32,0 28,0	A^2s A^2s

Charakteristische Werte / Characteristic Values

				min.	typ.	max.	
Durchlassspannung Forward voltage	I_F = 15 A, V_{GE} = 0 V I_F = 15 A, V_{GE} = 0 V I_F = 15 A, V_{GE} = 0 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	V_F		1,45 1,35 1,30	t.b.d.	V V V
Rückstromspitze Peak reverse recovery current	I_F = 15 A, - di_F/dt = 700 A/µs (T_{vj}=150°C) V_R = 350 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	I_{RM}		13,0 15,0 16,0		A A A
Sperrverzögerungsladung Recovered charge	I_F = 15 A, - di_F/dt = 700 A/µs (T_{vj}=150°C) V_R = 350 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	Q_r		0,60 1,00 1,15		µC µC µC
Abschaltenergie pro Puls Reverse recovery energy	I_F = 15 A, - di_F/dt = 700 A/µs (T_{vj}=150°C) V_R = 350 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{rec}		0,12 0,18 0,22		mJ mJ mJ
Wärmewiderstand, Chip bis Gehäuse Thermal resistance, junction to case	pro Diode / per diode		R_{thJC}		1,95	2,15	K/W
Wärmewiderstand, Gehäuse bis Kühlkörper Thermal resistance, case to heatsink	pro Diode / per diode λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		1,35		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\ op}$	-40		150	°C

NTC-Widerstand / NTC-Thermistor

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Nennwiderstand Rated resistance	T_C = 25°C	R_{25}		5,00		kΩ
Abweichung von R100 Deviation of R100	T_C = 100°C, R_{100} = 493 Ω	ΔR/R	-5		5	%
Verlustleistung Power dissipation	T_C = 25°C	P_{25}			20,0	mW
B-Wert B-value	$R_2 = R_{25}\ exp\ [B_{25/50}(1/T_2 - 1/(298,15\ K))]$	$B_{25/50}$		3375		K
B-Wert B-value	$R_2 = R_{25}\ exp\ [B_{25/80}(1/T_2 - 1/(298,15\ K))]$	$B_{25/80}$		3411		K
B-Wert B-value	$R_2 = R_{25}\ exp\ [B_{25/100}(1/T_2 - 1/(298,15\ K))]$	$B_{25/100}$		3433		K

Angaben gemäß gültiger Application Note.
Specification according to the valid application note.

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Vorläufige Daten
Preliminary Data

Modul / Module

Isolations-Prüfspannung Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}		2,5		kV
Innere Isolation Internal isolation	Basisisolierung (Schutzklasse 1, EN61140) basic insulation (class 1, IEC 61140)			Al_2O_3		
Kriechstrecke Creepage distance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			13,5 7,5		mm
Luftstrecke Clearance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			12,0 7,5		mm
Vergleichszahl der Kriechwegbildung Comperative tracking index		CTI		> 200		
			min.	typ.	max.	
Modulstreuinduktivität Stray inductance module		L_{sCE}		25		nH
Lagertemperatur Storage temperature		T_{stg}	-40		125	°C
Anpresskraft für mech. Bef. pro Feder mountig force per clamp		F	40	-	80	N
Gewicht Weight		G		36		g

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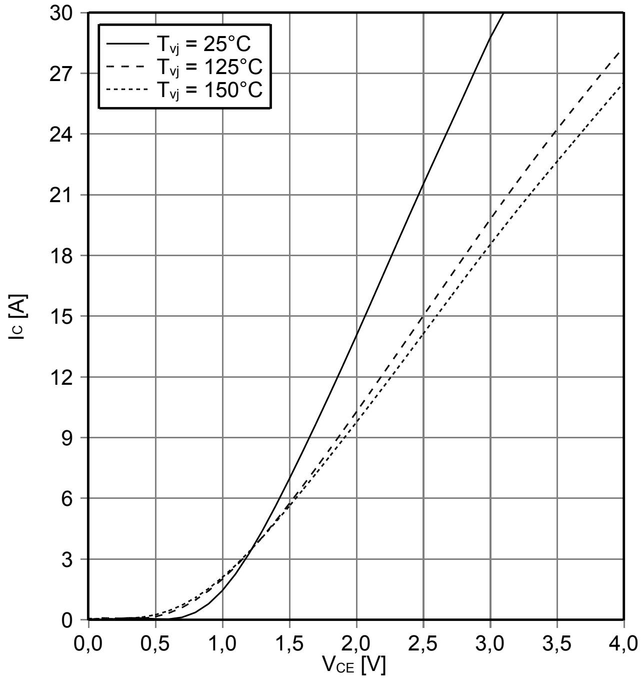
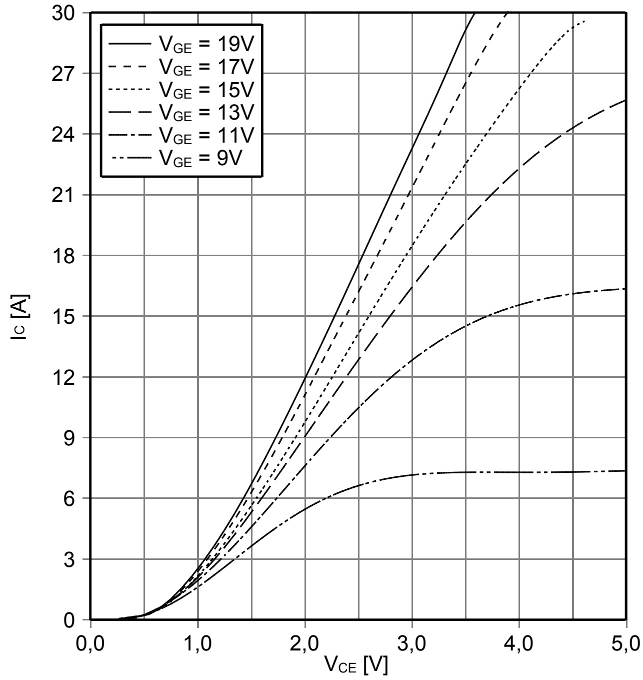
Vorläufige Daten
Preliminary Data

