Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

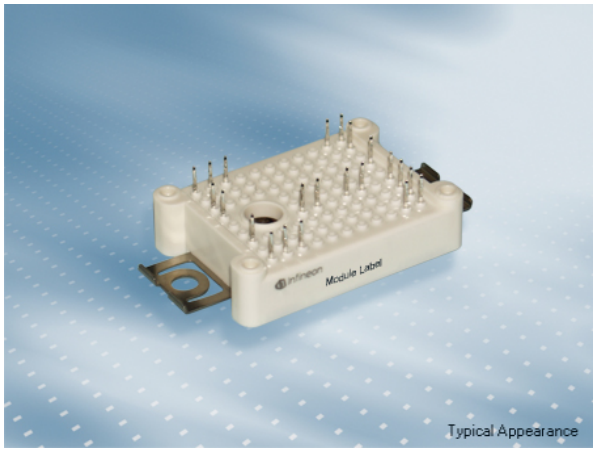
We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

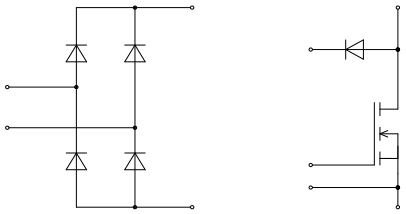
Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

DDB2U50N08W1R_B23

EasyBRIDGE Modul mit CoolMOS und PressFIT
EasyBRIDGE module with CoolMOS and PressFIT





V_{DSS} = 600V
$I_{D\ nom}$ = 50A / I_{DRM} = 100A

Typische Anwendungen
- Hilfsumrichter
- Induktives Erwärmen und Schweißen
- Klimaanlagen
- Motorantriebe

Typical Applications
- Auxiliary inverters
- Inductive heating and welding
- Air conditioning
- Motor drives

Elektrische Eigenschaften
- CoolSiC (TM) Schottky Diode Gen 5
- Niedrige Schaltverluste

Electrical Features
- CoolSiC (TM) Schottky diode gen 5
- Low switching losses

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

Sample
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

Diode, Gleichrichter / Diode, Rectifier

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrspannung Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	800	V
Durchlassstrom Grenzeffektivwert pro Chip Maximum RMS forward current per chip	T_H = 40°C	I_{FRMSM}	50	A
Gleichrichter Ausgang Grenzeffektivstrom Maximum RMS current at rectifier output	T_H = 40°C	I_{RMSM}	50	A
Stoßstrom Grenzwert Surge forward current	t_p = 10 ms, T_{vj} = 25°C t_p = 10 ms, T_{vj} = 150°C	I_{FSM}	450 360	A A
Grenzlastintegral I²t - value	t_p = 10 ms, T_{vj} = 25°C t_p = 10 ms, T_{vj} = 150°C	I²t	1000 650	A²s A²s

Charakteristische Werte / Characteristic Values

			min.	typ.	max.	
Durchlassspannung Forward voltage	T_{vj} = 150°C, I_F = 50 A	V_F		1,10		V
Sperrstrom Reverse current	T_{vj} = 150°C, V_R = 800 V	I_R		0,10		mA
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro Diode / per diode	R_{thJH}		1,90		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions		$T_{vj\,op}$	-40		150	°C

Diode, Brems-Chopper / Diode, Brake-Chopper

Höchstzulässige Werte / Maximum Rated Values

Periodische Spitzensperrspannung Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	600	V
Dauergleichstrom Continuous DC forward current		I_F	40	A
Periodischer Spitzenstrom Repetitive peak forward current	t_P = 1 ms	I_{FRM}	80	A
Grenzlastintegral I²t - value	V_R = 0 V, t_P = 10 ms, T_{vj} = 125°C	I²t	72,0	A²s

