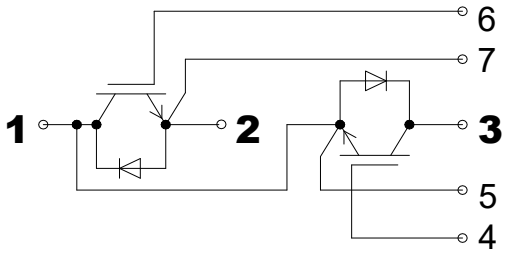
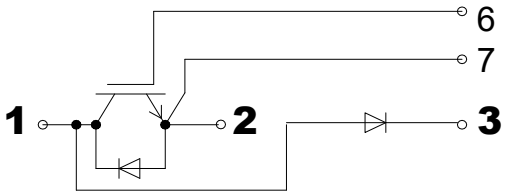
SGG200N125UC2

Ultra Fast IGBT Modules

SGG200N125UC2



SGD200N125UC2



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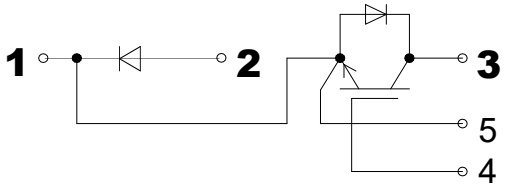

Symbol	Test Condition	Value	Unit
IGBT			
V_{CES}		1200	V
I_C	T_C = 25(100)°C per chip	200(150)	A
V_{GES}		±20	V
T_{vj} (T_{stg})		-40 ~ +150(125)	°C
P_{tot}		1270	W
INVERSE DIODE			
I_F	T_C=25(100)°C per chip	200(100)	A
I_{FM}	T_C=25(100)°C per chip	400(300)	A
V_{RRM}		1200	V
I_{FSM}	T_j=150°C, t_p=10ms	1450	A

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Symbol	Test Conditions	Min	Typ	Max	Unit
				Tc = 25°C unless otherwise specified	
$V_{GE(th)}$	$V_{GE}=V_{CE}$, I_C=6mA	4.5	5.5	6.5	V
I_{CES}	V_{GE}=0;$V_{CE}=V_{CES}$;T_j=25(125)°C		0.25(1.50)	0.45(2.00)	mA
$V_{CE(TO)}$	T_j=25(125)°C		2.0(1.8)	2.5(2.3)	V
r_{CE}	V_{GE}=15V		13.0(15.0)	14.0(19.0)	mΩ
$V_{CE(sat)}$	I_C=150A; V_{GE}=15V; chip level		3.30	3.75	V
C_{ies}	V_{GE}=0V, V_{CE}=25V, f=1MHz		10.0	13.0	nF
C_{oes}			1.60	2.00	
C_{res}			0.80	1.20	
LCE				20	nH
RCC'+EE'	Terminal to Case， Tc=25(125)°C		0.35(0.50)		mΩ
$t_{d(on)}$	Vcc = 600V, I_C = 15. A R_{GON} = R_{GOFF} = 4Ω T_j=125°C V_{GE}=±15V		75		ns
t_r			35		ns
$t_{d(off)}$			410		ns
t_f			24		ns
E_{on}/E_{off}			14.0/8.0		mJ
INVERSE DIODE				**Tc = 25°C unless otherwise specified**	
V_F	$I_.$ =150A; V_{GE}=0V; T_j = 25°C		1.9	2.5	V
Q_{rr}	I_F=150A; V_R=300V; T_j=25°C di/dt = 600A/us, V_{GE}=-15V		8.5		μC
I_{RRM}			55		A
E_{rec}			12.0		mJ
THERMAL CHARACTERISTICS					
$R_{th(j-c)}$	per IGBT			0.095	K/W
$R_{th(j-c)D}$	per FRD			0.250	K/W
Mechanical Data					
Ms		2.5		5	Nm
Weight			320		g

Features

- NPT Technology IGBT
- Fast Recovery Free Wheeling Diode
- Low Switching Losses
- Vce(sat) with positive temperature coefficient
- Fast Switching and short tail current
- Switched mode power supplies at f_{sw}>20KHz
- Resonant inverters up to 100KHz
- Electronic Welders at f_{sw}>20KHz

