62mm Standard housing IGBT Module

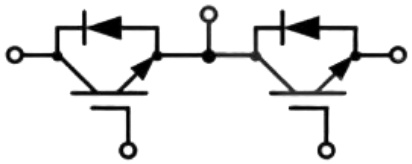
VcEs=1200V,Ic=450A,VCE(sat)=2.15V

Features:

- Low collector to emitter saturation voltage
- Switching-Loss rating includes all "tail"losses
- Optimized for Fast Switching
- Short circuit withstands time(10us min.)

Applications:

- Uninterruptible power supply
- Induction heating
- AC Inverter drive
- High power converters



Maximum rated values, Inverter(IGBT)

Maximum(Tj=25℃ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Collector-Emitter voltage	Tv=25℃	VcES	1200	V
Continuous DC collector current	Tc=100℃,Tvyj max=175℃	Ic nom	450	A
Repetitive peak collector current	tp=1ms	IcRM	900	A
Total power dissipation	Tc=25℃,Tvjmax=175℃	Ptot	2308	W
Gate emitter voltage		VGE	±20	V

Characteristic Values

Output capacitance			Coes		2.5		nF
Reverse transfer capacitance			Cres		1.1		
Collector-emiter cut-off current	VcE=1200V,VGE=0VTy=25℃		IcES			5	mA
Gate-emitter leakage current	VCE=0V,VGE=20VTvj=25℃		IGES			400	nA
Turn-on delay time		Tvy=25℃ Tv=125℃ Ty=150℃	ta con)		160 180 185		
Rise time		Ty=25℃ Tv=125℃	tr		60		

	Ic=450A,VcE=600V VGE=±15V,RG=1Ω (inductive load)	Tv=150℃			65 70		ns
Turn-off delay time		Tvy=25℃ Ty=125℃ Tv=150℃	ta coff)		270 300 310		
Fall time		Tv=25℃ Tvy=125℃ Tyj=150℃	tf		200 210 250		
Turn-on energy loss per pulse		Tv=25℃ Ty=125℃ Tv=150℃	Eon		16.7 28.6 35.9		mJ
Turn-offenergy loss per pulse		Tvy=25℃ Tv=125℃ Ty=150℃	Eoff		40.9 44.7 48.3		
SC data	VGE≤15V,VcE=800VVCEmax=VCE S- LscE ·di/dt tp≤10us,Tyj=150℃		ISC		1600		A
Thermal resistance,junction to case	Single IGBT unit		RmIC			0.065	K/W
Temperature under switching conditions			Tvjop	-40		150	℃

Diode,Inverter

Maximum Ratings(TJ=25℃unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Repetitive peak reverse voltage	Tvj=25℃	VRRM	1200	V
Continuous DC forward current		I	450	A
Repetitive peak forward current	tp=1ms	IFRM	900	A
I²t-value	tp=10ms,sin180°,T=25℃	I²t	31500	A²S

Module

Parameter	Conditions	Symbol		Value		Unit
Isolation test voltage	RMS,f=50Hz,t=1min	ViSOL		4000		V

Internal isolation				Al_2O_3		
Storage temperature		Tstg	-40		125	℃
Mounting torque for modul mounting		M	3.0		5.0	Nm
Weight		W		300		g

CHARACTERISTICS DIAGRAMS

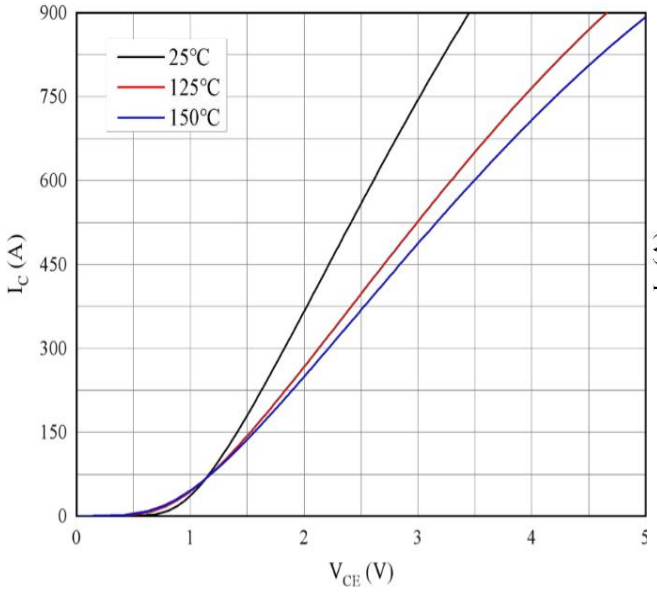
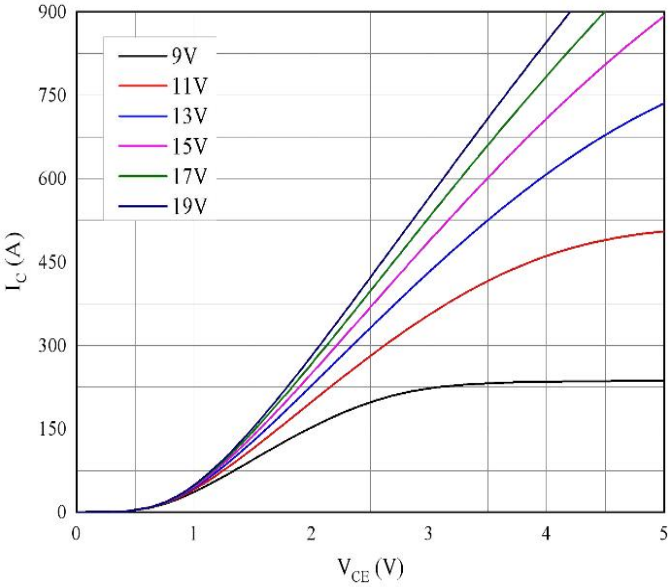