Charakteristische Werte / Characteristic Values

				min.	typ.	max.	
Durchlassspannung Forward voltage	I_F = 40 A, V_{GE} = 0 V I_F = 40 A, V_{GE} = 0 V I_F = 40 A, V_{GE} = 0 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	V_F		1,45 1,60 1,65	1,85	V V V
Rückstromspitze Peak reverse recovery current	I_F = 40 A, - di_F/dt = 900 A/µs (T_{vj}=150°C) V_R = 300 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	I_{RM}		10,0 11,0 11,0		A A A
Sperrverzögerungsladung Recovered charge	I_F = 40 A, - di_F/dt = 900 A/µs (T_{vj}=150°C) V_R = 300 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	Q_r		0,23 0,23 0,23		µC µC µC
Abschaltenergie pro Puls Reverse recovery energy	I_F = 40 A, - di_F/dt = 900 A/µs (T_{vj}=150°C) V_R = 300 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{rec}		0,02 0,02 0,02		mJ mJ mJ
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro Diode / per diode		R_{thJH}		1,08		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

MOSFET / MOSFET

Höchstzulässige Werte / Maximum Rated Values

Drain-Source-Sperrspannung Drain-source breakdown voltage	T_{vj} = 25°C	V_{DSS}	600	V
Drain-Gleichstrom DC drain current	T_H = 45°C	$I_{D\ nom}$	50	A
Gepulster Drainstrom, tp limitiert durch Tjmax Pulsed drain current, tp limited by Tjmax		$I_{D\ puls}$	100	A
Gate-Source-Spitzenspannung Gate-source peak voltage		V_{GSS}	+/-20	V

Charakteristische Werte / Characteristic Values

				min.	typ.	max.	
Einschaltwiderstand Drain-source on resistance	I_D = 50 A, V_{GS} = 10 V, T_{vj} = 25°C		$R_{DS\ on}$		20,0	33,0	mΩ
Gate-Schwellenspannung Gate threshold voltage	I_D = 6,00 mA, V_{DS} = V_{GS}, T_{vj} = 25°C		$V_{GS(th)}$	2,50	3,00	3,50	V
Gateladung Gate charge	V_{GS} = 10 V, V_{DD} = 400 V		Q_G		0,30		µC
Interner Gatewiderstand Internal gate resistor	T_{vj} = 25°C		R_{Gint}		2,7		Ω
Eingangskapazität Input capacitance	f = 1,00 MHz, T_{vj} = 25°C, V_{DS} = 25 V, V_{GS} = 0 V		C_{iss}		14,0		nF
Ausgangskapazität Output capacitance	f = 1,00 MHz, T_{vj} = 25°C, V_{DS} = 25 V, V_{GS} = 0 V		C_{oss}		0,64		nF
Rückwirkungskapazität Reverse transfer capacitance	f = 1,00 MHz, T_{vj} = 25°C, V_{DS} = 25 V, V_{GS} = 0 V		C_{rss}		0,60		nF
Drain-Source-Reststrom Zero gate voltage drain current	V_{DS} = 600 V, V_{GS} = 0 V, T_{vj} = 25°C		I_{DSS}			200	µA
Gate-Source-Reststrom Gate-source leakage current	V_{DS} = 0 V, V_{GS} = 20 V, T_{vj} = 25°C		I_{GSS}			0,20	nA
Einschaltverzögerungszeit, induktive Last Turn on delay time, inductive load	I_D = 50 A, V_{DS} = 400 V V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	$t_{d\ on}$		100 105		ns
Anstiegszeit, induktive Last Rise time, inductive load	I_D = 50 A, V_{DS} = 400 V V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	t_r		45,0 45,0		ns
Abschaltverzögerungszeit, induktive Last Turn off delay time, inductive load	I_D = 50 A, V_{DS} = 400 V V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	$t_{d\ off}$		325 325		ns
Fallzeit, induktive Last Fall time, inductive load	I_D = 50 A, V_{DS} = 400 V V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	t_f		30,0 30,0		ns
Einschaltverlustenergie pro Puls Turn-on energy loss per pulse	I_D = 50 A, V_{DS} = 400 V, Lσ = 40 nH V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	E_{on}		0,45 0,45		mJ
Abschaltverlustenergie pro Puls Turn-off energy loss per pulse	I_D = 50 A, V_{DS} = 400 V, Lσ = 40 nH V_{GS} = 10 V R_G = 10,0 Ω	T_{vj} = 25°C T_{vj} = 125°C	E_{off}		0,30 0,30		mJ
Wärmewiderstand, Chip bis Kühlkörper Thermal resistance, junction to heatsink	pro MOS-FET / per MOS-FET		R_{thJH}		0,450		K/W
Temperatur im Schaltbetrieb Temperature under switching conditions			$T_{vj\ op}$	-40		125	°C

