Features：

- 10us short circuit capability
- Low switching losses
- $V_{CE(sat)}$ with Positive temperature coefficient
- Fast & soft reverse recovery anti-parallel FWD

Typical Applications：

- Inverter for motor drive(VFD)
- AC and DC servo drive amplifier
- Uninterruptible power supply

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min.	Typ.	Max.	
V_{CES}	Collector-Emitter voltage	T_j=25°C			1200	V
V_{GES}	Gate-Emitter voltage	T_j=25°C			±20	V
I_C	Collector current	Continuous@ T_C=100°C			100	A
I_{CP}		t_P=1ms			100	A
P_{tot}	Power Dissipation Per IGBT	T_C=25°C , $T_{vj\ max}$=175°C			300	W
T_j	Junction temperature	/			175	℃
$T_{vj(op)}$	Temperature under switching conditions	$T_{vj\ op}$ > 150℃ is only allowed for operation at overload conditions.	-40		175	℃
T_{stg}	Storage temperature	/	-40		150	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute	2500			V
Screw torque	Mounting(M5)	/	2.4		3.0	N·m
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1200V，V_{GE}=0V			5	mA
I_{GES}	Gate-Emitter leakage current	T_j=25°C ,V_{CE}=0V，V_{GE}=±20V	-0.4		0.4	μA
$V_{GE(th)}$	Gate-Emitter threshold voltage	T_j=25°C ,V_{CE}=20V，I_C=1.2mA	4.6	5.2	6.0	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=100A		2.1	2.5	V
		T_j=125°C ,V_{GE}=15V，I_C=100A		2.4	2.5	V
R_{Gint}	Integrated gate resistor			2		Ω
Q_g	Gate Charge	T_j=25°C ,V_{CE}=600V,Ic=100A,V_{GE}=±15V		0.7		μC
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V，V_{GE}=0V，f=1MHz		9.0		nF
C_{res}	Reverse transfer capacitance			0.47		nF
$t_{(d)on}$	Turn-on time	V_{CC}=600V，I_C=100A，V_{GE}=±15V，R_g=6Ω，Inductive load; T_j=25°C		35		ns
		T_j=125°C		40		ns
t_r		T_j=25°C		40		ns
		T_j=125°C		45		ns
$t_{(d)off}$	Turn-off time	T_j=25°C		240		ns
		T_j=125°C		270		ns
t_f		T_j=25°C		100		ns
		T_j=125°C		130		ns
t_{sc}	Short circuit withstand time	V_{GE}=15V, V_{CC}=600V		10		μs
V_F	Forward on voltage	T_j=25°C ,I_F=100A		1.85	2.15	V
		T_j=125°C ,I_F=100A		1.95		V
t_{rr}	Diode reverse recovery time	I_F=100A, V_R=600V di_F/dt=-600A/μs T_j=125°C		120		ns
I_{RRM}	Max. reverse recovery current	I_F=100A , V_R=600V T_j=125°C		37		A
$R_{th(j-c)}$	Thermal resistance(per chip)	IGBT		0.12		℃/W
		FWD		0.3		℃/W
Outline	M40					

NTC-Thermistor Characteristic Values

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	VALUE			UNIT
			Min.	Typ.	Max/	
R_{25}	Rated resistance	T_C=25°C		5.00		kΩ
△R/R	Deviation of R100	T_C=100°C ,R_{100}=493Ω	-5		5	%
P_{25}	Power dissipation	T_C=25°C			20.0	mW
$B_{25/50}$	B-value	$R_2=R_{25}exp[B_{25/50}(1/T_2-1/(298.15 K))]$		3375		K

