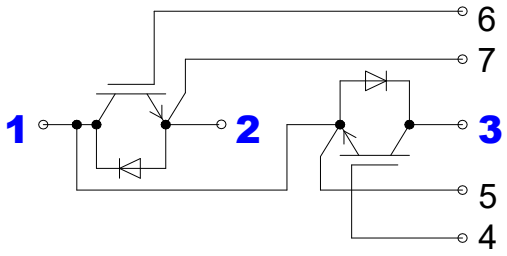
SGG300N125UC2

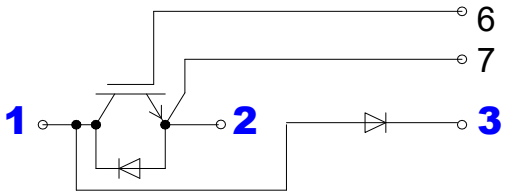
Ultra Fast IGBT Modules

RoHS Compliant

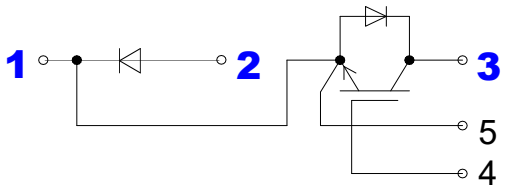
SGG300N125UC2



SGD100N125UC2



SDG100N125UC2



Symbol	Test Condition	Value	Unit
IGBT			
V_{CES}		1200	V
I_C	T_C = 25(80)°C per chip	300(210)	A
V_{GES}		±20	V
T_{vj} (T_{stg})		-40 ~ +150(125)	°C
P_{tot}		1670	W
INVERSE DIODE			
I_F	T_C=25(80)°C per chip	260(180)	A
I_{FM}	T_C=25(80)°C per chip	600(420)	A
V_{RRM}		1200	V
I_{FSM}	T_j=150°C, t_p=10ms	2250	A

www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019019 E-mail: sales@sirectifier.com

SGG300N125UC2

Ultra Fast IGBT Modules

Symbol	Test Conditions	Min	Typ	Max	Unit
IGBT			**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}; Tj=25(125)°C		0.35(2.50)	0.55(3.00)	mA
$V_{CE(TO)}$	Tj=25(125)°C		1.7(1.5)	2.3(2.0)	V
r_{CE}	V_{GE}=15V Tj=25(125)°C		11.0(9.0)	12.0(10.5)	mΩ
$V_{CE(sat)}$	I_C=200A; V_{GE}=15V; chip level		3.30	3.75	V
C_{ies}	V_{GE}=0V, V_{CE}=25V, f=1MHz		18.0	24.0	nF
C_{oes}			2.60	3.00	
C_{res}			1.00	1.30	
LCE				20	nH
RCC'+EE'	Terminal to Case， Tc=25(125)°C		0.35(0.50)		mΩ
$t_{d(on)}$	Vcc = 600V, I_C = 200A R_{GON} = R_{GOFF} = 3Ω T_j=125°C V_{GE}=±15V		125		ns
t_r			39		ns
$t_{d(off)}$			460		ns
t_f			29		ns
E_{on}/E_{off}			16.0/11.0		mJ
INVERSE DIODE			**Tc = 25°C unless otherwise specified**		
V_F	IF =200A; VGE=0V; Tj = 25°C		1.9	2.5	V
Q_{rr}	IF=200A; VR=300V; Tj=25°C di/dt = 600A/us, VGE=-15V		9.5		μC
I_{RRM}			75		A
E_{rec}			15.0		mJ
THERMAL CHARACTERISTICS					
Rth(j-c)	per IGBT			0.075	K/W
Rth(j-c)D	per FRD			0.180	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