Revers-Diode / reverse-diode

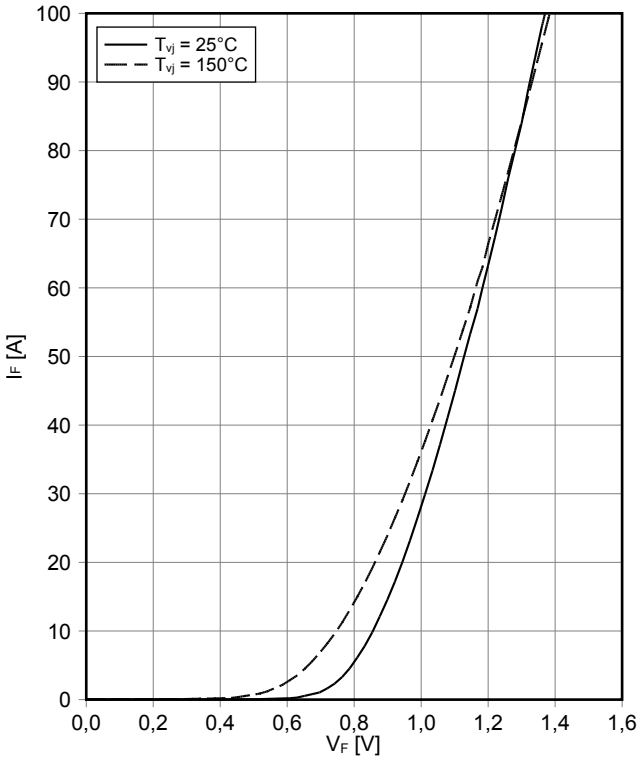
				min.	typ.	max.	
Durchlassspannung Forward voltage	I_S = 70 A, V_{GS} = 0 V I_S = 70 A, V_{GS} = 0 V	T_{vj} = 25°C T_{vj} = 125°C	V_{SD}		0,90 1,10	1,20	V

Modul / Module

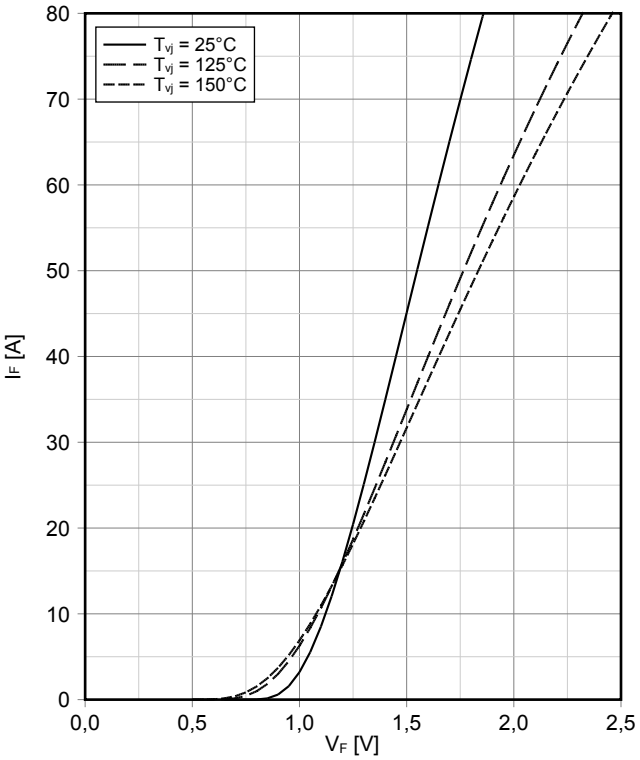
Isolations-Prüfspannung Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}		2,5		kV
Innere Isolation Internal isolation	Basisisolierung (Schutzklasse 1, EN61140) basic insulation (class 1, IEC 61140)			Al_2O_3		
Kriechstrecke Creepage distance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			11,5 6,3		mm
Luftstrecke Clearance	Kontakt - Kühlkörper / terminal to heatsink Kontakt - Kontakt / terminal to terminal			10,0 5,0		mm
Vergleichszahl der Kriechwegbildung Comperative tracking index		CTI		> 200		
			min.	typ.	max.	
Modulstreuinduktivität Stray inductance module		L_{sCE}		20		nH
Modulleitungswiderstand, Anschlüsse - Chip Module lead resistance, terminals - chip	T_H = 25°C, pro Schalter / per switch	$R_{CC'+EE'}$ $R_{AA'+CC'}$		6,00 4,00		mΩ
Lagertemperatur Storage temperature		T_{stg}	-40		125	°C
Anpresskraft für mech. Bef. pro Feder mountig force per clamp		F	20	-	50	N
Gewicht Weight		G		24		g