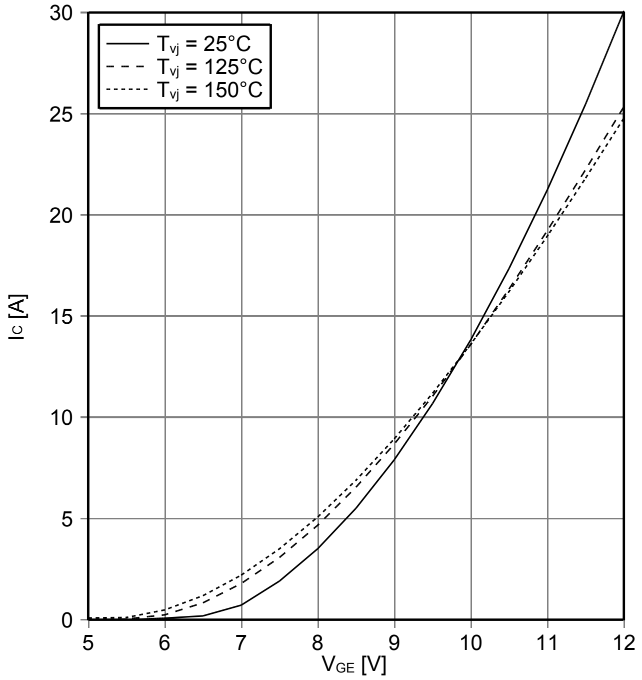
Ausgangskennlinie IGBT,Wechselrichter (typisch)
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
$V_{GE} = 15$ V



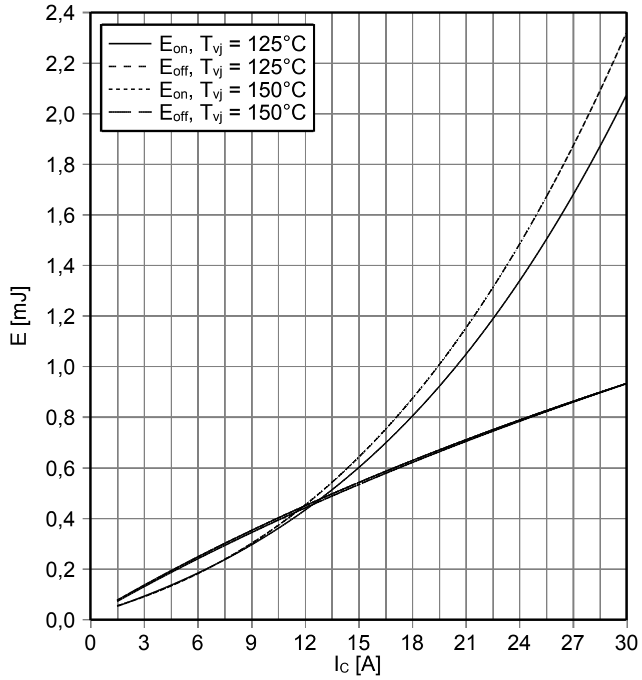
Ausgangskennlinienfeld IGBT,Wechselrichter (typisch)
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
$T_{vj} = 150°C$



Übertragungscharakteristik IGBT,Wechselrichter (typisch)
transfer characteristic IGBT,Inverter (typical)
$I_C = f(V_{GE})$
$V_{CE} = 20$ V



Schaltverluste IGBT,Wechselrichter (typisch)
switching losses IGBT,Inverter (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
$V_{GE} = \pm 15$ V, $R_{Gon} = 35\ \Omega$, $R_{Goff} = 35\ \Omega$, $V_{CE} = 350$ V



