初步数据
Preliminary Data

IGBT, 逆变器 / IGBT,Inverter

最大额定值 / Maximum Rated Values

集电极 - 发射极电压 Collector-emitter voltage	T_{vj} = 25°C	V_{CES}	600	V
连续集电极直流电流 Continuous DC collector current	T_C = 55°C, $T_{vj\,max}$ = 175°C T_C = 25°C, $T_{vj\,max}$ = 175°C	$I_{C\,nom}$ I_C	30 34	A A
集电极重复峰值电流 Repetitive peak collector current	t_P = 1 ms	I_{CRM}	60	A
总功率损耗 Total power dissipation	T_C = 25°C, $T_{vj\,max}$ = 175	P_{tot}	88,0	W
栅极 - 发射极峰值电压 Gate-emitter peak voltage		V_{GES}	+/-20	V

特征值 / Characteristic Values

			min.	typ.	max.	
集电极 - 发射极饱和电压 Collector-emitter saturation voltage	I_C = 30 A, V_{GE} = 15 V I_C = 30 A, V_{GE} = 15 V I_C = 30 A, V_{GE} = 15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$V_{CE\,sat}$		1,55 1,70 1,80	2,00	V V V
栅极阈值电压 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
栅极电荷 Gate charge	V_{GE} = -15 V ... +15 V		Q_G		0,30		µC
内部栅极电阻 Internal gate resistor	T_{vj} = 25°C		R_{Gint}		0,0		Ω
输入电容 Input capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{ies}		1,65		nF
反向传输电容 Reverse transfer capacitance	f = 1 MHz, T_{vj} = 25°C, V_{CE} = 25 V, V_{GE} = 0 V		C_{res}		0,051		nF
集电极-发射极截止电流 Collector-emitter cut-off current	V_{CE} = 600 V, V_{GE} = 0 V, T_{vj} = 25°C		I_{CES}			1,0	mA
栅极-发射极漏电流 Gate-emitter leakage current	V_{CE} = 0 V, V_{GE} = 20 V, T_{vj} = 25°C		I_{GES}			400	nA
开通延迟时间(电感负载) Turn-on delay time, inductive load	I_C = 30 A, V_{CE} = 300 V V_{GE} = ±15 V R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,on}$		0,02 0,02 0,02		µs µs µs
上升时间(电感负载) Rise time, inductive load	I_C = 30 A, V_{CE} = 300 V V_{GE} = ±15 V R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	t_r		0,016 0,021 0,022		µs µs µs
关断延迟时间(电感负载) Turn-off delay time, inductive load	I_C = 30 A, V_{CE} = 300 V V_{GE} = ±15 V R_{Goff} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	$t_{d\,off}$		0,14 0,16 0,18		µs µs µs
下降时间(电感负载) Fall time, inductive load	I_C = 30 A, V_{CE} = 300 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 0,06 0,065		µs µs µs
开通损耗能量 (每脉冲) Turn-on energy loss per pulse	I_C = 30 A, V_{CE} = 300 V, L_S = 45 nH V_{GE} = ±15 V R_{Gon} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{on}		0,50 0,65 0,75		mJ mJ mJ
关断损耗能量 (每脉冲) Turn-off energy loss per pulse	I_C = 30 A, V_{CE} = 300 V, L_S = 45 nH V_{GE} = ±15 V R_{Goff} = 15 Ω	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{off}		0,60 0,75 0,80		mJ mJ mJ
短路数据 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
结 - 外壳热阻 Thermal resistance, junction to case	每个 IGBT / per IGBT		R_{thJC}		1,50	1,70	K/W
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个 IGBT / per IGBT λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		0,85		K/W
在开关状态下温度 Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

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初步数据
Preliminary Data

二极管,逆变器 / Diode, Inverter

最大额定值 / Maximum Rated Values

反向重复峰值电压 Repetitive peak reverse voltage	T_{vj} = 25°C	V_{RRM}	600		V
连续正向直流电流 Continuous DC forward current		I_F	30		A
正向重复峰值电流 Repetitive peak forward current	t_P = 1 ms	I_{FRM}	60		A
I2t-值 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	I²t	90,0 82,0		A²s A²s