Der Strom im Dauerbetrieb ist auf 25 A effektiv pro Anschlusspin begrenzt
The current under continuous operation is limited to 25 A rms per connector pin
Designed for storage conditions according to Infineon TR14 (Application Note “Storage of Products Supplied by Infineon Technologies)
Designed for climate conditions without condensation or precipitation

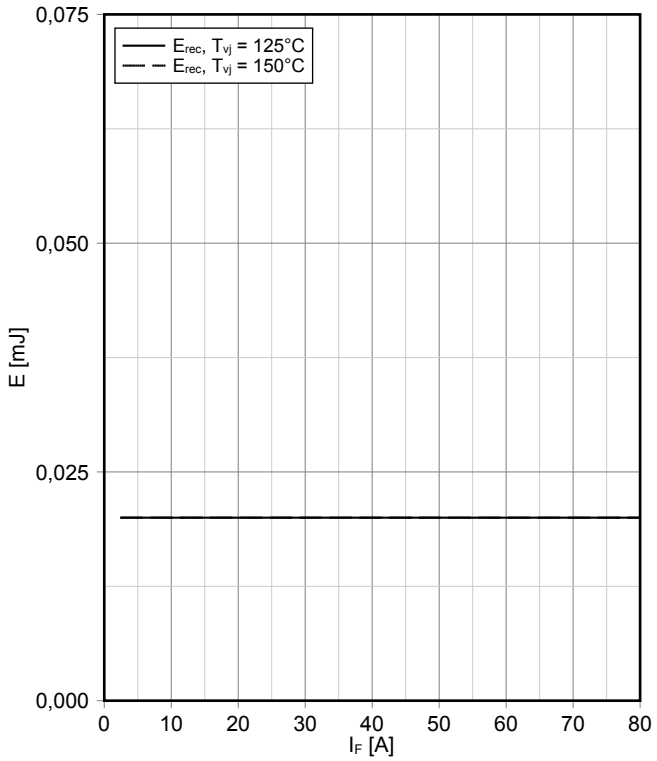
Durchlasskennlinie der Diode, Gleichrichter (typisch)
forward characteristic of Diode, Rectifier (typical)
$I_F = f(V_F)$