Figure1. Typical output characteristics(VGE=15V)



Figue2. Typical output characteristics(Tvj=150°C)

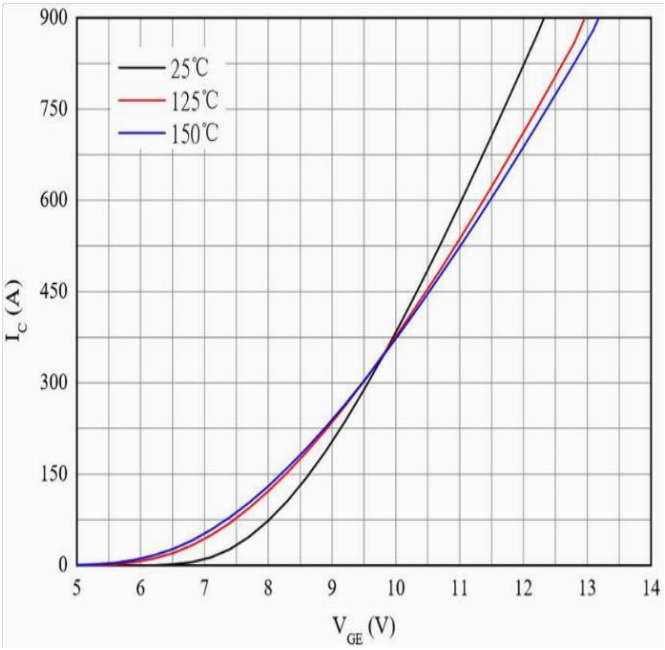


Figure3. Typical transfer characteristic(VCE=20V

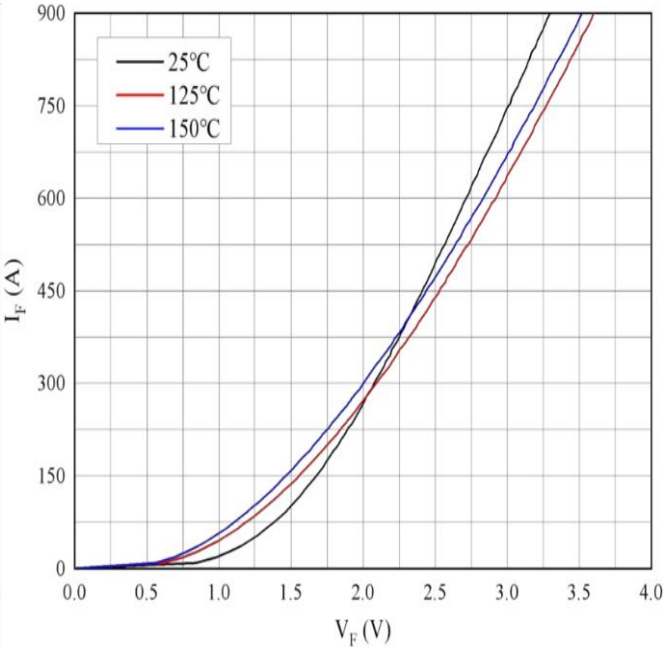


Figure4. Forward characteristic of Diode

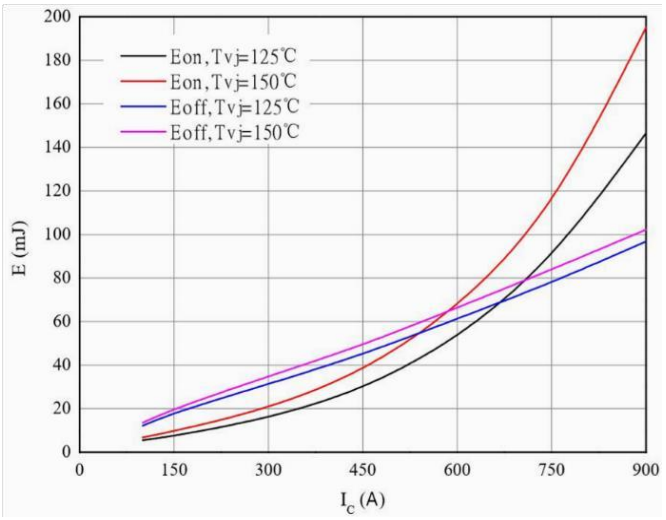