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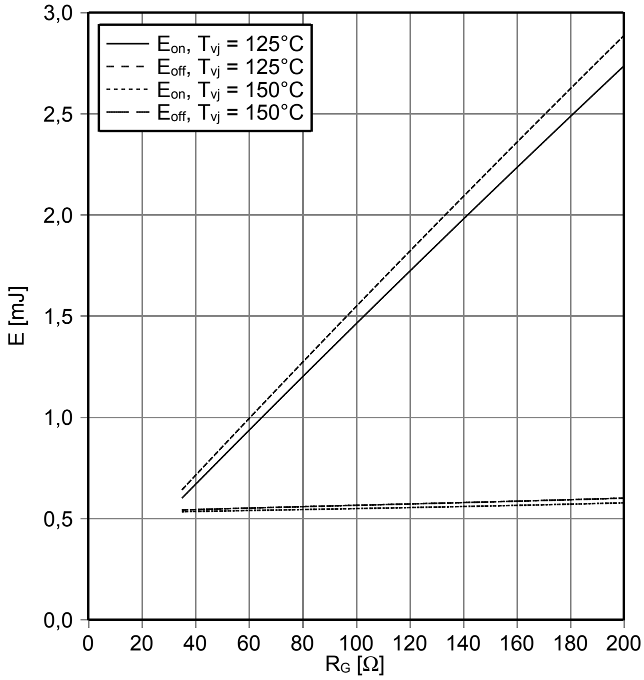
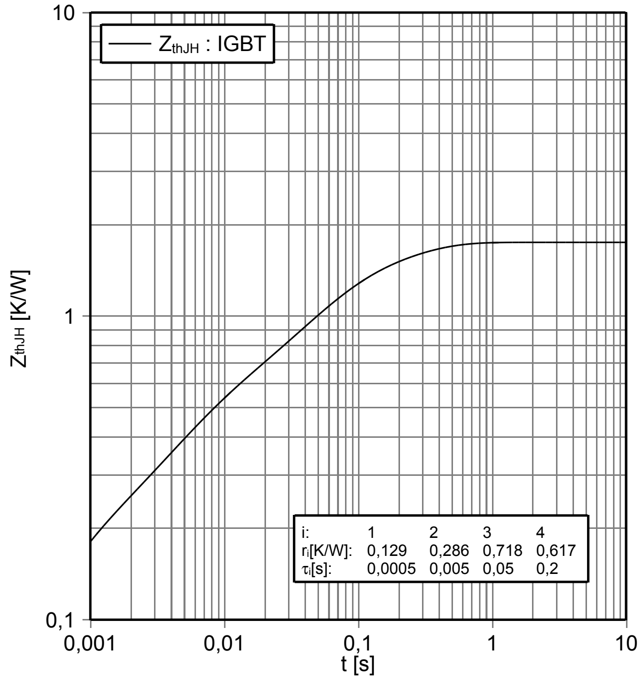
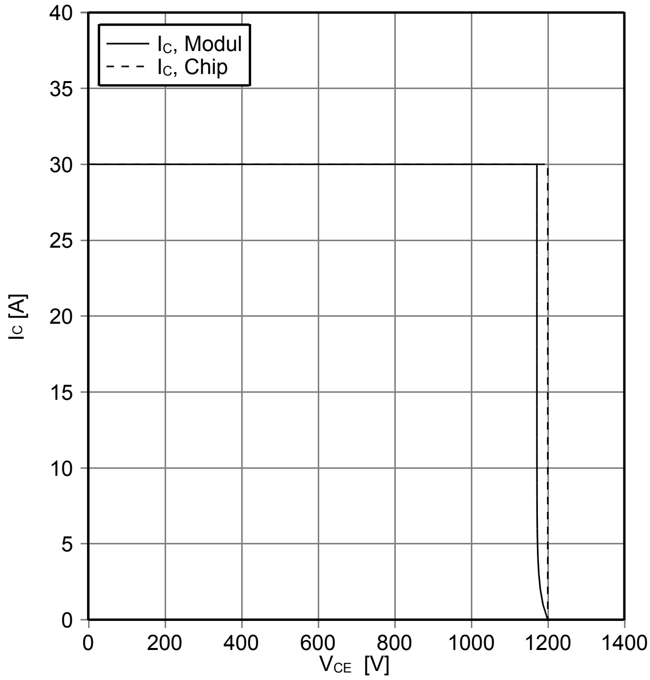
Schaltverluste IGBT,Wechselrichter (typisch)
switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
$V_{GE} = \pm 15$ V, $I_C = 15$ A, $V_{CE} = 350$ V



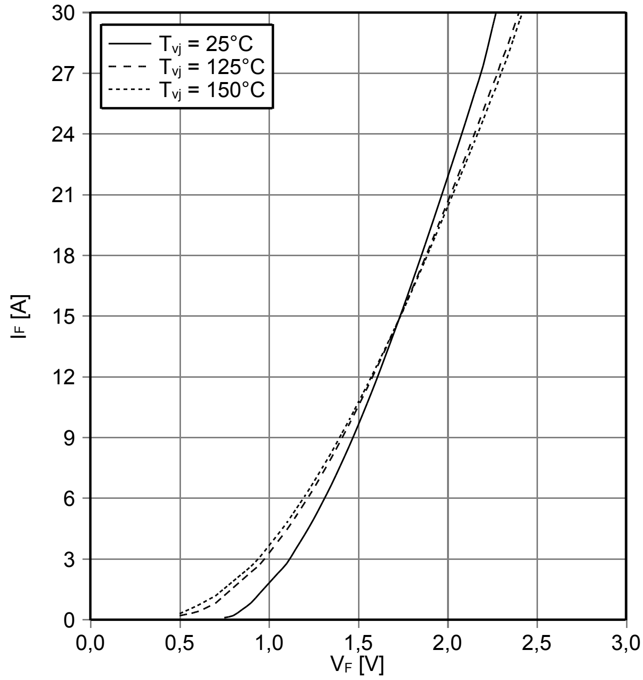
Transienter Wärmewiderstand IGBT,Wechselrichter
transient thermal impedance IGBT,Inverter
$Z_{thJH} = f(t)$



Sicherer Rückwärts-Arbeitsbereich IGBT,Wechselrichter (RBSOA)
reverse bias safe operating area IGBT,Inverter (RBSOA)
$I_C = f(V_{CE})$
$V_{GE} = \pm 15$ V, $R_{Goff} = 35$ Ω, $T_{vj} = 150$°C



Durchlasskennlinie der Diode, Wechselrichter (typisch)
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