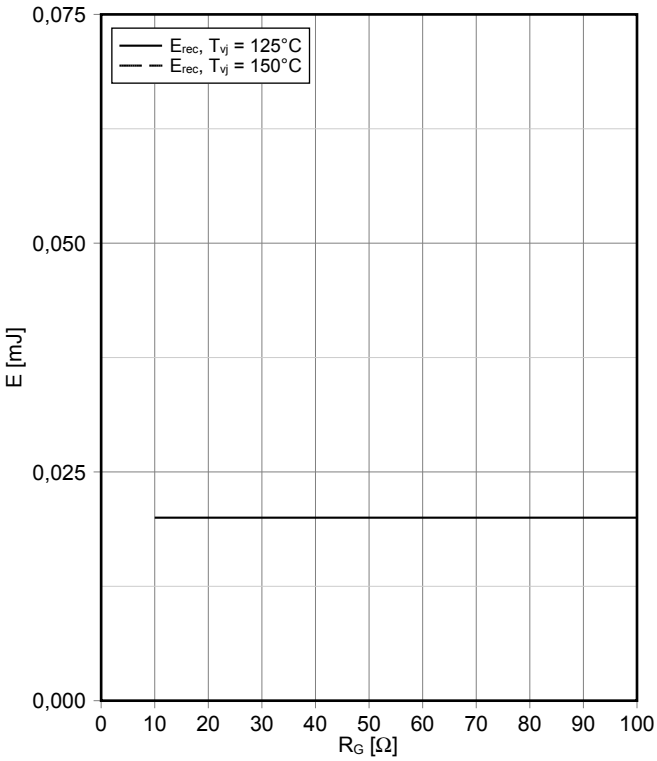
Durchlasskennlinie der Diode, Brems-Chopper (typisch)
forward characteristic of Diode, Brake-Chopper (typical)
$I_F = f(V_F)$



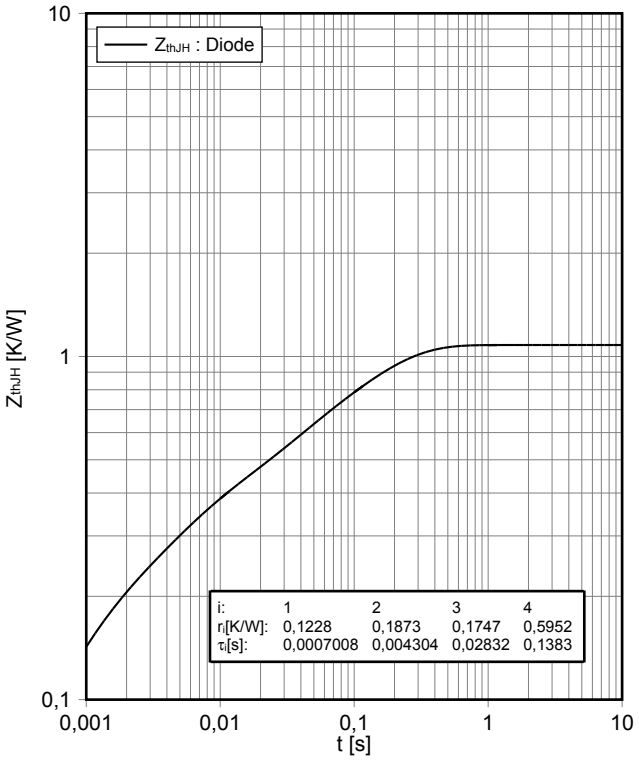
Schaltverluste Diode, Brems-Chopper (typisch)
switching losses Diode, Brake-Chopper (typical)
$E_{rec} = f(I_F)$
R_{Gon} = 10 Ω, V_{CE} = 300 V



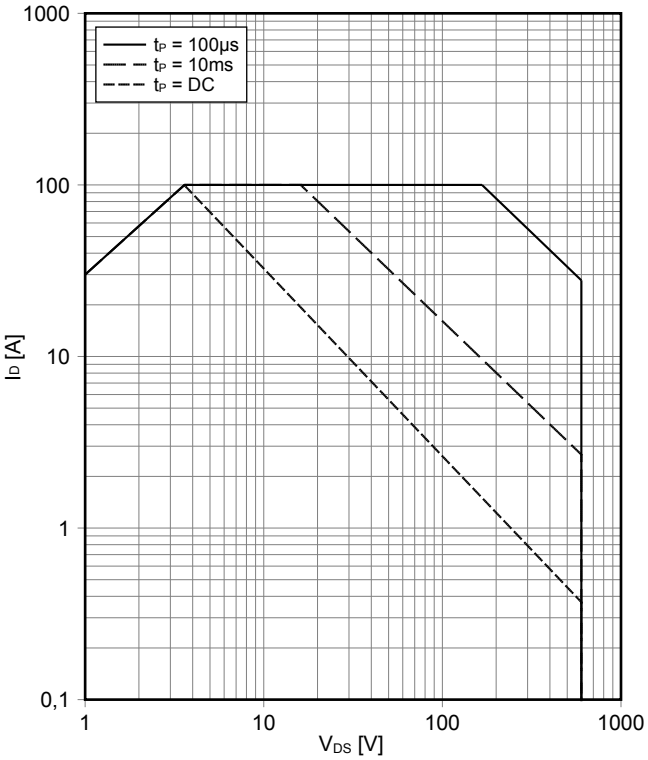
Schaltverluste Diode, Brems-Chopper (typisch)
switching losses Diode, Brake-Chopper (typical)
$E_{rec} = f(R_G)$
I_F = 40 A, V_{CE} = 300 V