特征值 / Characteristic Values

			min.	typ.	max.	
正向电压 Forward voltage	I_F = 30 A, V_{GE} = 0 V I_F = 30 A, V_{GE} = 0 V I_F = 30 A, V_{GE} = 0 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	V_F		1,60 1,55 1,50	2,05	V V V
反向恢复峰值电流 Peak reverse recovery current	I_F = 30 A, - di_F/dt = 2100 A/µs (T_{vj}=150°C) V_R = 300 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	I_{RM}		44,0 48,0 49,0		A A A
恢复电荷 Recovered charge	I_F = 30 A, - di_F/dt = 2100 A/µs (T_{vj}=150°C) V_R = 300 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	Q_r		1,30 2,30 2,70		µC µC µC
反向恢复损耗（每脉冲） Reverse recovery energy	I_F = 30 A, - di_F/dt = 2100 A/µs (T_{vj}=150°C) V_R = 300 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{rec}		0,35 0,55 0,65		mJ mJ mJ
结 - 外壳热阻 Thermal resistance, junction to case	每个二极管 / per diode		R_{thJC}		2,20	2,40	K/W
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个二极管 / per diode λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		0,85		K/W
在开关状态下温度 Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

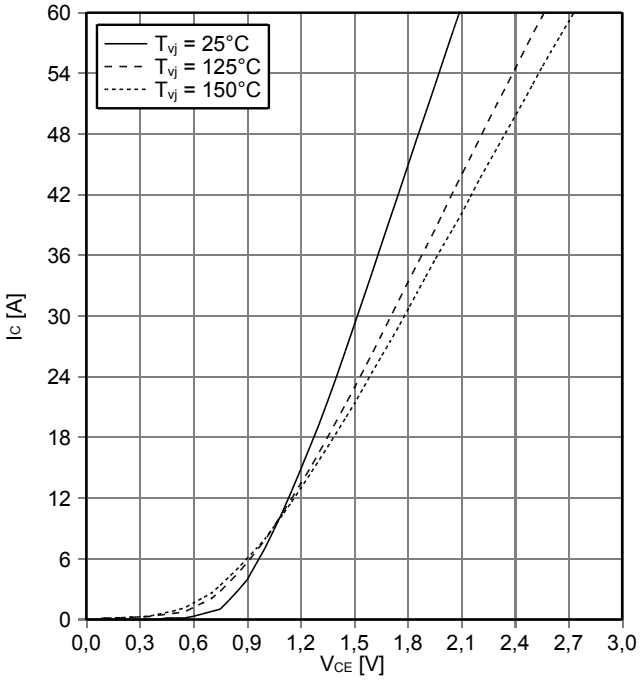
模块 / Module

绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}	2,5		kV
内部绝缘 Internal isolation	基本绝缘 (class 1, IEC 61140) basic insulation (class 1, IEC 61140)		Al_2O_3		
爬电距离 Creepage distance	端子- 散热片 / terminal to heatsink 端子- 端子 / terminal to terminal		5,0 5,0		mm
电气间隙 Clearance	端子- 散热片 / terminal to heatsink 端子- 端子 / terminal to terminal		3,2 3,2		mm
相对电痕指数 Comperative tracking index		CTI	> 225		