Figure5. Switching losses of IGBT

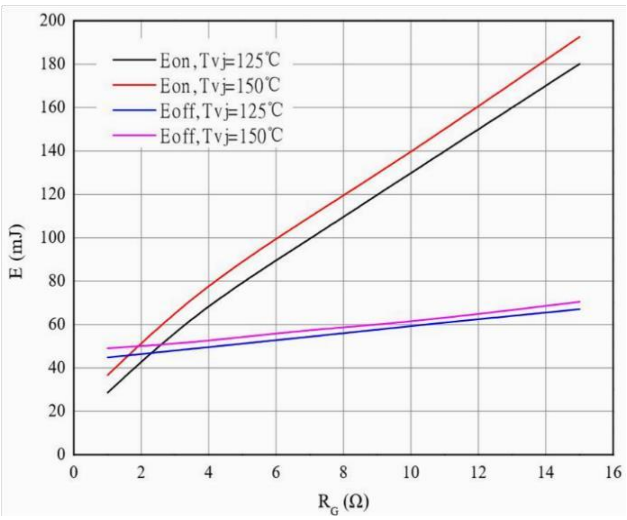


Figure6. Switching losses of IGBT

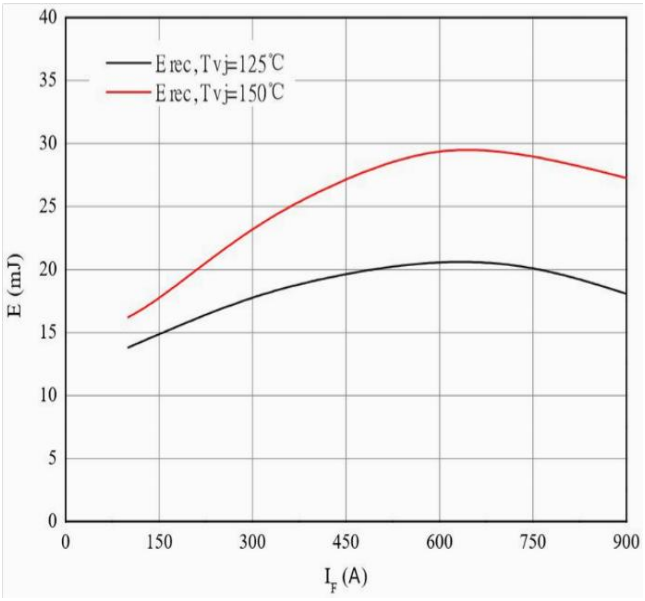


Figure 7.Switching losses of Diode

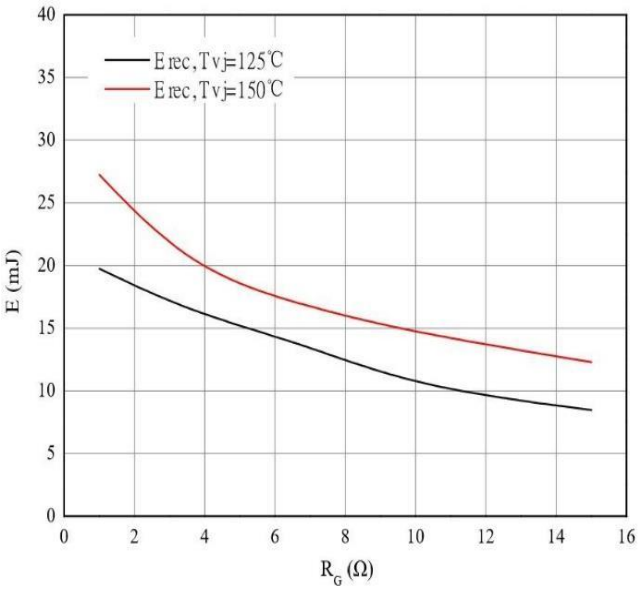


Figure 8.Switching losses of Diode