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

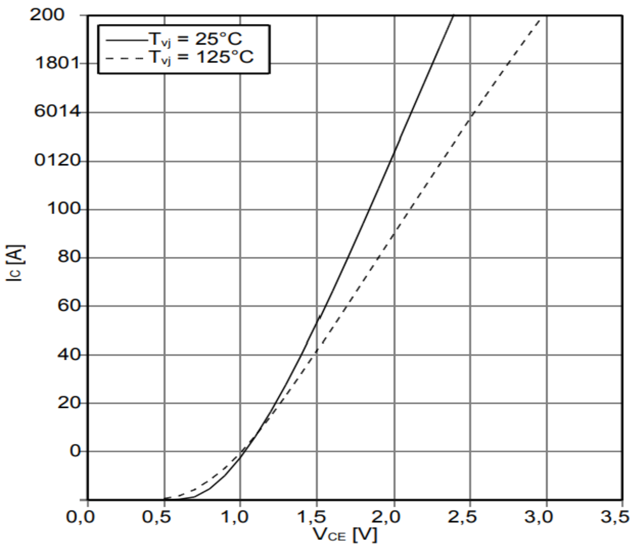


Fig.1

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

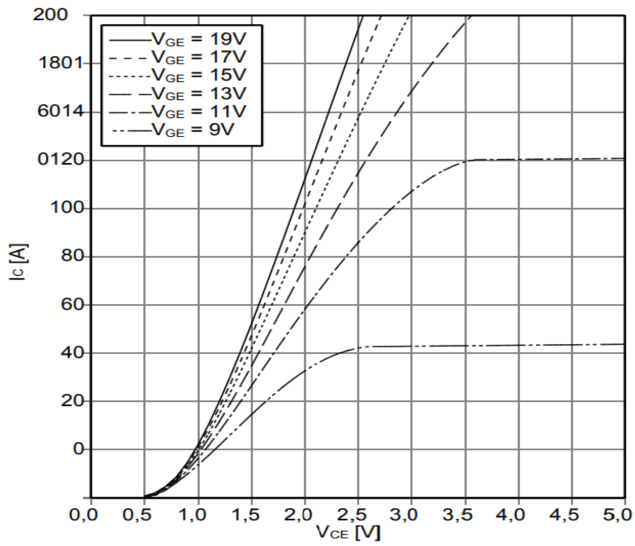


Fig.2

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

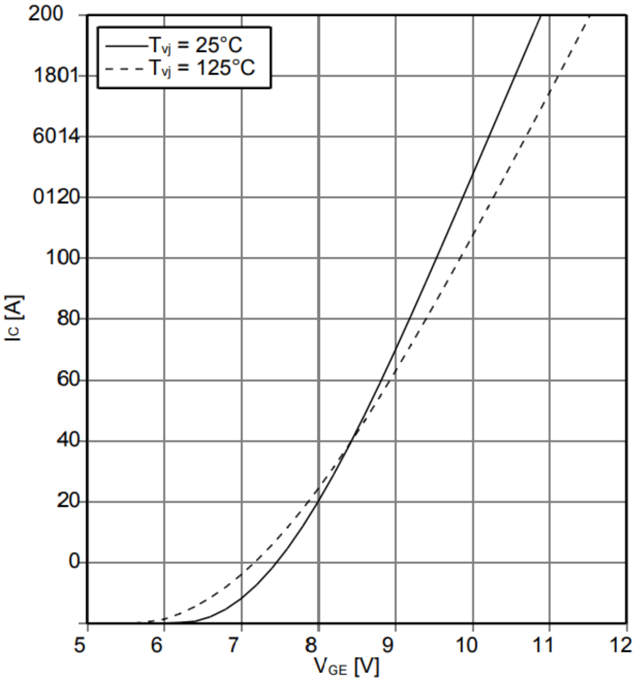


Fig.3

switching losses IGBT,Inverter (typical)
$E_{on} = f(I_C)$, $E_{off} = f(I_C)$
V_{GE} = ±15 V, R_{Gon} = 3.9 Ω, R_{Goff} = 3.9 Ω, V_{CE} = 600 V