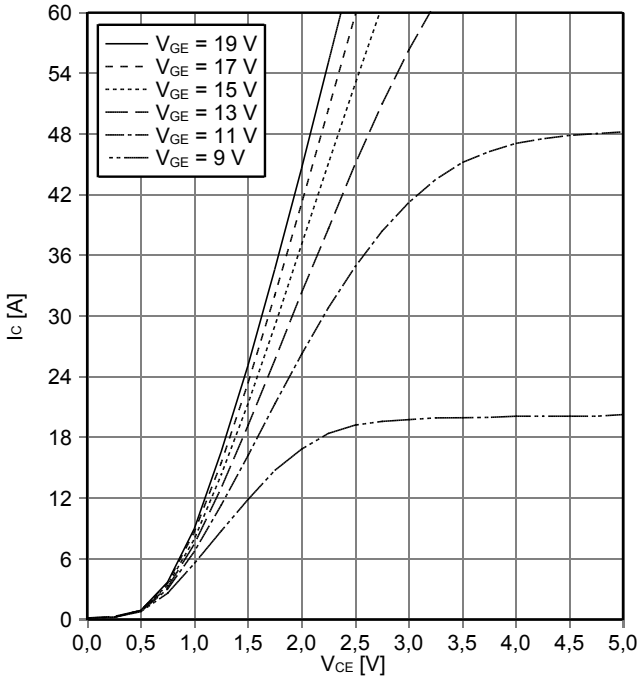
			min.	typ.	max.	
杂散电感,模块 Stray inductance module		L_{sCE}		25		nH
模块引线电阻,端子-芯片 Module lead resistance, terminals - chip	T_C = 25°C, 每个开关 / per switch	$R_{CC'+EE'}$		9,50		mΩ
储存温度 Storage temperature		T_{stg}	-40		125	°C
Anpresskraft für mech. Bef. pro Feder mountig force per clamp		F	30	-	50	N
重量 Weight		G		10		g

初步数据
Preliminary Data

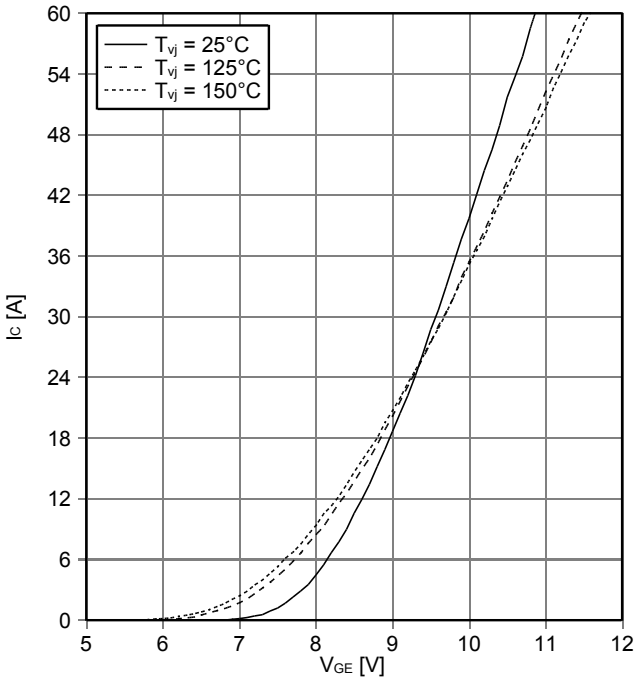
输出特性 IGBT, 逆变器 （典型)
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
V_{GE} = 15 V



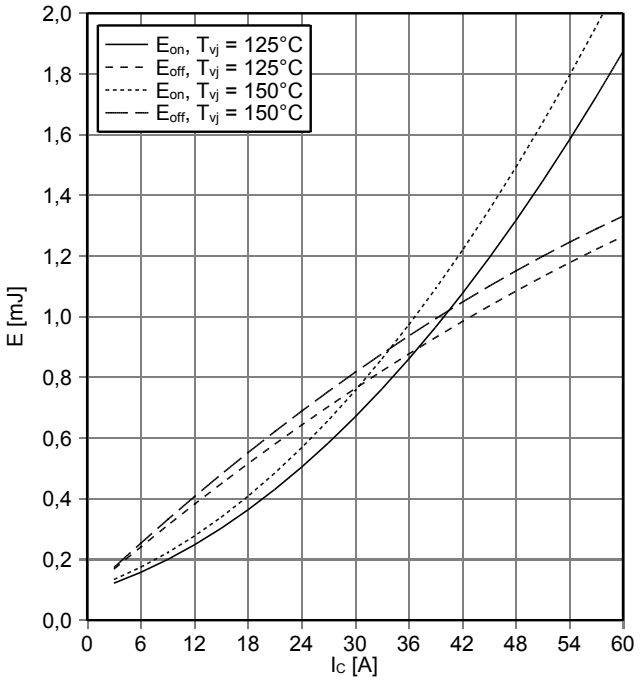
输出特性 IGBT, 逆变器 （典型)
output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$
T_{vj} = 150°C