Application

- Welding inverters
- Inductive Heating

Advantages

- Space and weight savings
- Reduced protection circuits

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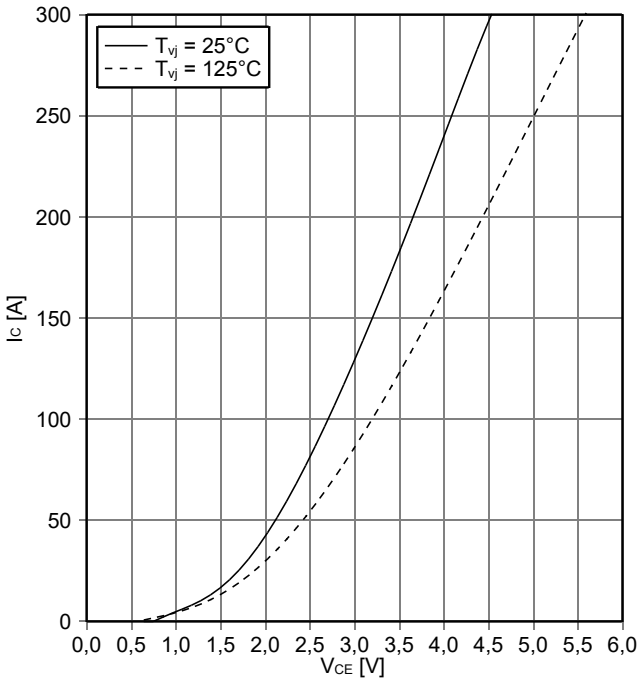
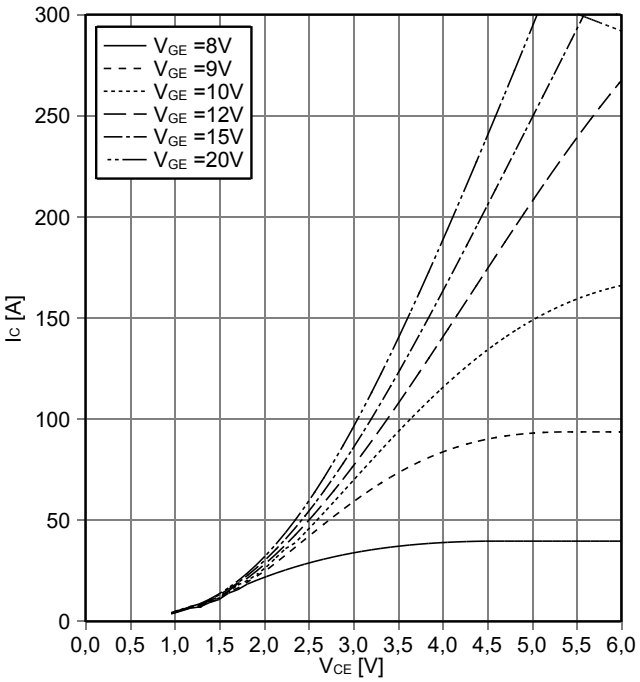
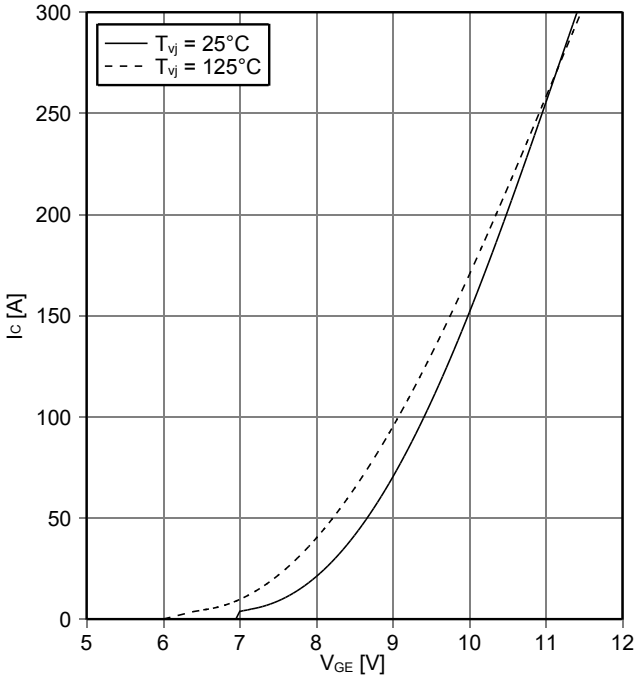