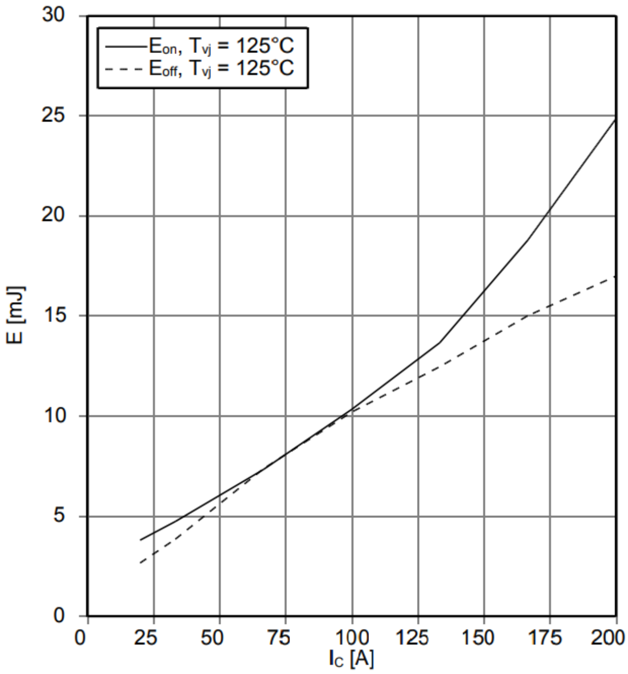


Fig.4

switching losses IGBT,Inverter (typical)
$E_{on} = f(R_G)$, $E_{off} = f(R_G)$
$V_{GE} = \pm15$ V, $I_C = 100$ A, $V_{CE} = 600$ V

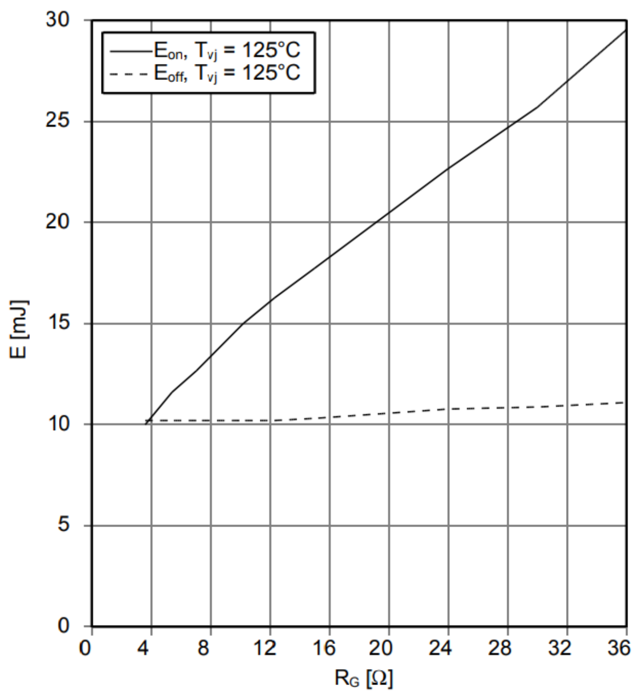


Fig.5

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

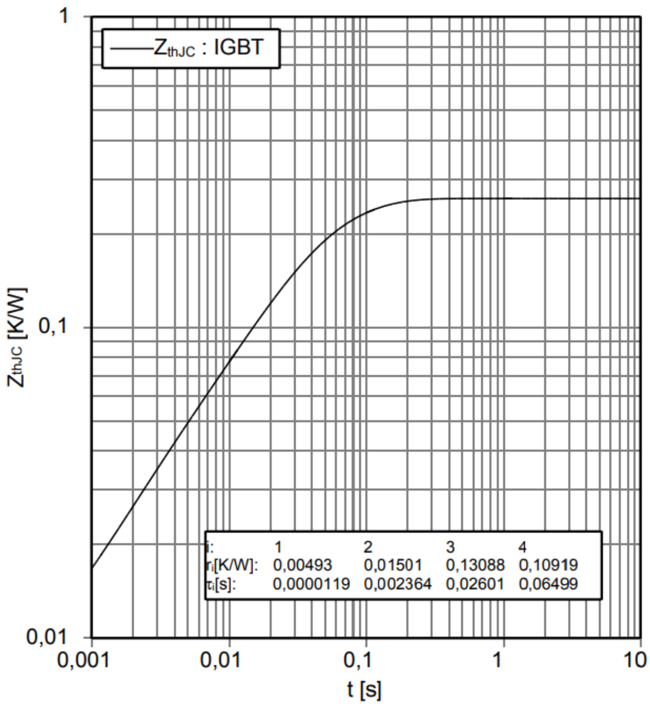


Fig.6

reverse bias safe operating area IGBT,Inverter (RBSOA)
$I_C = f(V_{CE})$
$V_{GE} = \pm15$ V, $R_{Goff} = 3.9\ \Omega$, $T_{vj} = 125°C$