传输特性 IGBT, 逆变器 (典型)
transfer characteristic IGBT,Inverter(typical)
$I_C = f(V_{GE})$
V_{CE} = 20 V



开关损耗 IGBT, 逆变器 （典型)
switching losses IGBT,Inverter (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
V_{GE} = ±15 V, R_{Gon} = 15 Ω, R_{Goff} = 15 Ω, V_{CE} = 300 V



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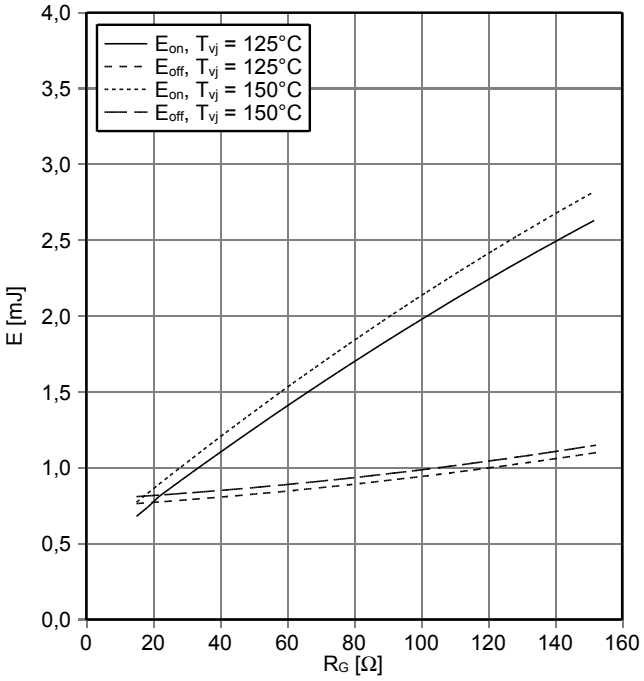
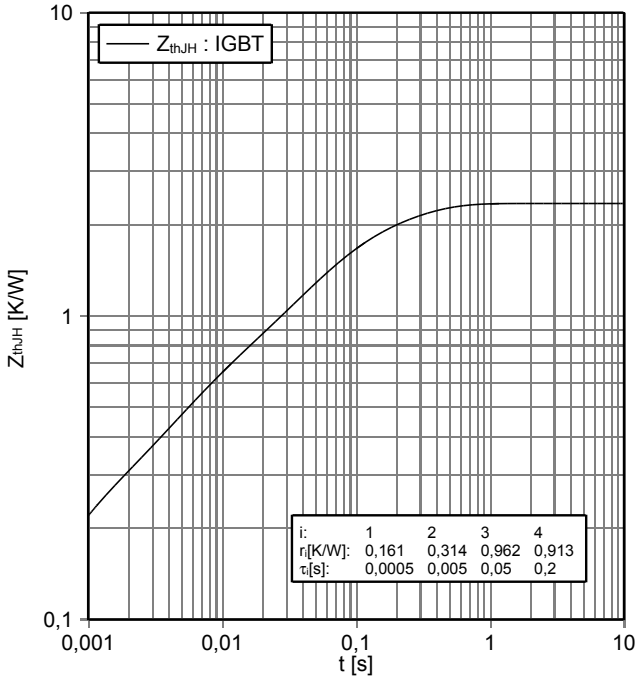
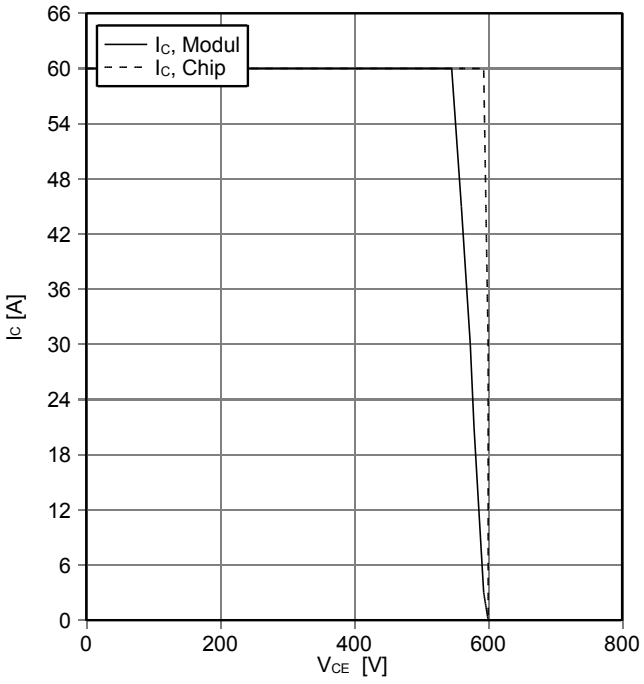
开关损耗 IGBT, 逆变器 （典型)
switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
V_{GE} = ±15 V, I_C = 30 A, V_{CE} = 300 V