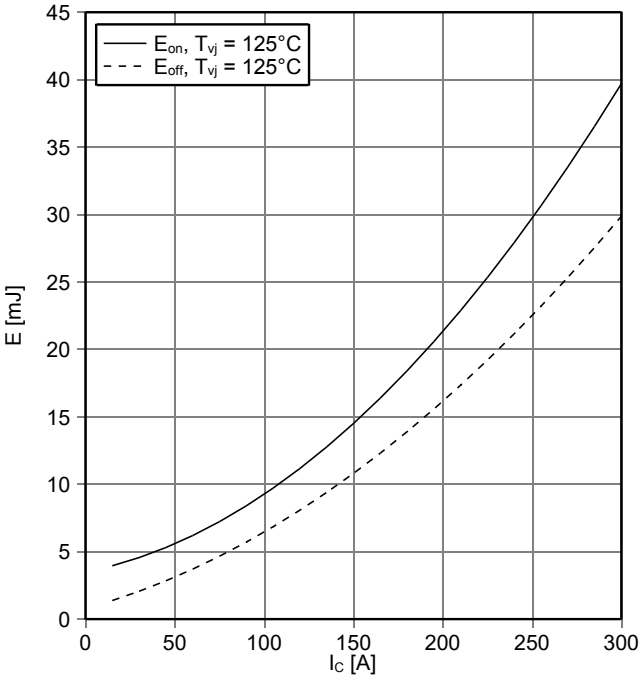
Output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$, V_{GE} = 15 V



Output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$, T_{vj} = 125°C



Transfer characteristic IGBT,Inverter(typical)
$I_C = f(V_{GE})$,V_{CE} = 20 V



Switching losses IGBT,Inverter (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$,
V_{GE} = ±15 V, R_{Gon} = 6.8 Ω, R_{Goff} = 6.8 Ω, V_{CE} = 600 V

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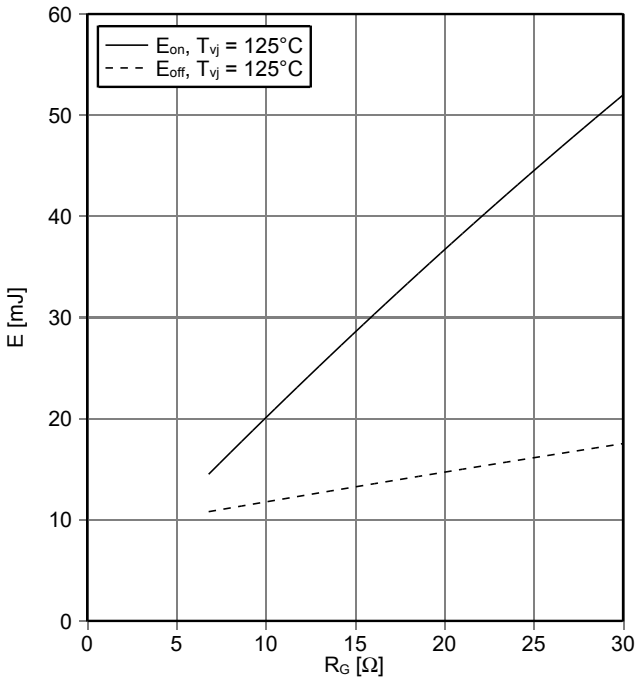
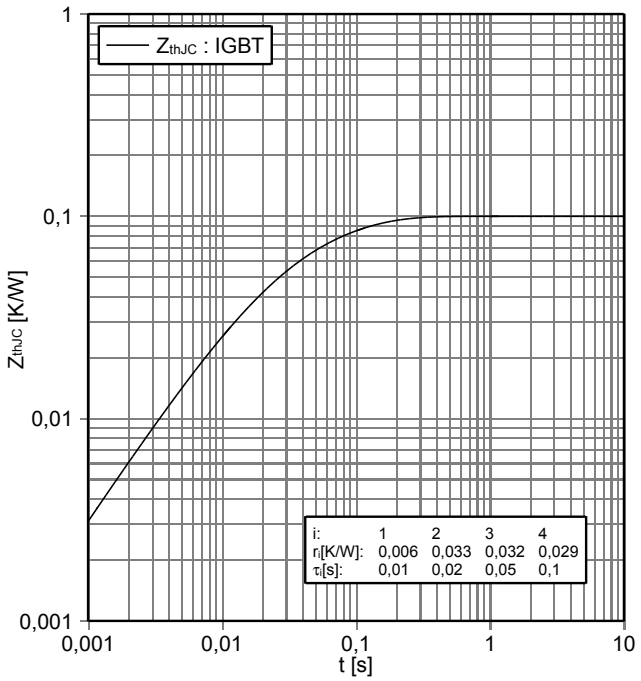
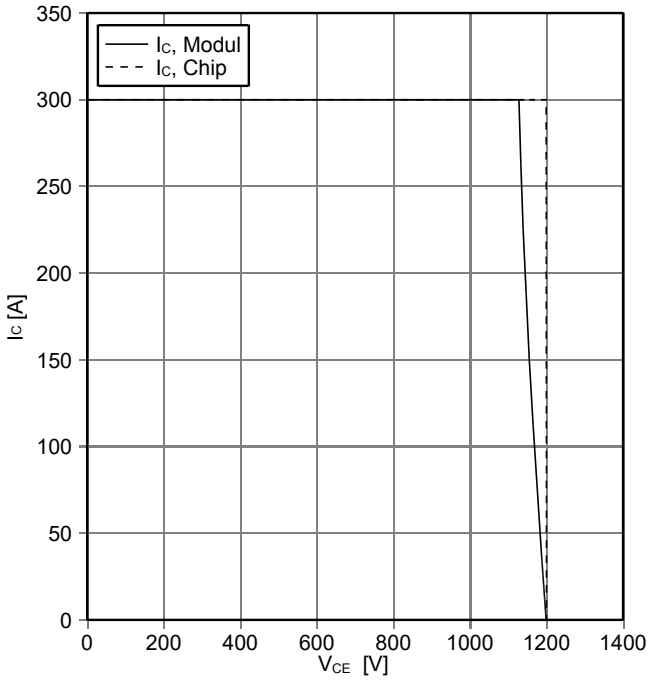