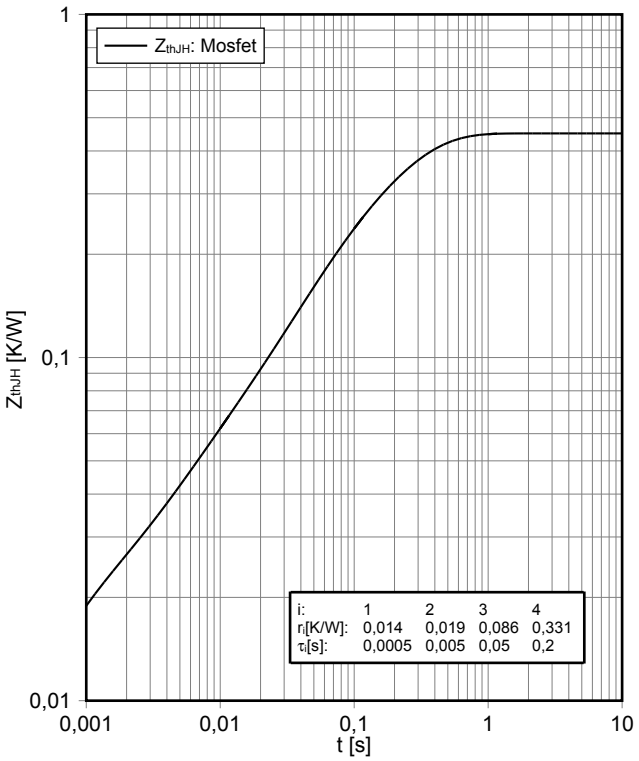
Transienter Wärmewiderstand Diode, Brems-Chopper
transient thermal impedance Diode, Brake-Chopper
$Z_{thJH} = f(t)$



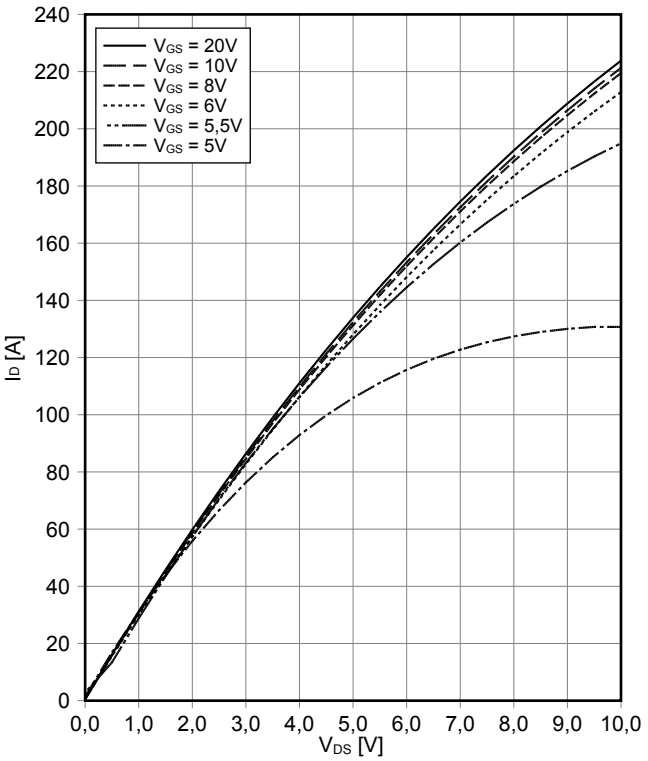
Sicherer Arbeitsbereich MOSFET (SOA)
safe operating area MOSFET (SOA)
$I_D = f(V_{DS})$
$V_{GS} = \pm 10$ V, $T_H = 25°C$



