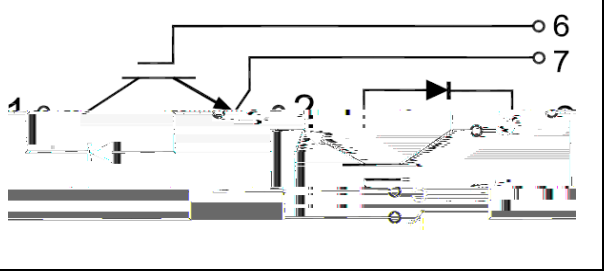
MG300HF12TFC2D



1200V
300A

- Motion/servo control
- High frequency switching application
- UPS (Uninterruptible Power Supplies)
- Welding machine

Circuit



- Low V_{CE}(sat) with trench technology
- Low switching losses especially Eoff
- V_{CE}(sat) with positive temperature coefficient
- High short circuit capability(10us)
- Including ultra fast & soft recovery anti-parallel FWD
- Low inductance package
- Maximum junction temperature 175℃

●

Collector-Emitter Voltage	V_{CES}	V_{GE}=0V, I_C=1mA, T_{vj}=25℃	1200	V
Continuous Collector Current	I_C	T_C=100℃	300	A
Repetitive Peak Collector Current	I_{CRM}	t_p=1ms	600	A
Gate-Emitter Voltage	V_{GES}	T_{vj}=25℃	±20	V
Total Power Dissipation	P_{tot}	T_C=25℃ T_{vjmax}=175℃	1700	W

www.21yangjie.com

www.21yangjie.com

●

Repetitive Peak Reverse Voltage	V_{RRM}	T_{vj}=25℃	1200	V
Continuous DC Forward Current	I_F		300	A
Repetitive Peak Forward Current	I_{FRM}	t_p=1ms	600	A

Forward Voltage	V_F	I_F=300A,T_{vj}=25℃		2.00	2.80	V
		I_F=300A,T_{vj}=125℃		1.85		
		I_F=300A,T_{vj}=150℃		1.75		
Recovered Charge	Q_{rr}	I_F=300A V_R=600V -di_F/dt=4500A/us T_{vj}=25℃		20		uC
Peak Reverse Recovery Current	I_{rr}			145		A
Reverse Recovery Energy	E_{rec}			7.3		mJ
Recovered Charge	Q_{rr}	I_F=300A V_R=600V -di_F/dt=4500A/us T_{vj}=150℃		45		uC
Peak Reverse Recovery Current	I_{rr}			205		A
Reverse Recovery Energy	E_{rec}			16.7		mJ

www.21yangjie.com

●

Isolation Voltage	V_{isol}	t=1min,f=50Hz	2500			V
Maximum Junction Temperature	T_{jmax}				175	℃
Operating Junction Temperature	$T_{vj\ op}$		-40		150	℃
Storage Temperature	T_{stg}		-40		125	℃
Thermal Resistance Junction to Case	$R_{\theta JC}$	per IGBT			0.09	K/W
		per Diode			0.16	
Thermal Resistance Case to Sink	$R_{\theta CS}$	Conductive grease applied		0.012	0.035	K/W
Module ElectrodesTorque	M_t	Recommended(M6)	3.0		5.0	N·m
Module-to-SinkTorque	M_s	Recommended(M6)	3.0		5.0	N·m
Weight of Module	G			315		g