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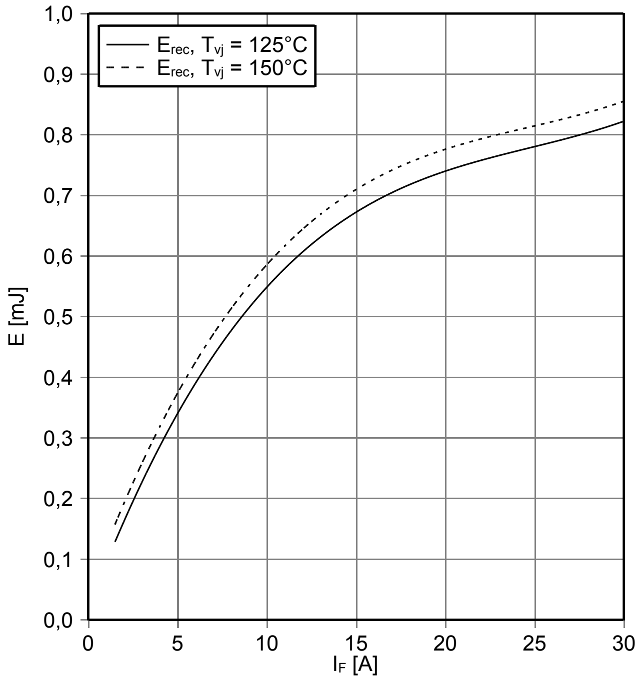
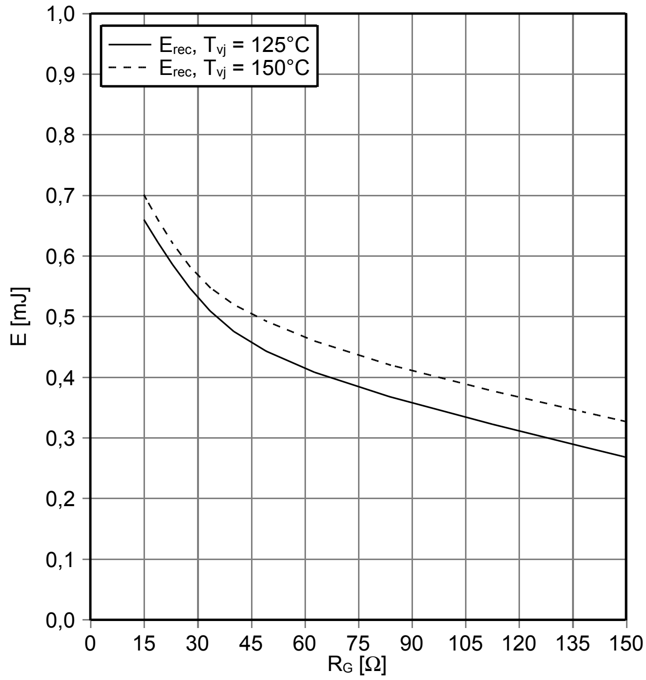
Vorläufige Daten
Preliminary Data

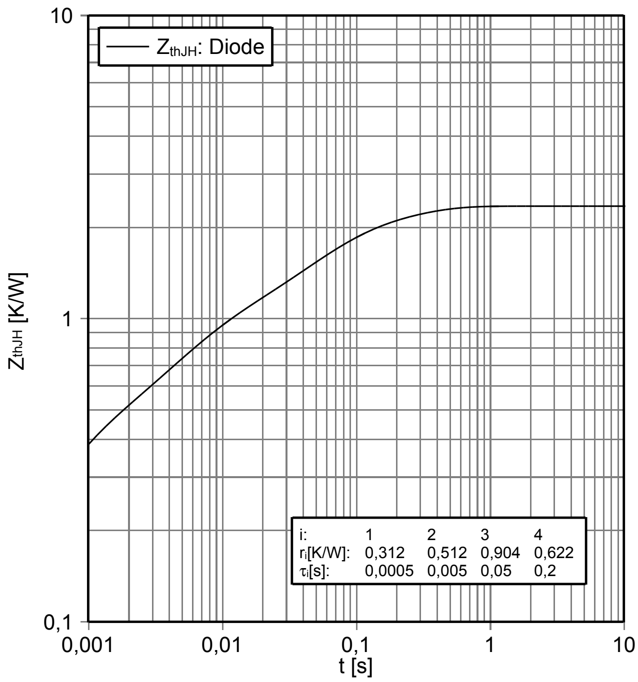
Schaltverluste Diode, Wechselrichter (typisch)
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 15\ \Omega$, $V_{CE} = 350$ V



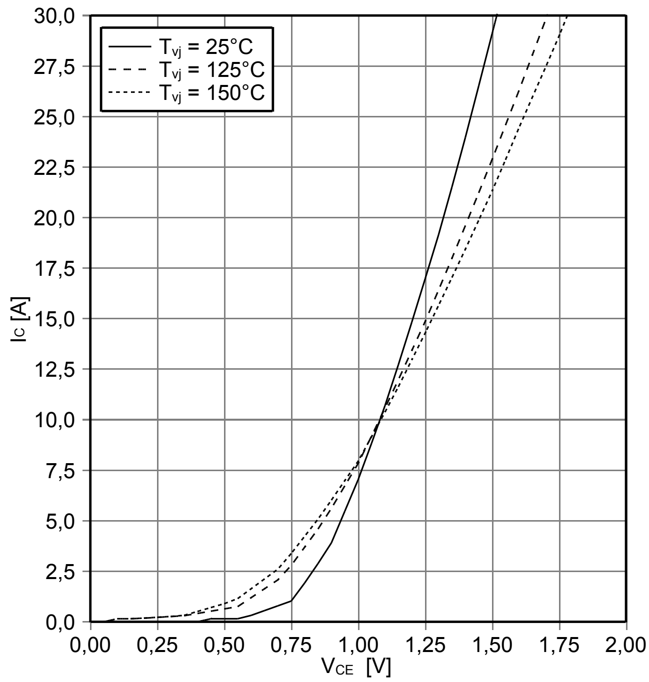
Schaltverluste Diode, Wechselrichter (typisch)
switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 15$ A, $V_{CE} = 350$ V



Transienter Wärmewiderstand Diode, Wechselrichter
transient thermal impedance Diode, Inverter
$Z_{thJH} = f(t)$



Ausgangskennlinie IGBT,3-Level (typisch)
output characteristic IGBT,3-Level (typical)
$I_C = f(V_{CE})$
$V_{GE} = 15$ V