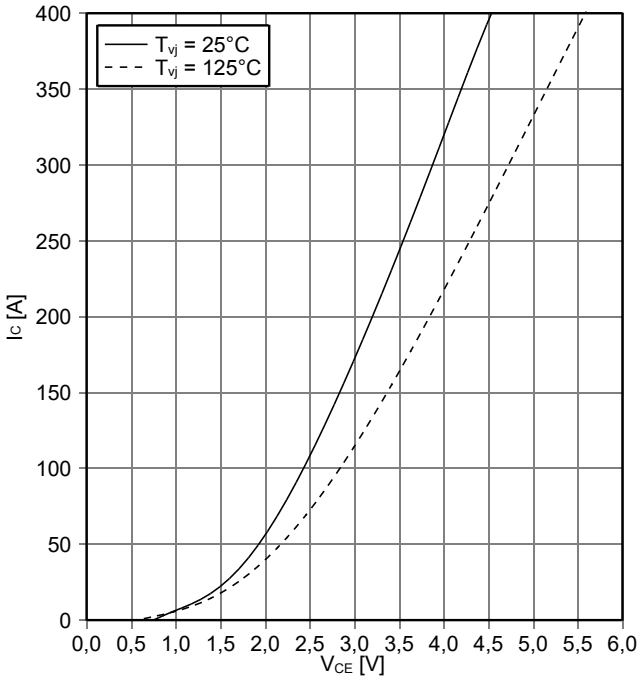
- Welding inverters
- Inductive Heating

Advantages

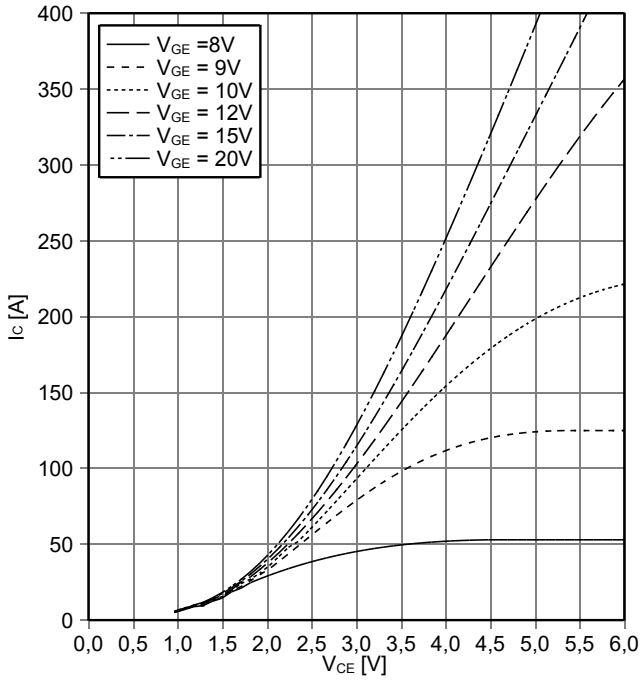
- Space and weight savings
- Reduced protection circuits

- This type IGBT can be direct replacement for SEMIKRON SKM300GB125D

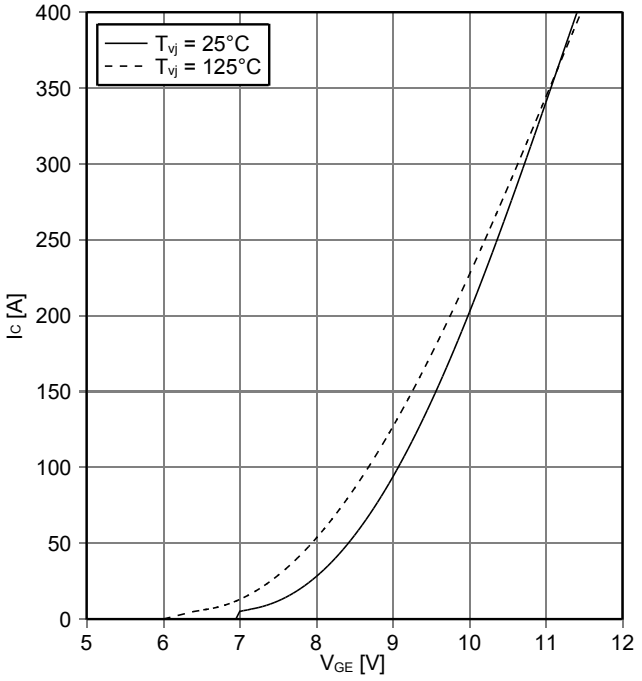
www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019919 E-mail: sales@sirectifier.com