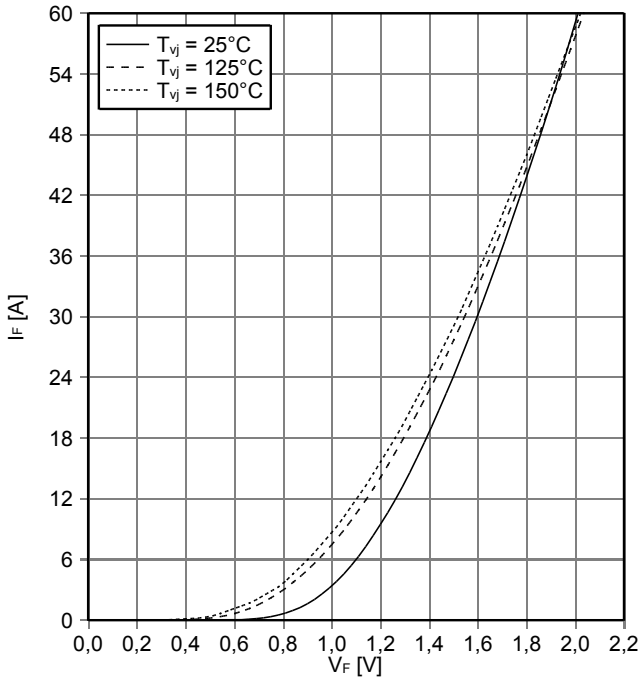
瞬态热阻抗 IGBT, 逆变器
transient thermal impedance IGBT,Inverter
$Z_{thJH} = f(t)$



反偏安全工作区 IGBT, 逆变器 （RBSOA）
reverse bias safe operating area IGBT,Inverter (RBSOA)
$I_C = f(V_{CE})$
V_{GE} = ±15 V, R_{Goff} = 15 Ω, T_{vj} = 150°C