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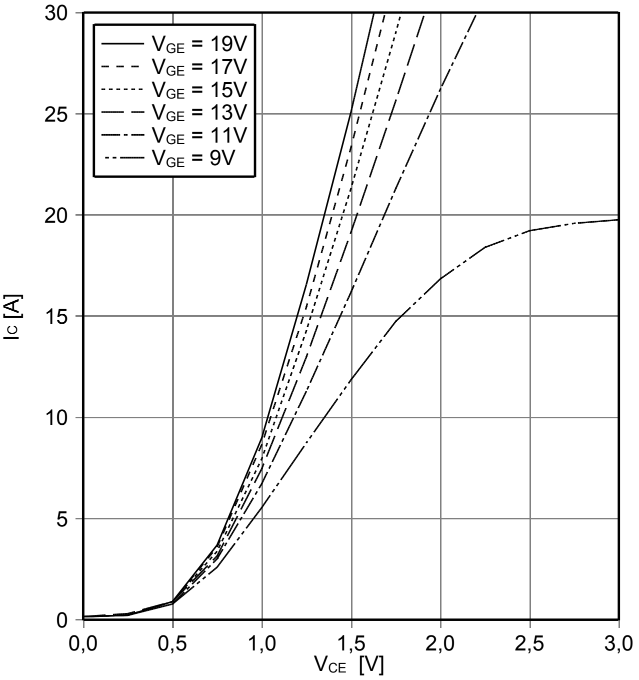
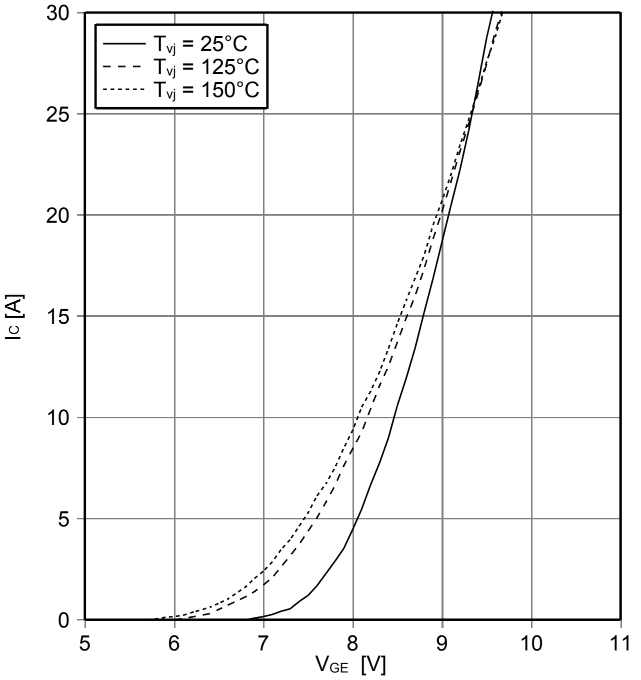
Vorläufige Daten
Preliminary Data

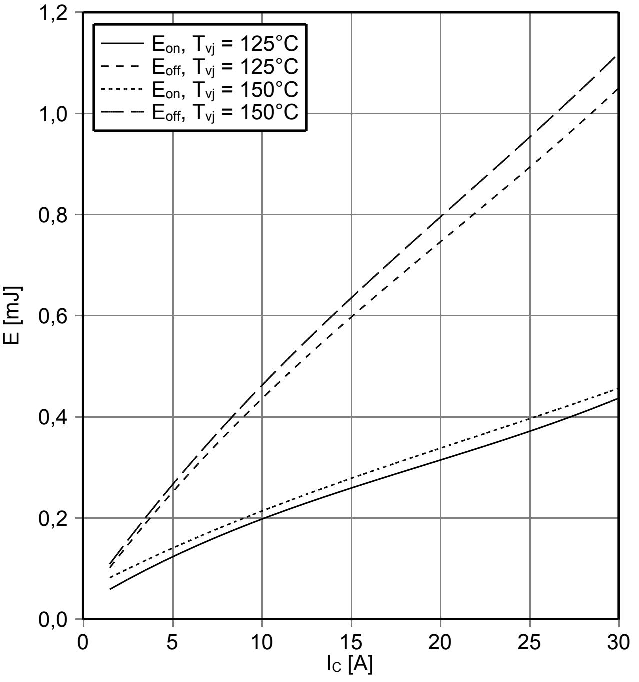
Ausgangskennlinienfeld IGBT,3-Level (typisch)
output characteristic IGBT,3-Level (typical)
$I_C = f(V_{CE})$
$T_{vj} = 150°C$



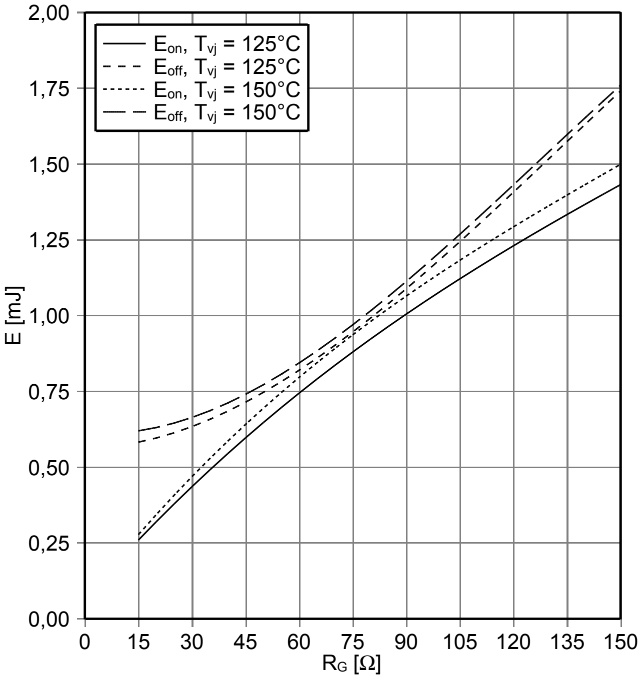
Übertragungscharakteristik IGBT,3-Level (typisch)
transfer characteristic IGBT,3-Level (typical)
$I_C = f(V_{GE})$
$V_{CE} = 20$ V