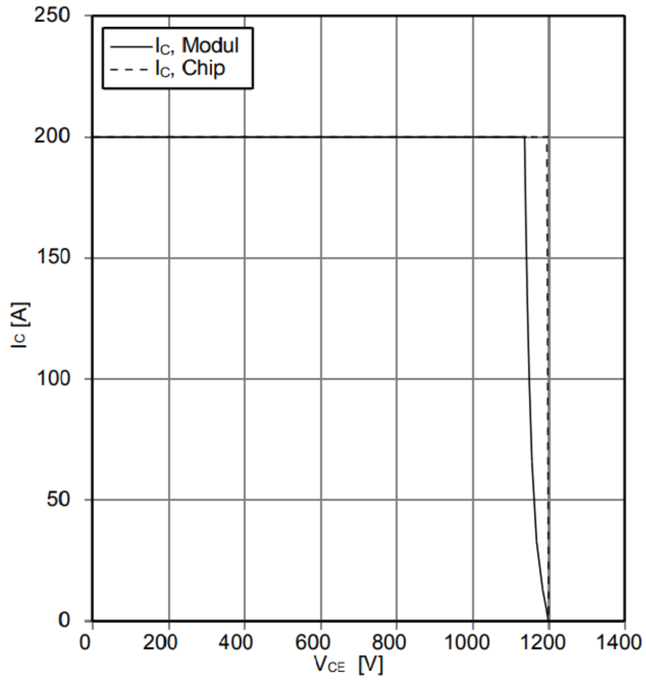


Fig.7

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

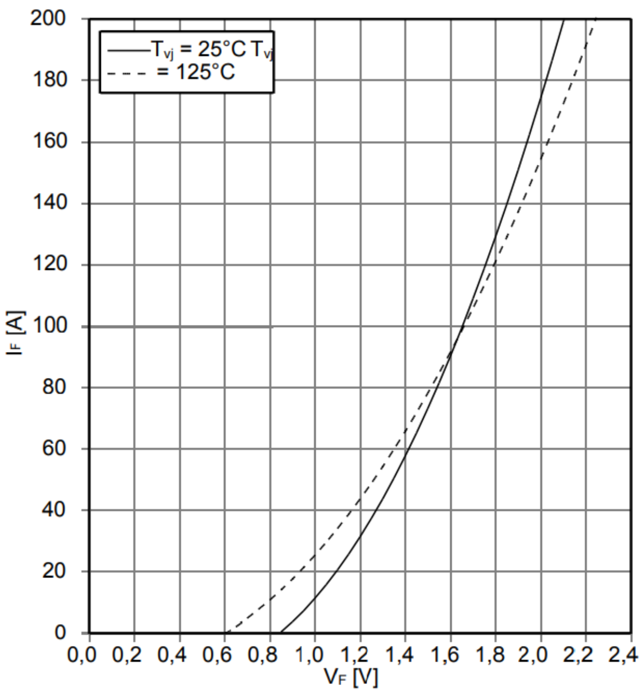


Fig.8

switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$R_{Gon} = 3.9\ \Omega$, $V_{CE} = 600$ V

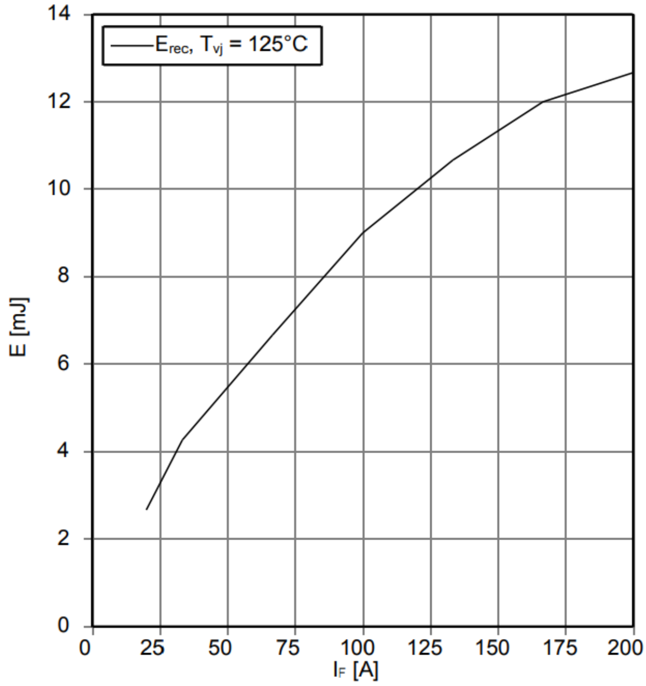


Fig.9

switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 100$ A, $V_{CE} = 600$ V