正向偏压特性 二极管,逆变器 (典型)
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



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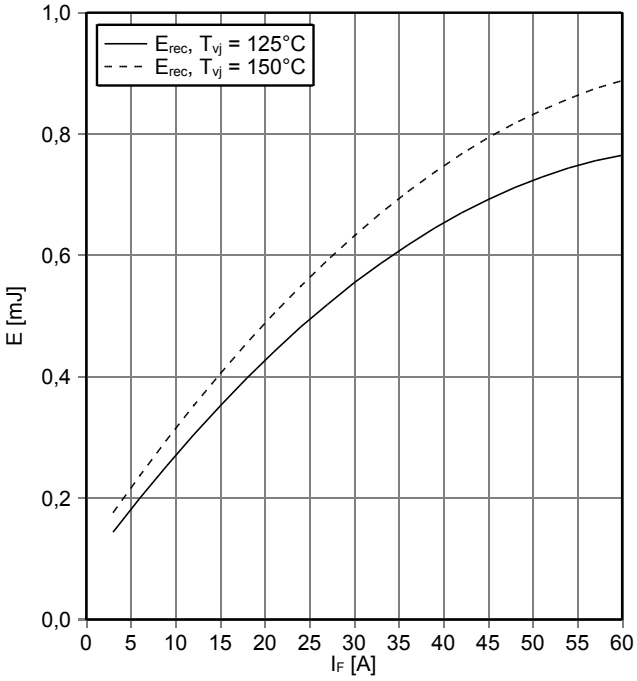
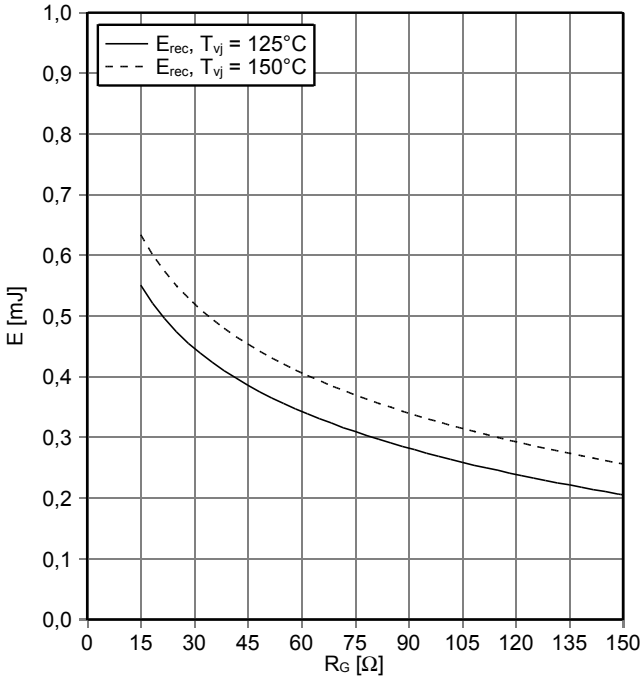
初步数据
Preliminary Data

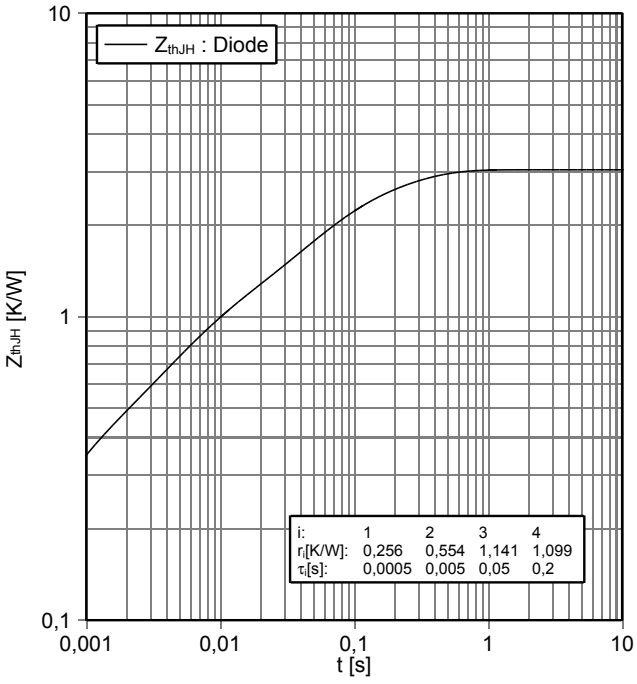
开关损耗 二极管,逆变器 （典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 15\ \Omega$, $V_{CE} = 300$ V



开关损耗 二极管,逆变器 （典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 30$ A, $V_{CE} = 300$ V