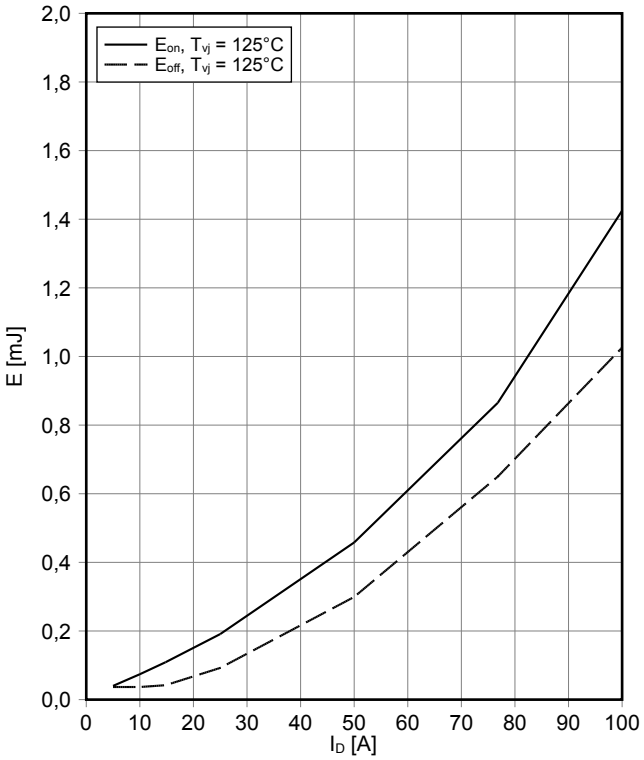
Transienter Wärmewiderstand MOSFET
transient thermal impedance MOSFET
$Z_{thJH} = f(t)$



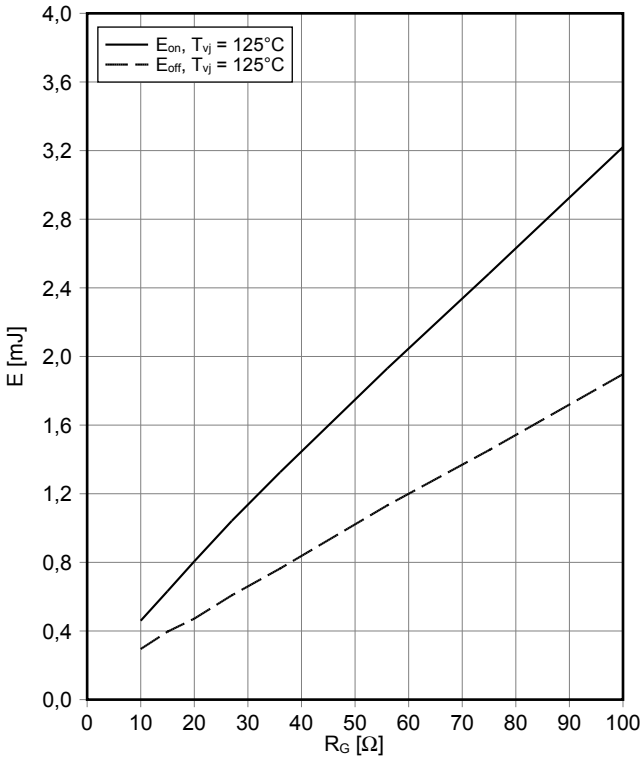
Ausgangskennlinie MOSFET (typisch)
output characteristic MOSFET (typical)
$I_D = f(V_{DS})$
$T_{vj} = 125°C$