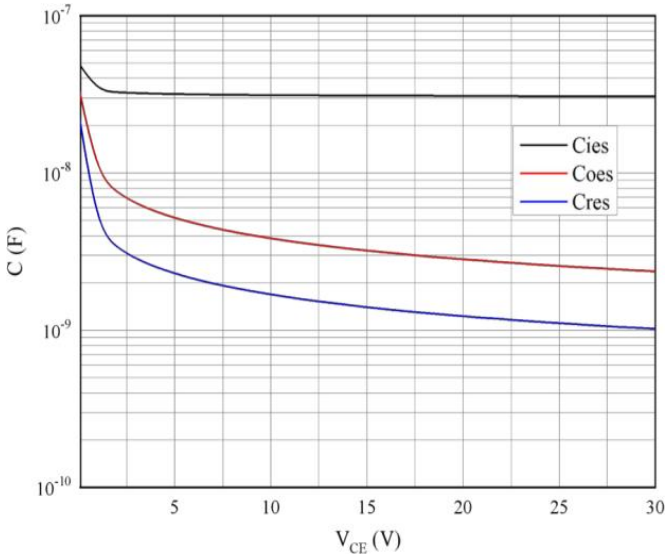
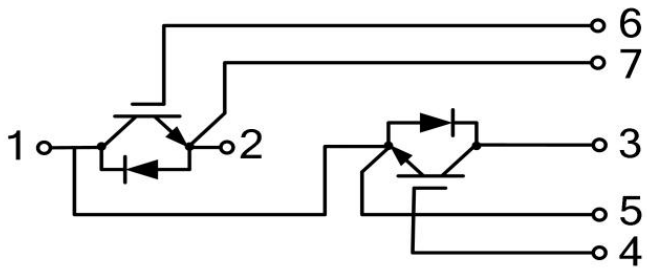
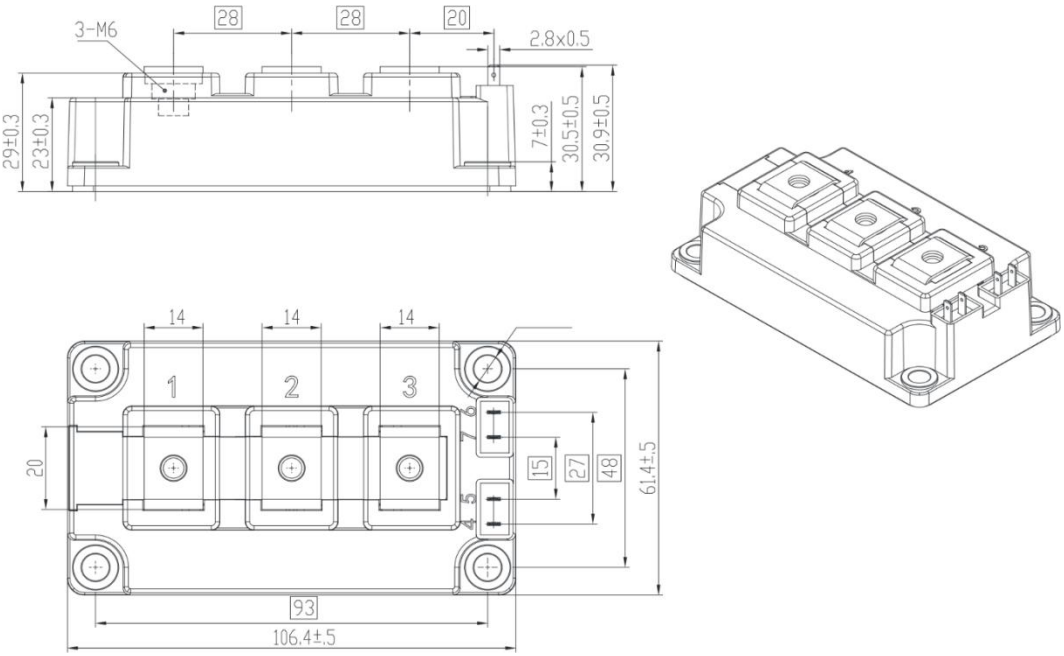


Figure 9.Capacitance characteristic

CIRCUIT DIAGRAM



PACKAGE OUTLINES



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Date of change	Rev #	Revise content
2023/9/3	A/0	First edition release