www.21yangjie.com

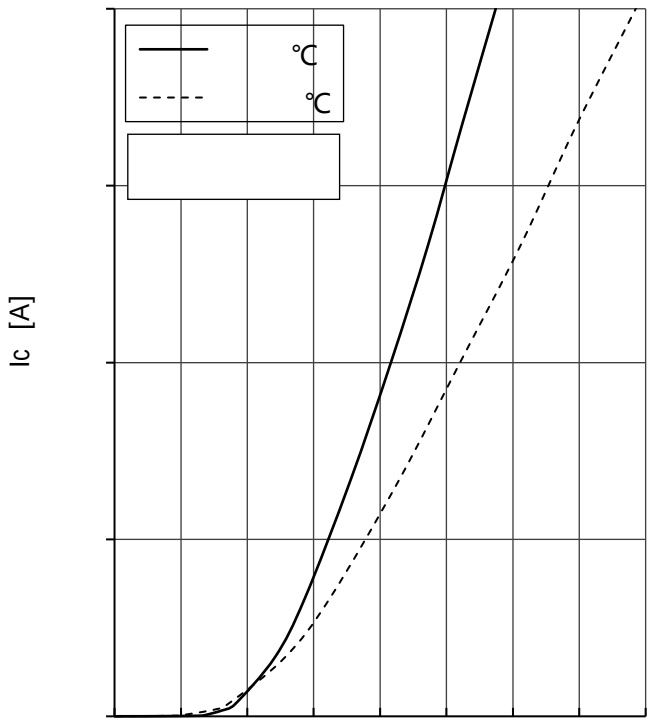


Fig1.IGBT Output Characteristics

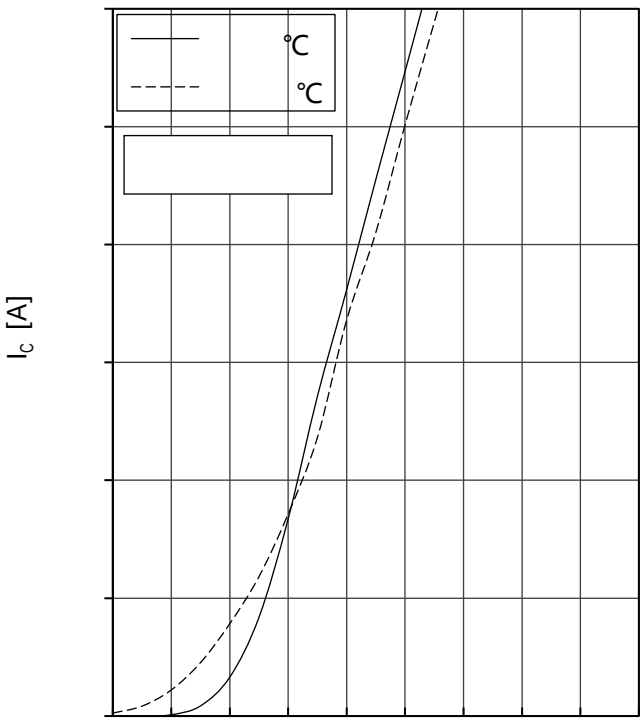


Fig2.IGBT Transfer Characteristics

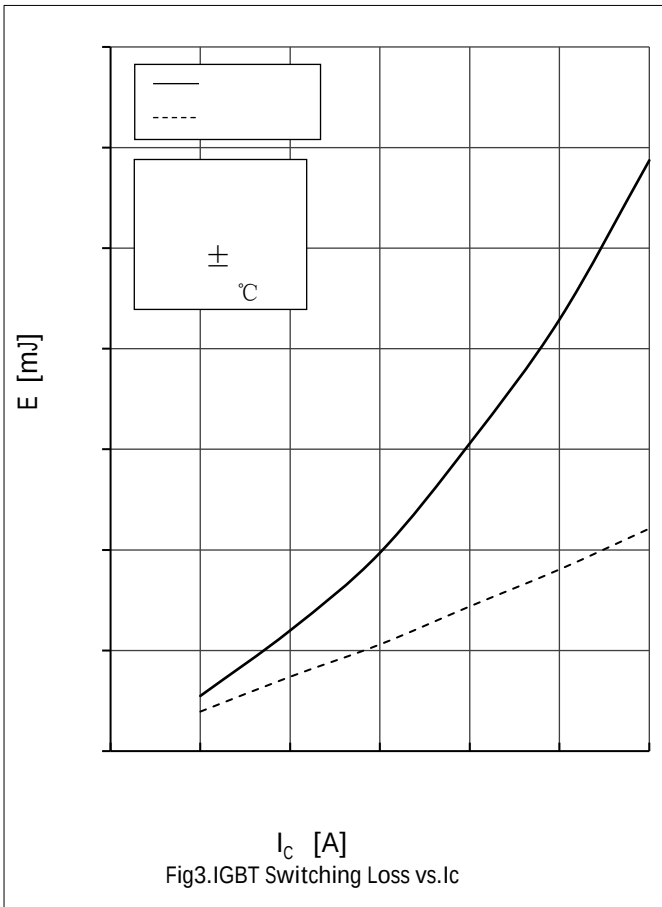