Schaltverluste IGBT,3-Level (typisch)
switching losses IGBT,3-Level (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
$V_{GE} = \pm 15$ V, $R_{Gon} = 15\ \Omega$, $R_{Goff} = 15\ \Omega$, $V_{CE} = 350$ V



Schaltverluste IGBT,3-Level (typisch)
switching losses IGBT,3-Level (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
$V_{GE} = \pm 15$ V, $I_C = 15$ A, $V_{CE} = 350$ V



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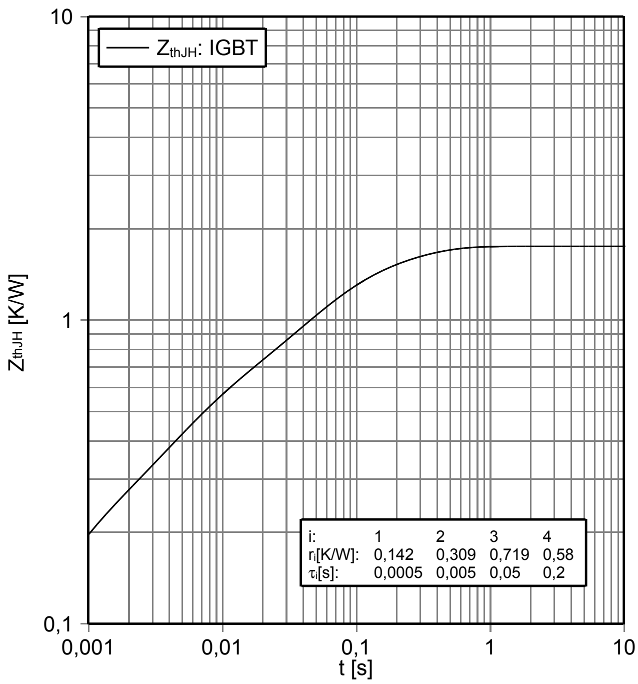
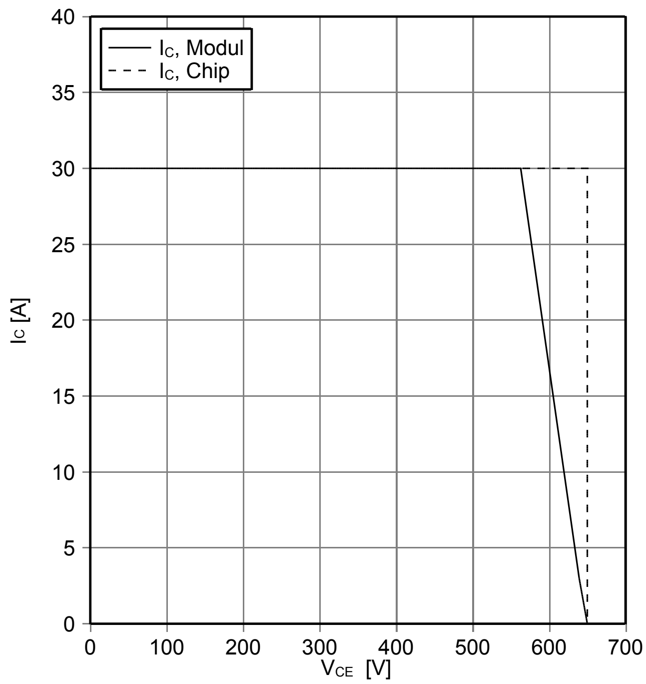
Vorläufige Daten
Preliminary Data

Transienter Wärmewiderstand IGBT,3-Level
transient thermal impedance IGBT,3-Level
$Z_{thJH} = f(t)$