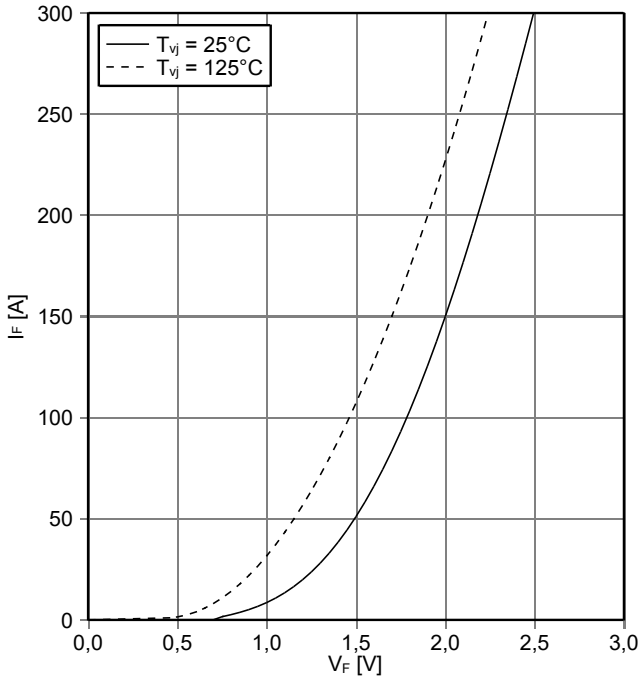
Switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
V_{GE} = ±15 V, I_C = 150 A, V_{CE} = 600 V



Transient thermal impedance IGBT,Inverter
$Z_{thJC} = f(t)$



Reverse bias safe operating area IGBT,Inverter (RBSOA) $I_C = f(V_{CE})$
V_{GE} = ±15 V, R_{Goff} = 6.8 Ω, T_{vj} = 125°C



Forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$

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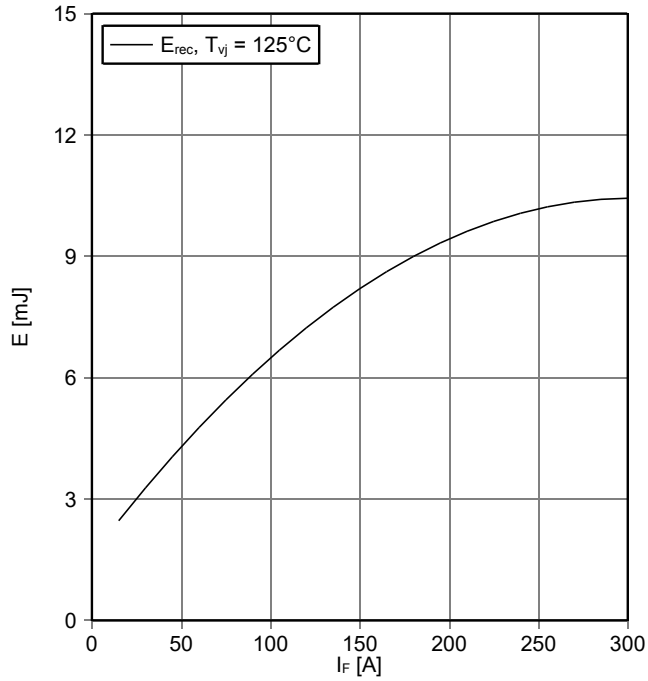
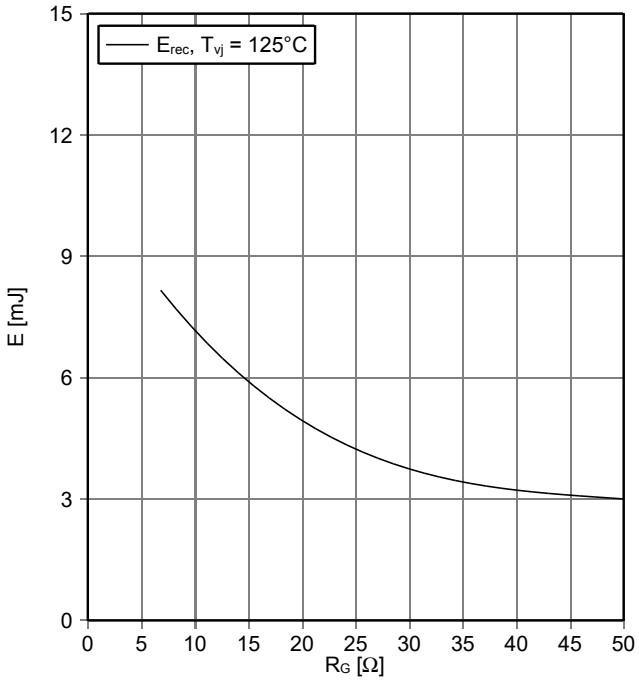
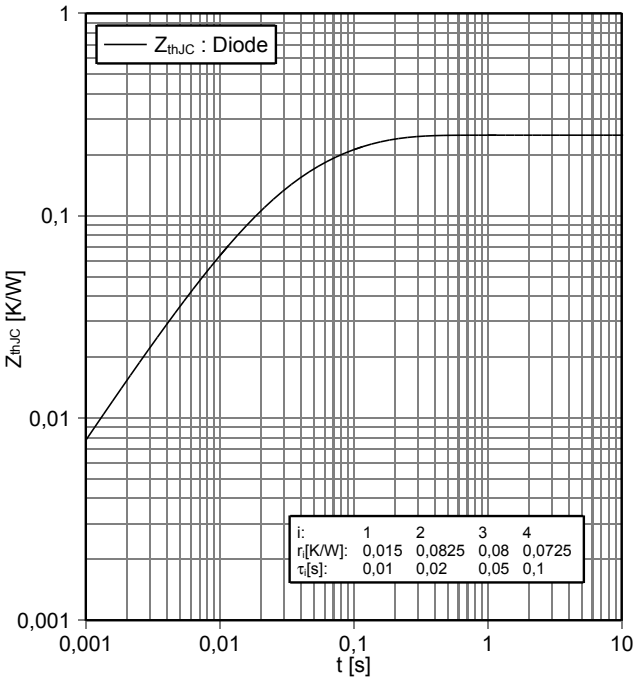


Switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 6.8\ \Omega$, $V_{CE} = 600$ V



Switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 150$ A, $V_{CE} = 600$ V