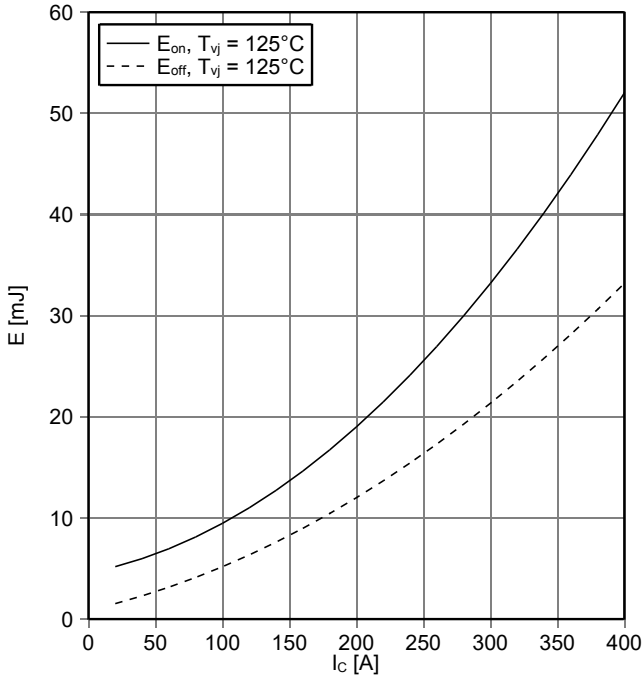
Output characteristic IGBT,Inverter (typical)
$I_C = f(V_{CE})$, V_{GE} = 15 V



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

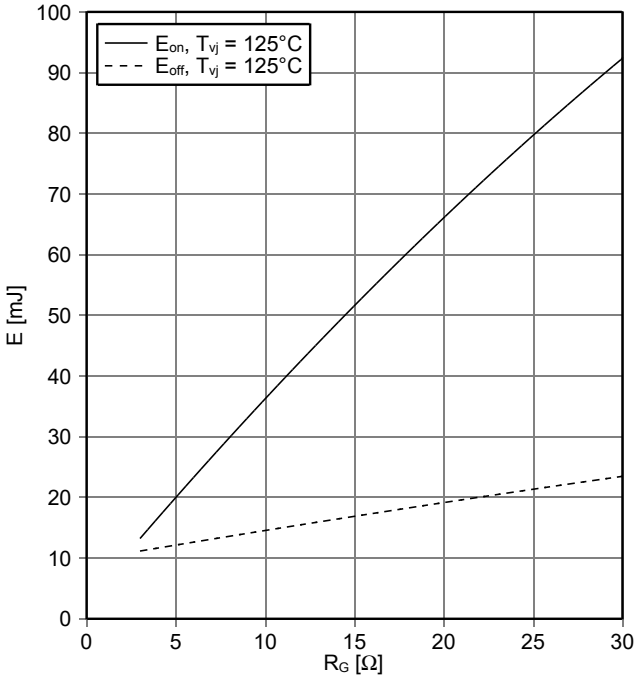


Transfer characteristic IGBT,Inverter(typical)
$I_C = f(V_{GE})$
V_{CE} = 20 V

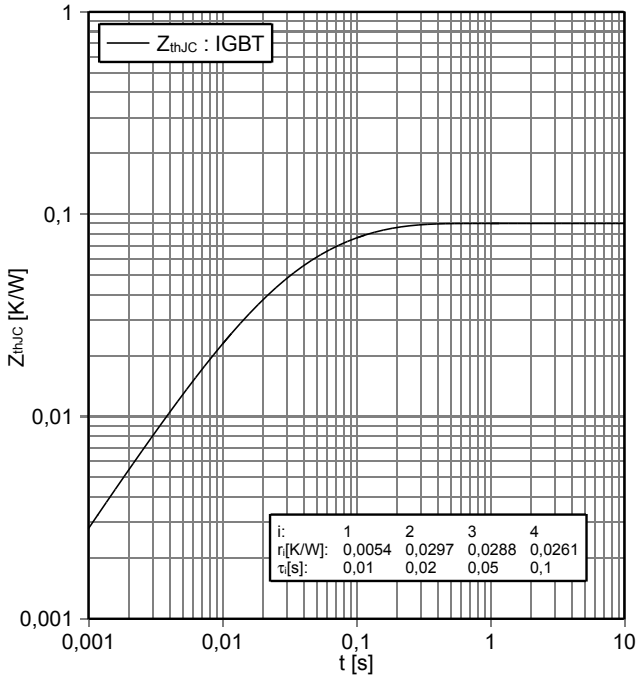


Switching losses IGBT,Inverter (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
V_{GE} = ±15 V, R_{Gon} = 4.7 Ω, R_{Goff} = 4.7 Ω, V_{CE} = 600 V