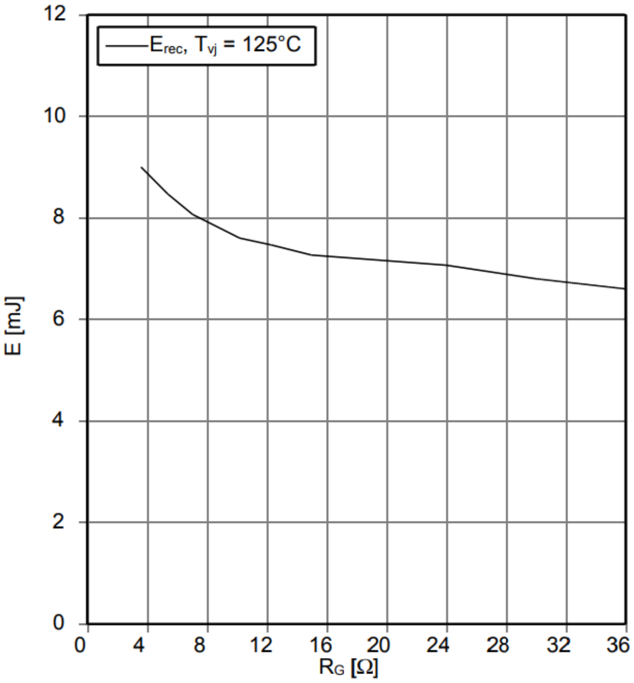


Fig.10

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

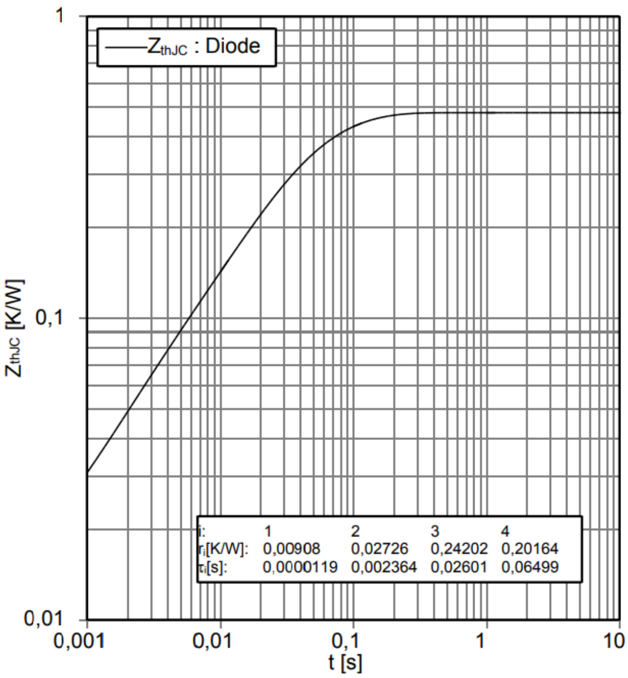