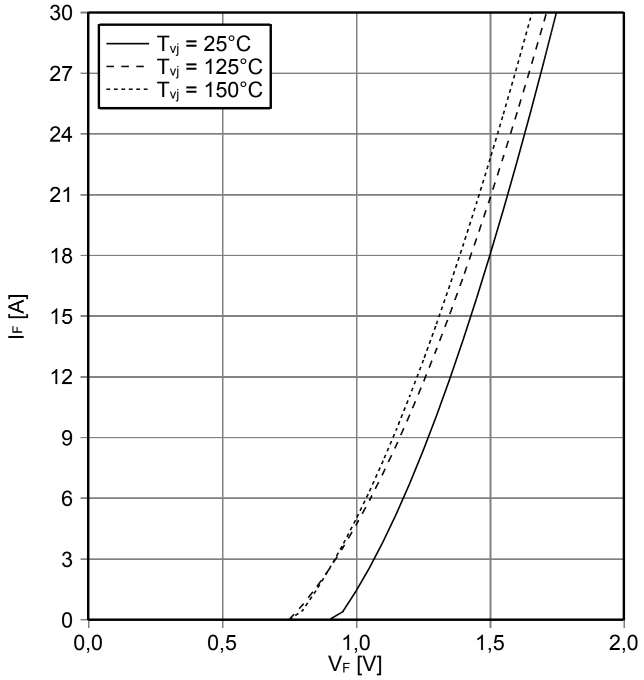


i:	1	2	3	4
r_i[K/W]:	0,142	0,309	0,719	0,58
τ_i[s]:	0,0005	0,005	0,05	0,2

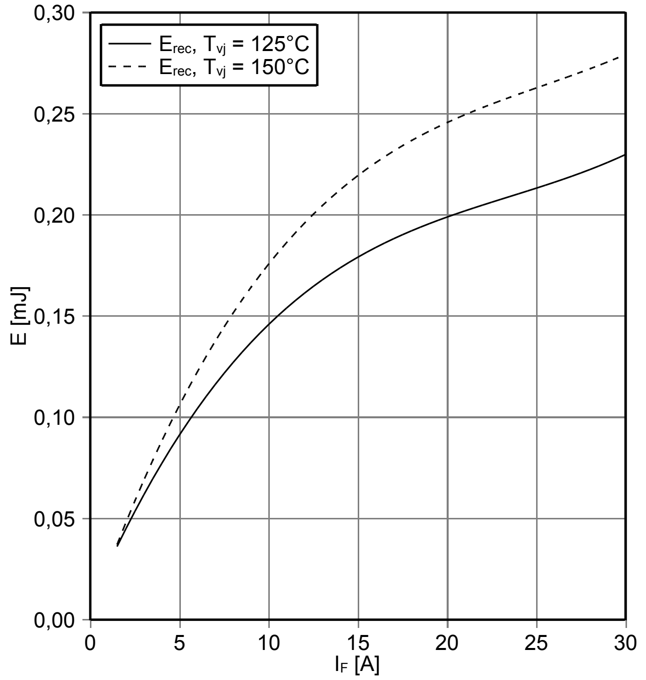
Sicherer Rückwärts-Arbeitsbereich IGBT,3-Level (RBSOA)
reverse bias safe operating area IGBT,3-Level (RBSOA)
$I_C = f(V_{CE})$
$V_{GE} = \pm 15$ V, $R_{Goff} = 15\ \Omega$, $T_{vj} = 150°C$



Durchlasskennlinie der Diode, 3-Level (typisch)
forward characteristic of Diode, 3-Level (typical)
$I_F = f(V_F)$



Schaltverluste Diode, 3-Level (typisch)
switching losses Diode, 3-Level (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 35\ \Omega$, $V_{CE} = 350$ V



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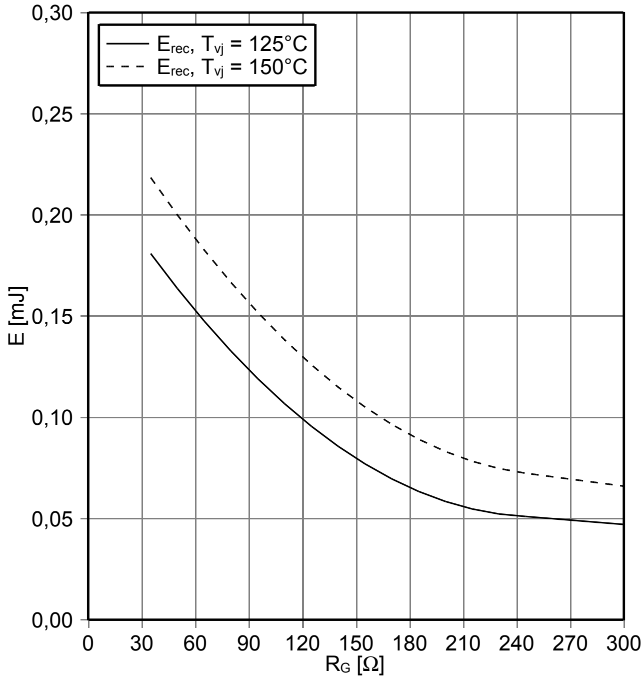
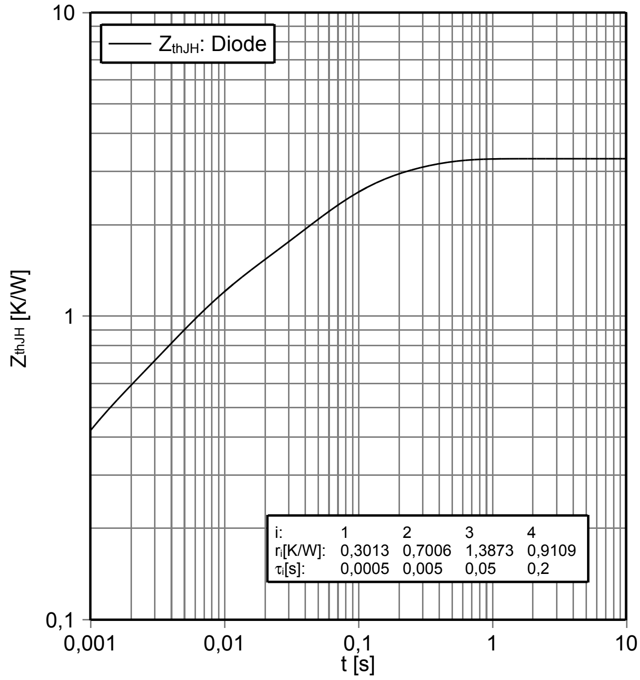
Vorläufige Daten
Preliminary Data