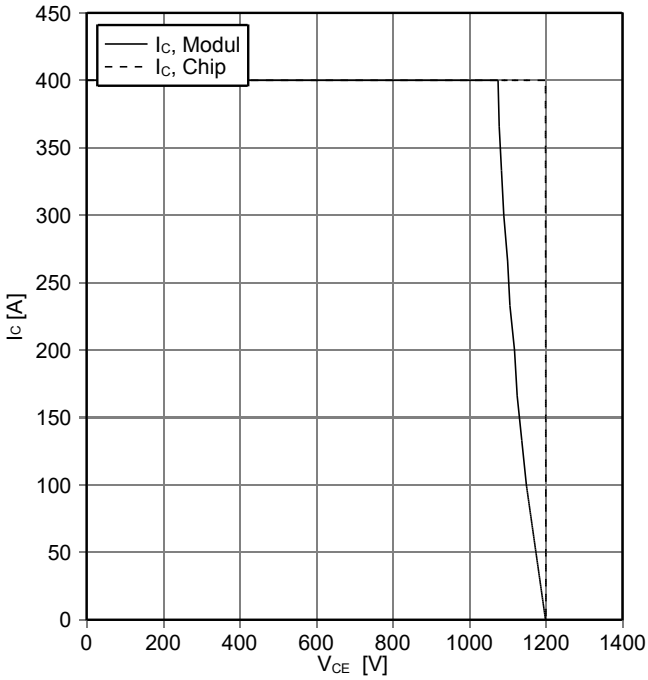
www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019919 E-mail: sales@sirectifier.com



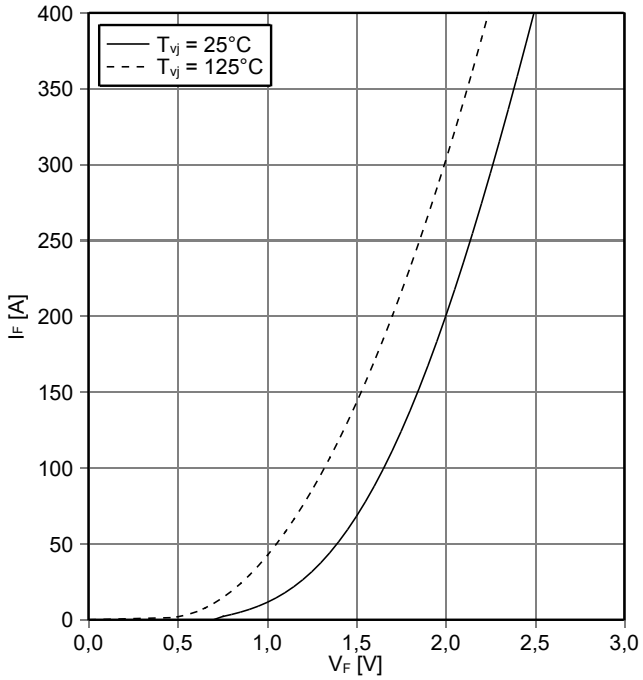
Switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
V_{GE} = ±15 V, I_C = 200 A, V_{CE} = 600 V