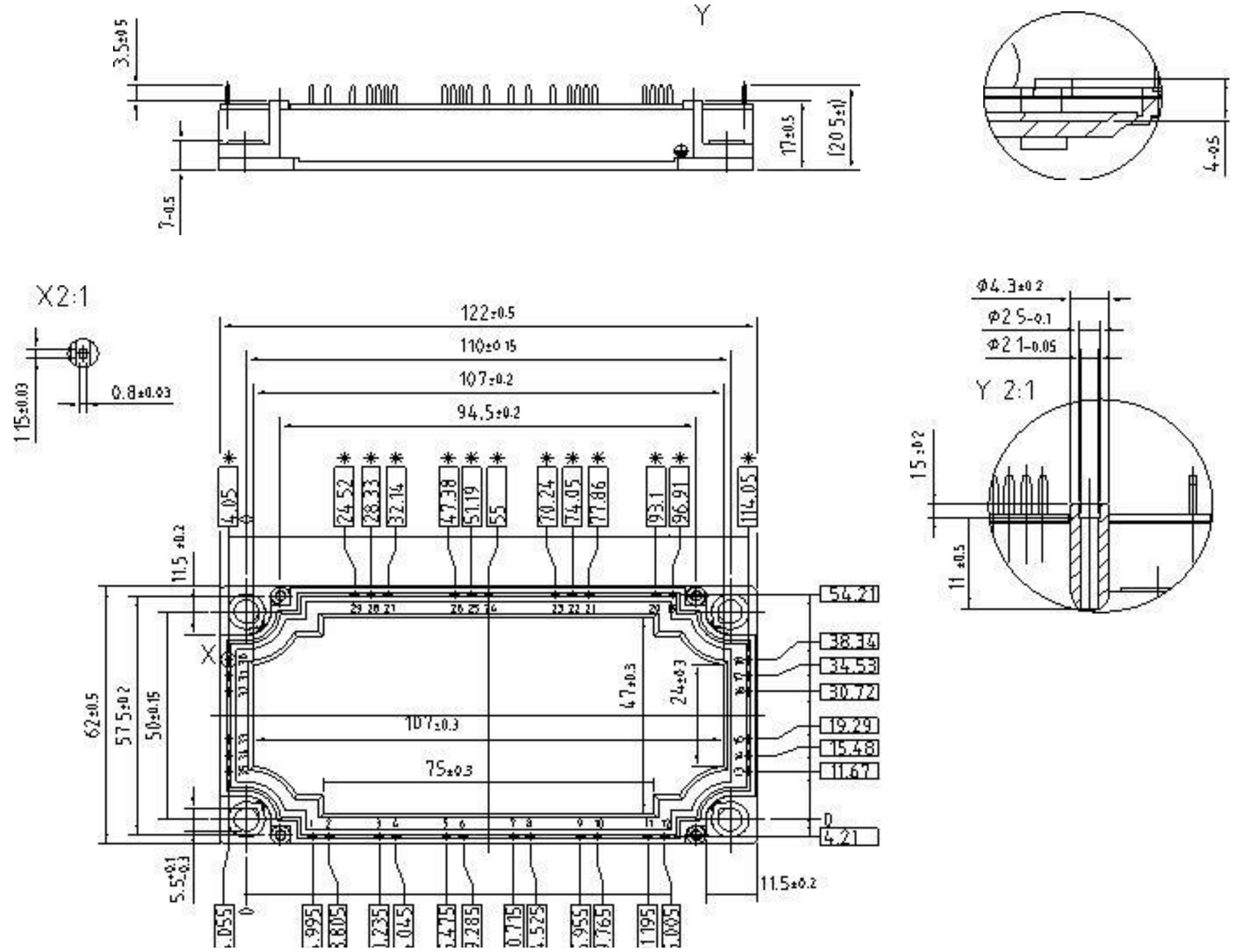
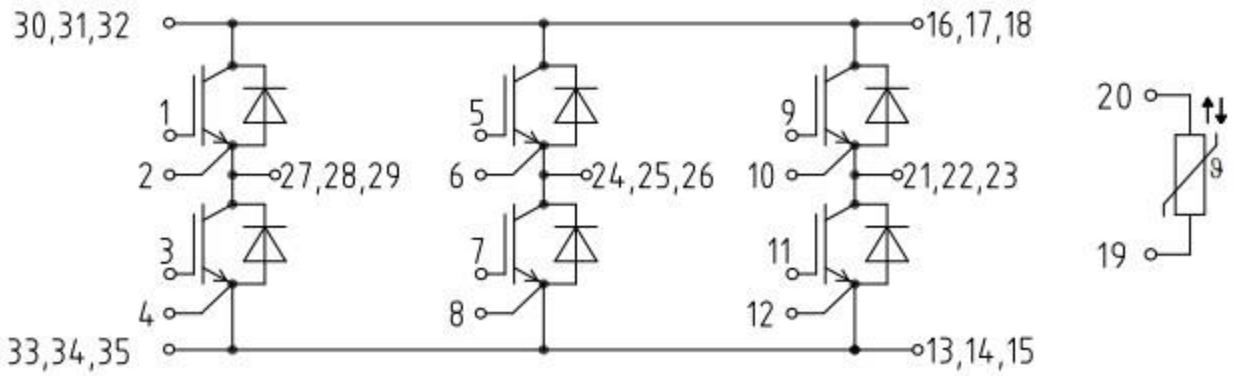


Fig.11





Unmarked dimensional tolerance：±0.5mm