Fig3.IGBT Switching Loss vs.Ic

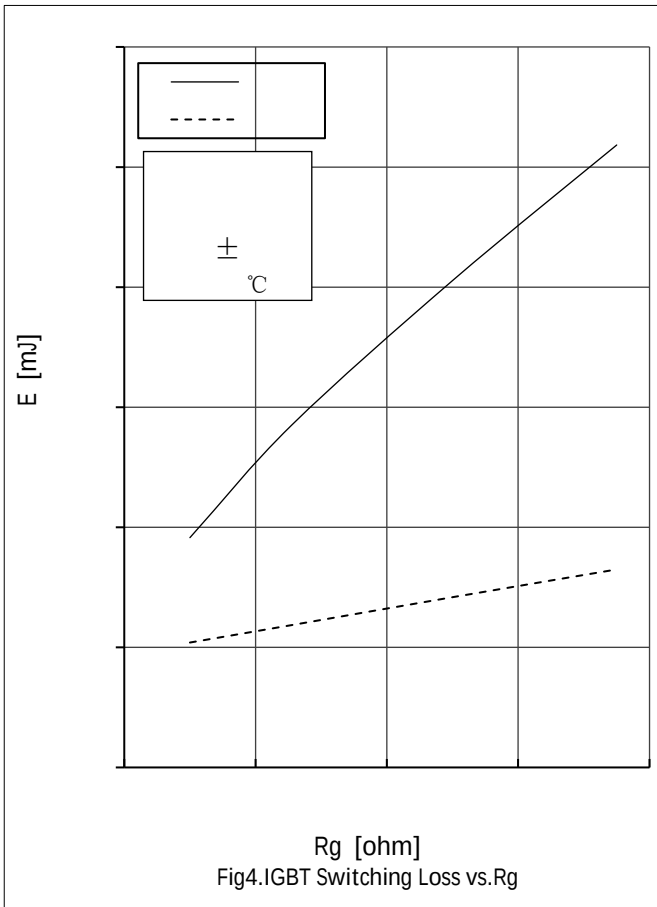


Fig4.IGBT Switching Loss vs.Rg

www.21yangjie.com

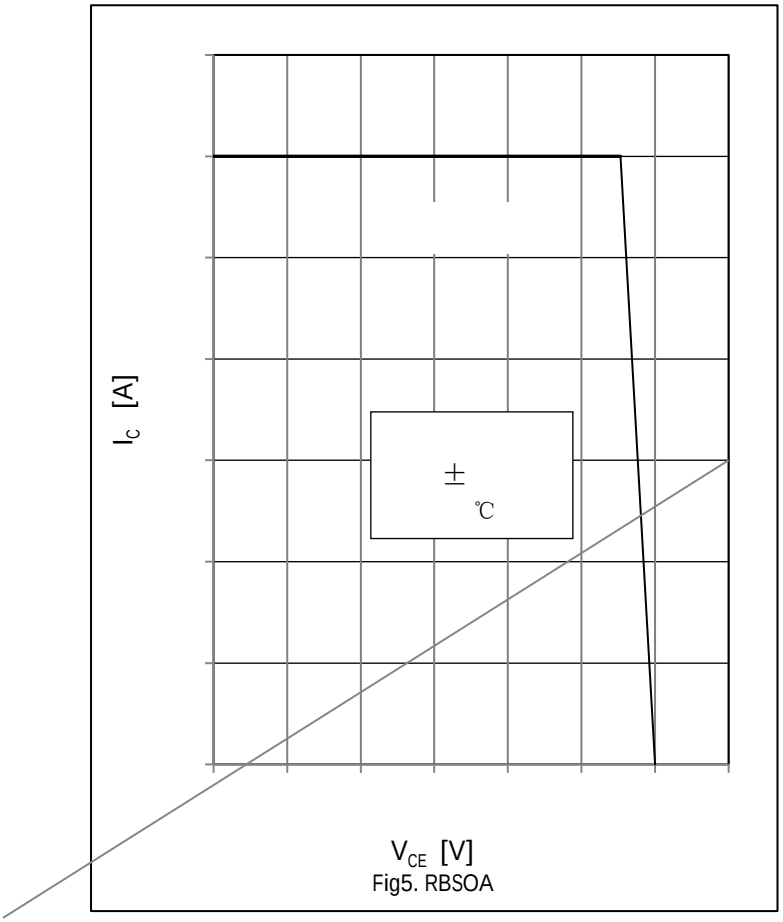
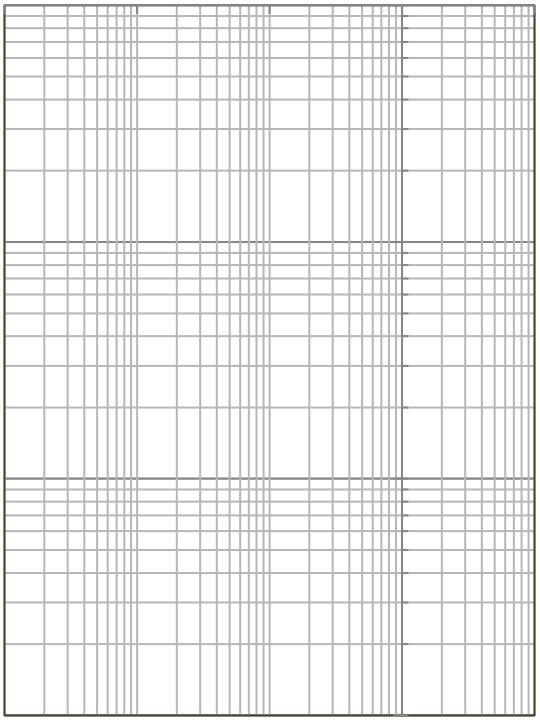