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

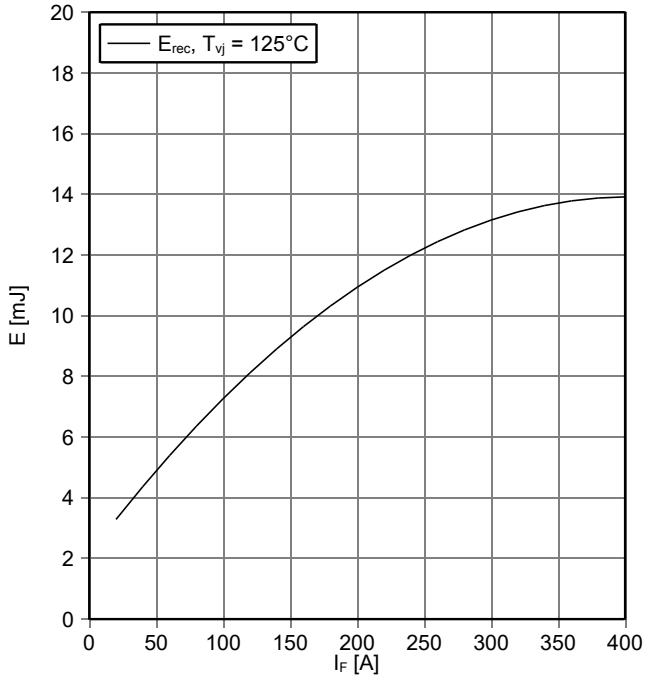


Reverse bias safe operating area IGBT,Inverter (RBSOA) $I_C = f(V_{CE})$
V_{GE} = ±15 V, R_{Goff} = 4.7 Ω, T_{vj} = 125°C

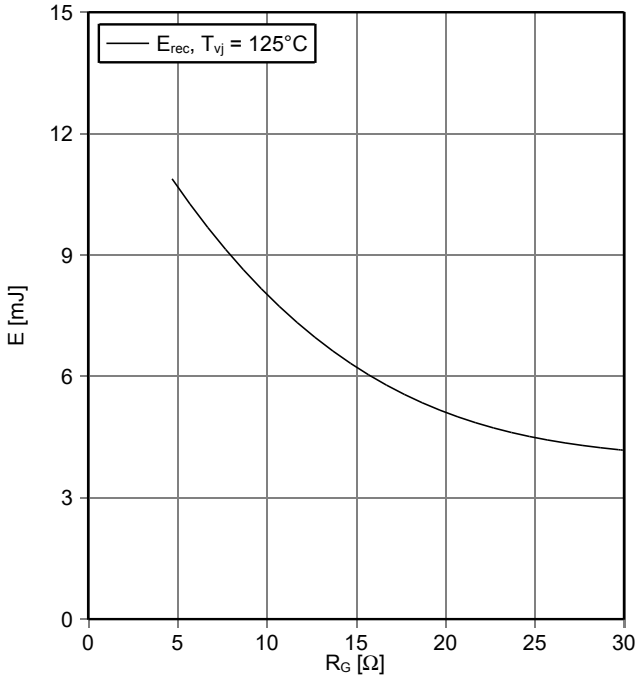


Forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$

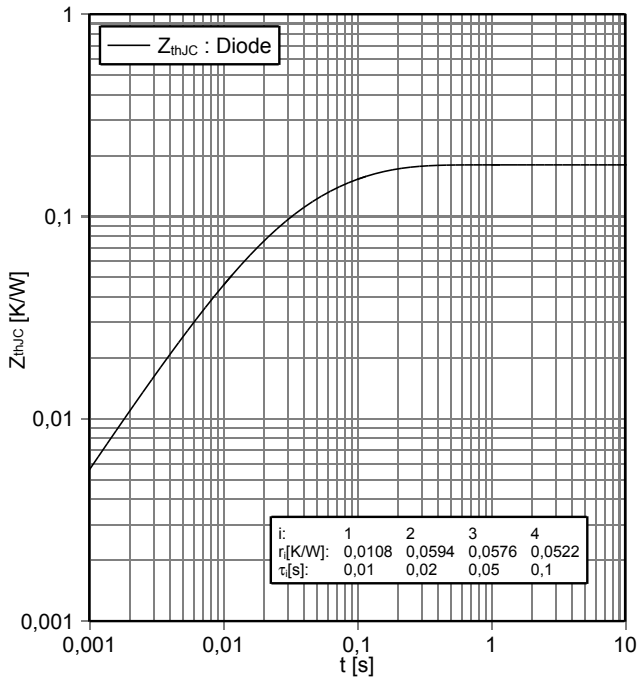
www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019919 E-mail: sales@sirectifier.com



Switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 4.7\ \Omega$, $V_{CE} = 600$ V



Switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 200$ A, $V_{CE} = 600$ V

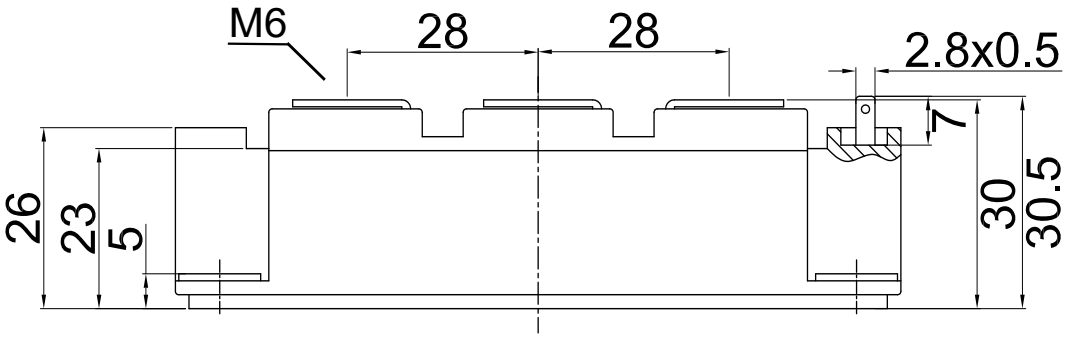


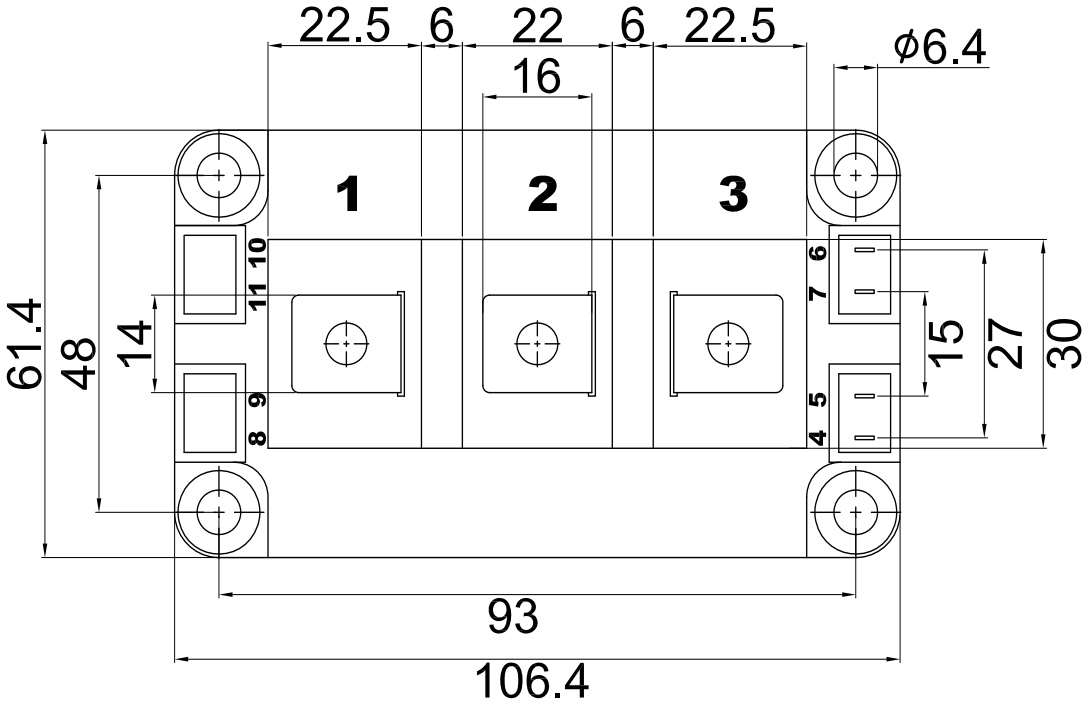
Transient thermal impedance Diode, Inverter
$Z_{thJC} = f(t)$

www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019019 E-mail: sales@sirectifier.com

SGG300N125UC2

Ultra Fast IGBT Modules





www.sirectifier.com Tel: +86-519-86800000 Fax: +86-519-88019019 E-mail: sales@sirectifier.com