瞬态热阻抗 二极管,逆变器
transient thermal impedance Diode, Inverter
$Z_{thJH} = f(t)$



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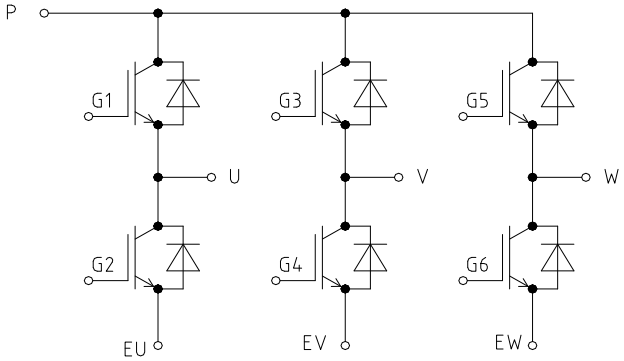
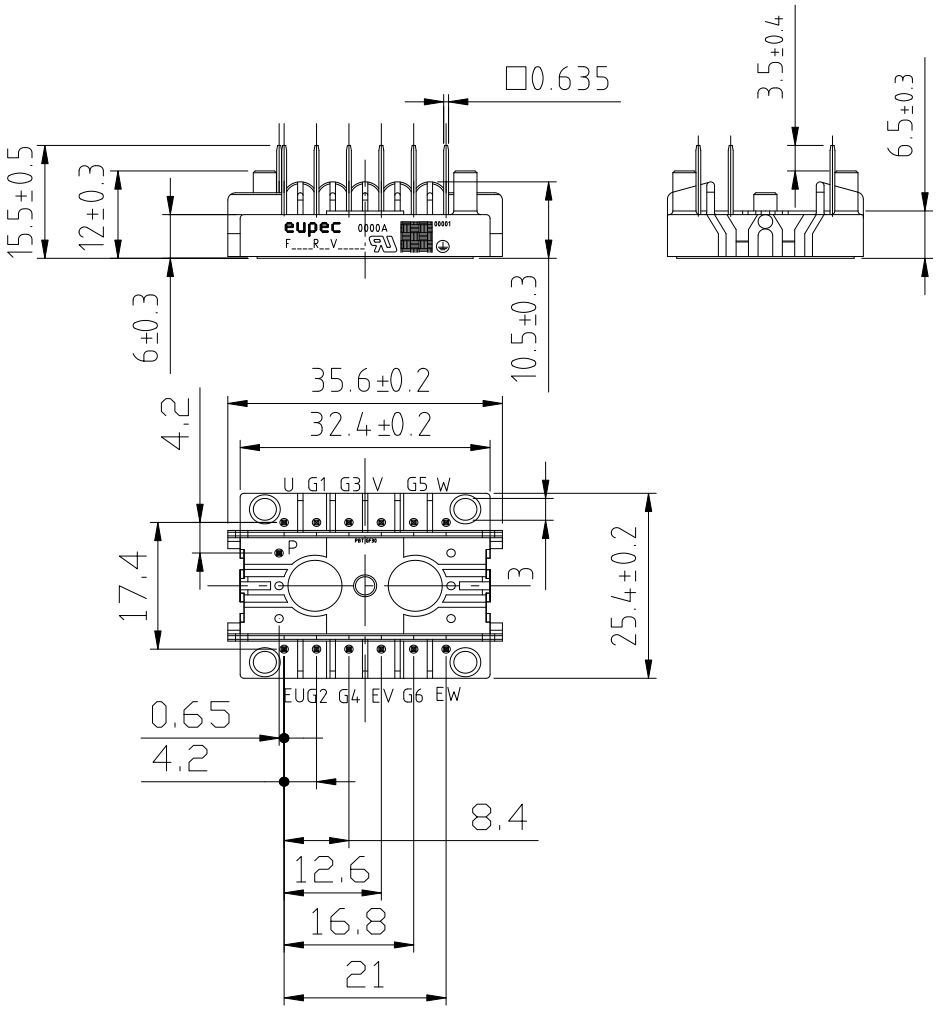
初步数据
Preliminary Data

接线图 / circuit_diagram_headline



封装尺寸 / package outlines



Pinpositions with tolerance ⌖ ϕ0.4

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初步数据
Preliminary Data

使用条件和条款

使用条件和条款
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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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