Fig5. RBSOA



www.21yangjie.com

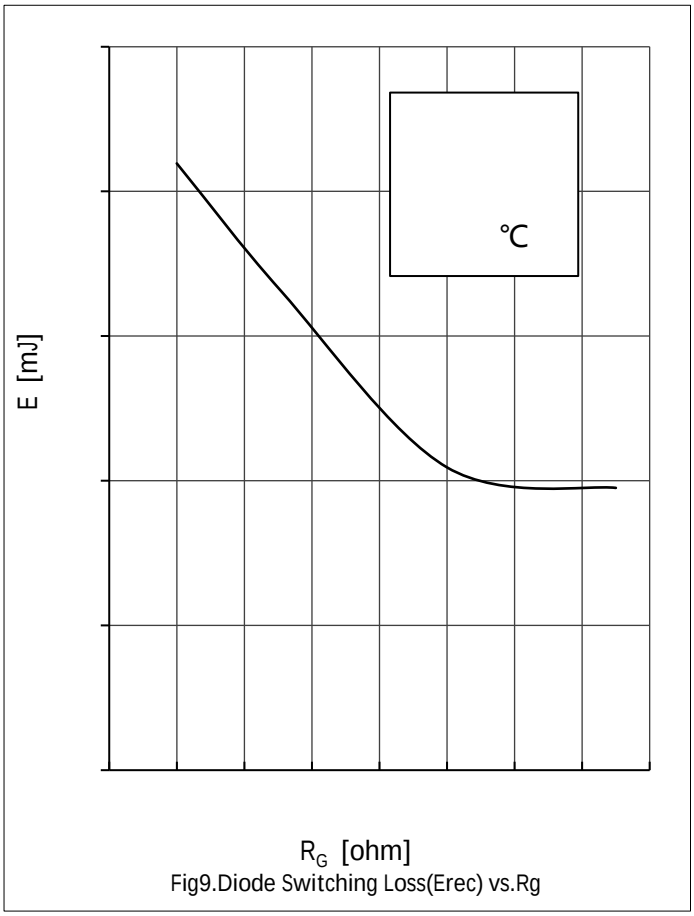


Fig9.Diode Switching Loss(Erec) vs.Rg

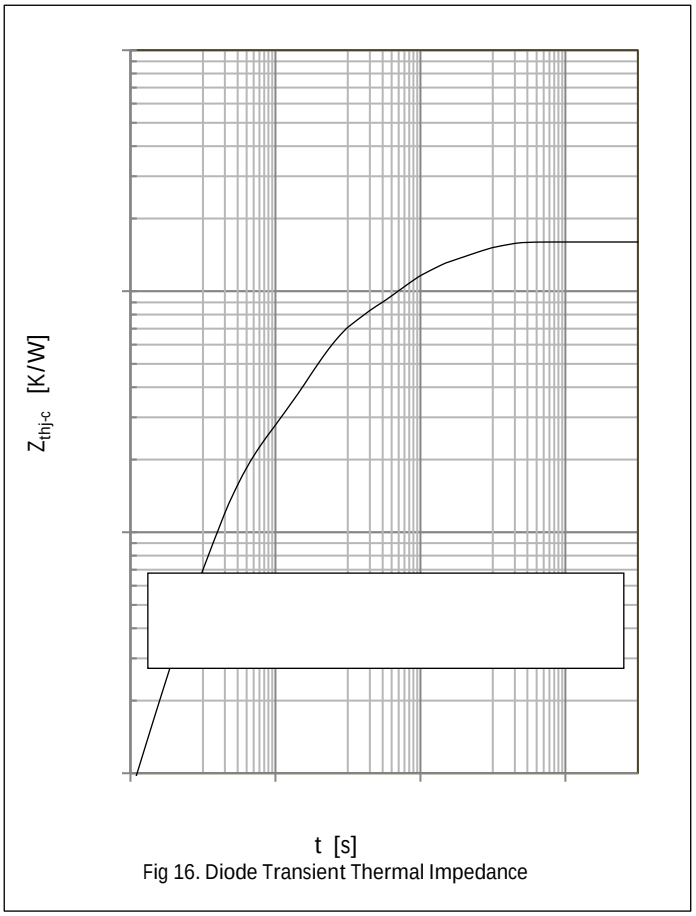
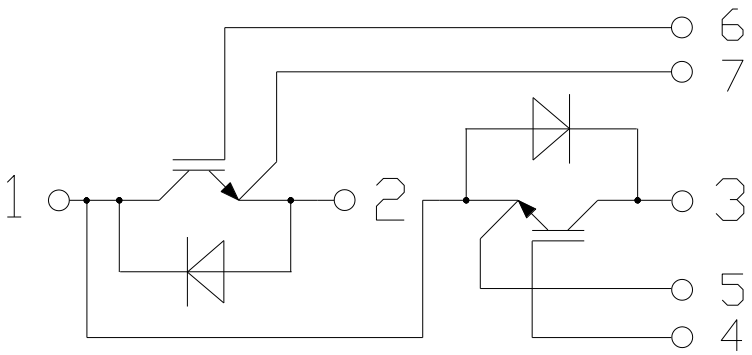