Transient thermal impedance Diode, Inverter
$Z_{thJC} = f(t)$

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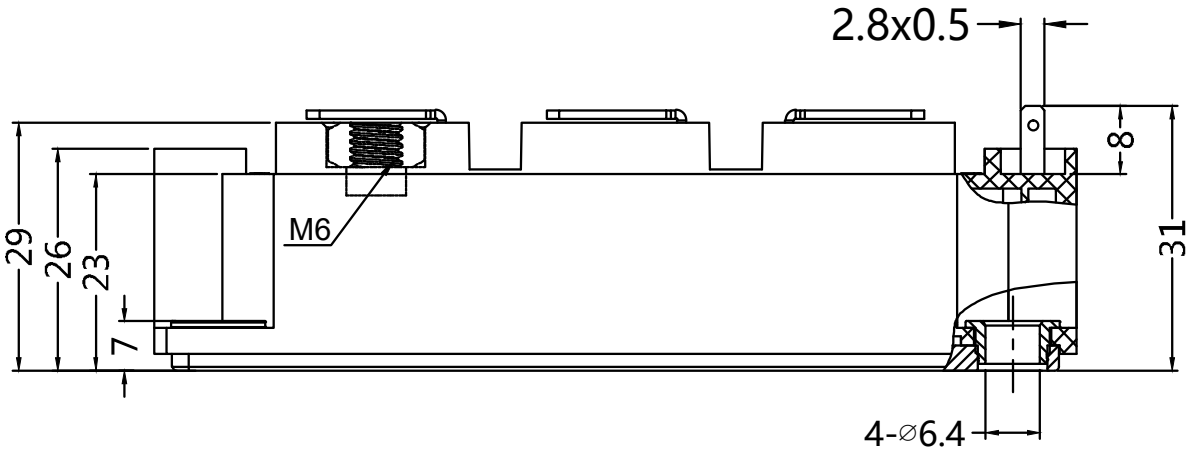

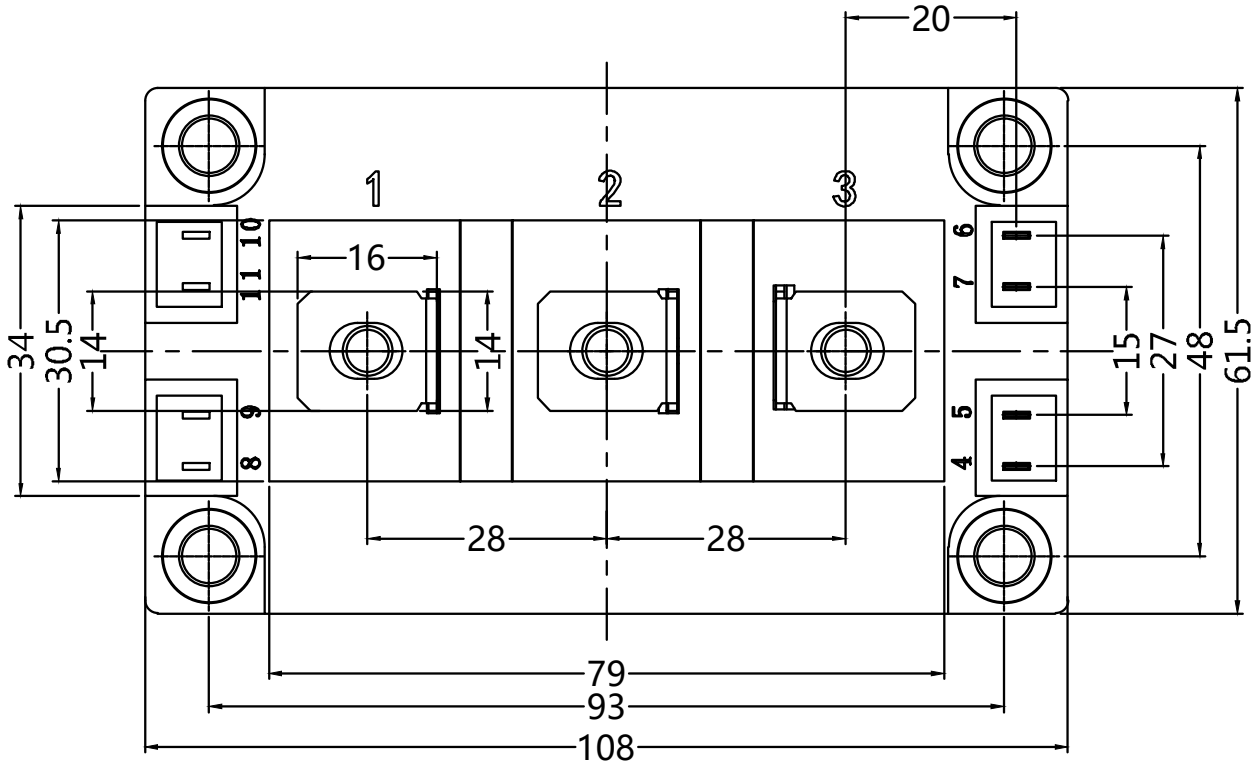

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