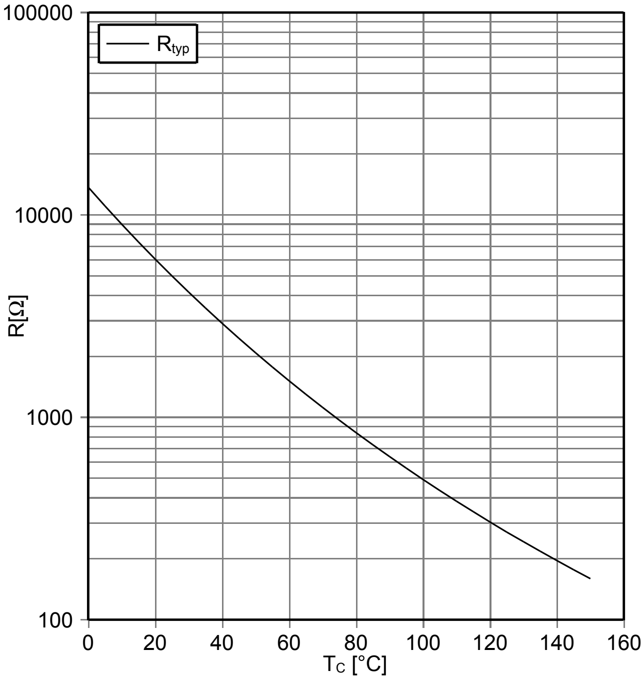
Schaltverluste Diode, 3-Level (typisch)
switching losses Diode, 3-Level (typical)
$E_{rec} = f(R_G)$
I_F = 15 A, V_{CE} = 350 V



Transienter Wärmewiderstand Diode, 3-Level
transient thermal impedance Diode, 3-Level
$Z_{thJH} = f(t)$



NTC-Widerstand-Temperaturkennlinie (typisch)
NTC-Thermistor-temperature characteristic (typical)
R = f (T)



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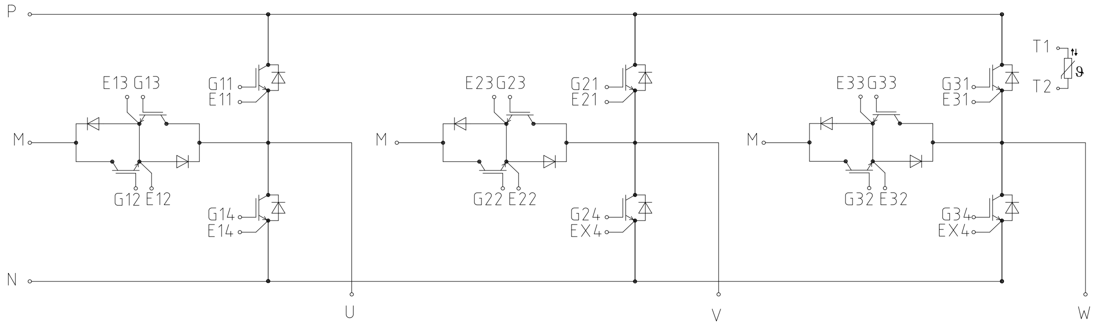
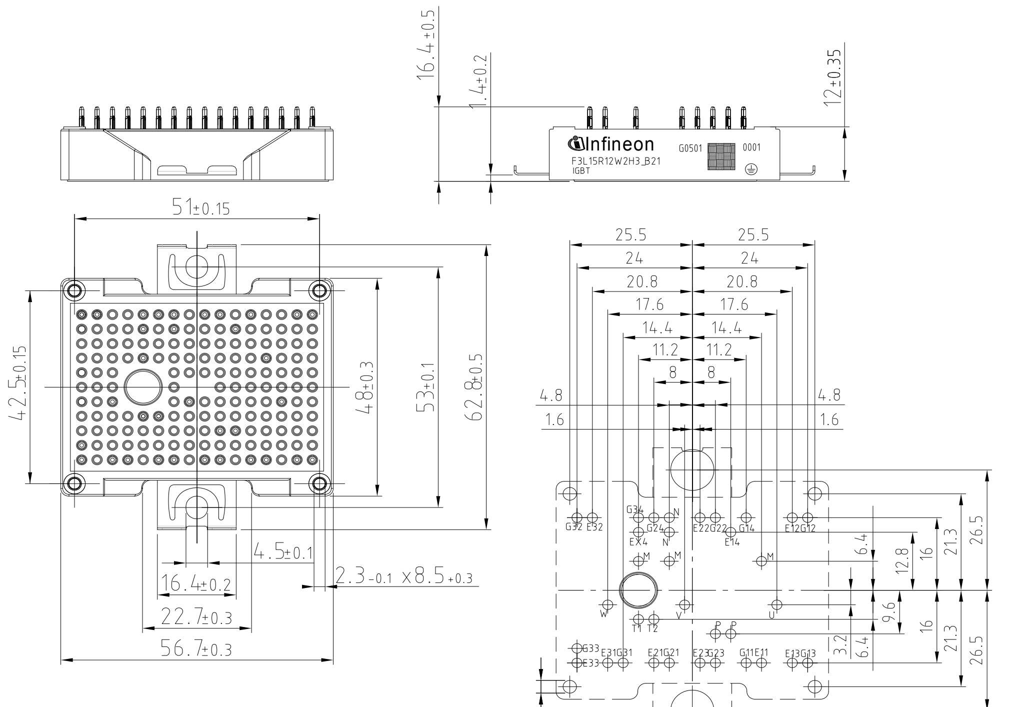
Vorläufige Daten
Preliminary Data

Schaltplan / circuit_diagram_headline



Gehäuseabmessungen / package outlines



- Pin-Grid 3.2mm
- Tolerance of PCB hole pattern ⌖ ⌀0.1
- Hole specification for contacts see AN 2009-09
- Diameters of plated holes ⌀ 1.0mm $^{+0.09}_{-0.06}$
- Diameters of drill ⌀ 1.15mm

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Vorläufige Daten
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- the conclusion of Quality Agreements;
- to establish joint measures of an ongoing product survey, and that we may make delivery depended on the realization of any such measures.

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