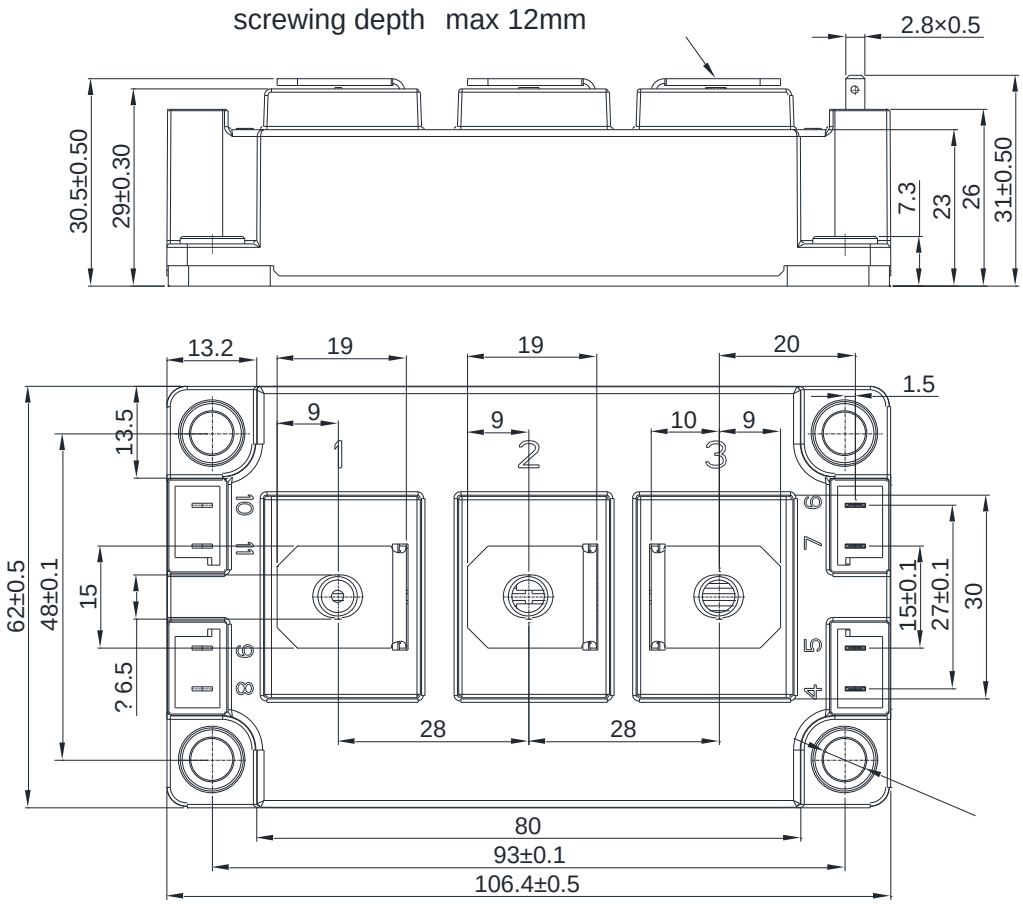


Fig 16. Diode Transient Thermal Impedance

www.21yangjie.com



Dimensions in Millimeters



www.21yangjie.com

Disclaimer