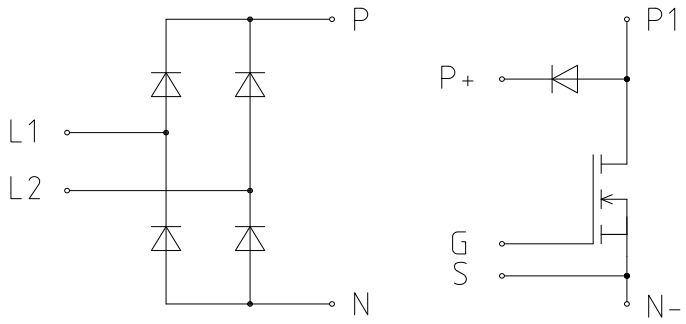
Schaltverluste MOSFET (typisch)
switching losses MOSFET (typical)
$E_{on} = f(I_D)$, $E_{off} = f(I_D)$
V_{GS} = ±10 V, R_{Gon} = 10 Ω, R_{Goff} = 10 Ω, V_{DS} = 400 V



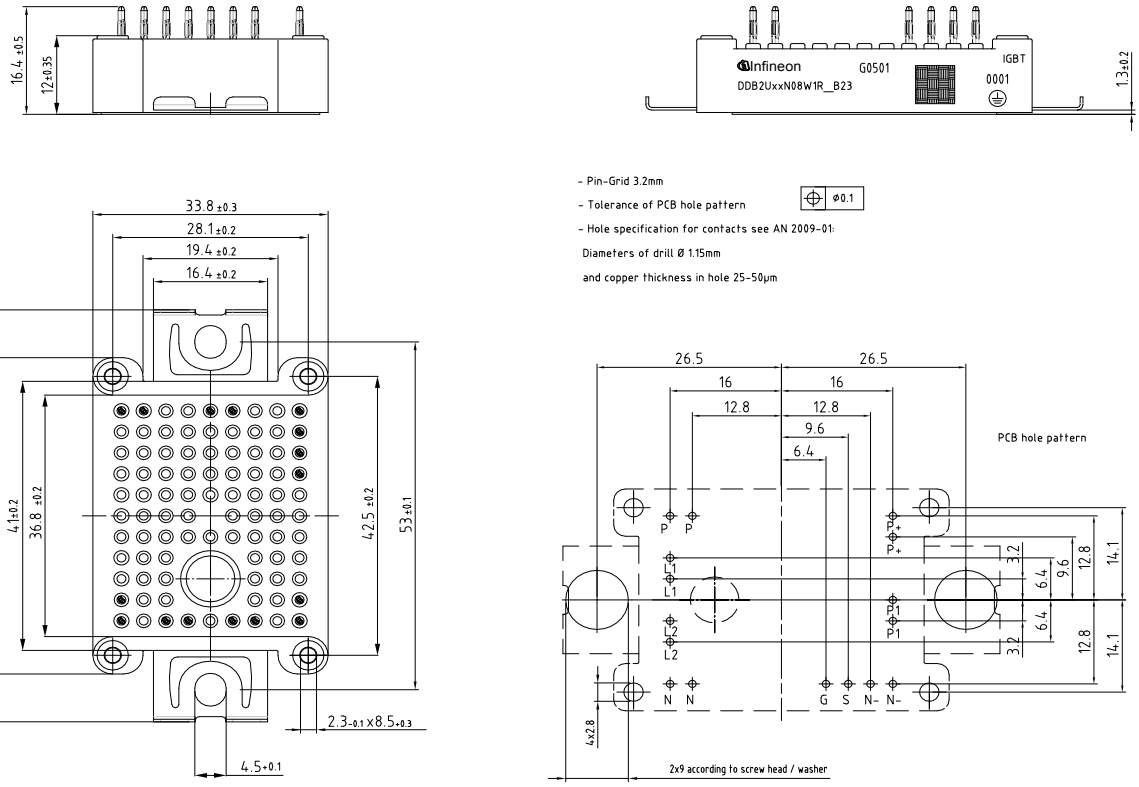
Schaltverluste MOSFET (typisch)
switching losses MOSFET (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
V_{GS} = ±10 V, I_D = 50 A, V_{DS} = 400 V



Schaltplan / Circuit diagram



Gehäuseabmessungen / Package outlines



Edition 2017-05-11

Published by
Infineon Technologies AG
81726 München, Germany

Do you have a question about this document?
Email: erratum@infineon.com