1200V
10A

- Motor Drivers
- AC and DC servo drive amplifier
- UPS (Uninterruptible Power Supplies)

- Low switching losses
- Low $V_{ce(sat)}$ with positive temperature coefficient
-

Gate-emitter Threshold Voltage	$V_{GE(th)}$	V_{GE}=V_{CE}, I_C =0.5mA,T_{vj}=25℃	5.2	6.0	6.8	V
Collector-Emitter Cut-off Current	I_{CES}	V_{CE}=1200V,V_{GE}=0V, T_{vj}=25℃			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	Ic=10A,V_{GE}=15V, T_{vj}=25℃		1.85	2.50	V
		Ic=10A,V_{GE}=15V, T_{vj}=150℃		2.25		
Gate Charge	Q_G			0.12		uC
Input Capacitance	C_{ies}	V_{CE}=25V, V_{GE} =0V, f=1MHz, T_{vj}=25℃		0.9		nF
Reverse Transfer Capacitance	C_{res}			0.03		nF
Gate-Emitter leakage current	I_{GES}	V_{CE}=0 V, V_{GE}=20 V, T_{vj} = 25℃			400	nA
Turn-on Delay Time	$t_{d(on)}$	I_C =10A V_{CE} = 600 V V_{GE} = ±15V R_G=47Ω T_{vj}=25℃		84		ns
Rise Time	t_r			80		ns
Turn-off Delay Time	$t_{d(off)}$			150		ns
Fall Time	t_f			145		ns
Energy Dissipation During Turn-on Time	E_{on}			1.20		mJ
Energy Dissipation During Turn-off Time	E_{off}			0.60		mJ
Turn-on Delay Time	$t_{d(on)}$	I_C =10A V_{CE} = 600 V V_{GE} = ±15V R_G=47Ω T_{vj}=125℃		85		ns
Rise Time	t_r			62		ns
Turn-off Delay Time	$t_{d(off)}$			270		ns
Fall Time	t_f			170		ns
Energy Dissipation During Turn-on Time	E_{on}			1.50		mJ
Energy Dissipation During Turn-off Time	E_{off}			0.8		mJ
SC Data	I_{sc}	T_p≤10us,V_{GE}=15V,T_{vj}=150℃, V_{cc}=900V,V_{CEM}≤1200V		70		A

Repetitive Peak Reverse Voltage	V_{RRM}	T_{vj}=25℃	1200	V
Continuous DC Forward Current	I_F		10	A
Repetitive Peak Forward Current	I_{FRM}	t_p=1ms	20	A
I^2t-value	I^2t	V_R=0,t_p=10ms,T_{vj}=150℃	16.0	A^2s

Collector-Emitter Voltage	V_{CES}	V_{GE}=0V, I_C =1mA, T_{vj}=25℃	1200	V
Continuous Collector Current	I_C	T_c=100℃, T_{vjmax}=175℃	10	A
Repetitive Peak Collector Current	I_{CRM}	tp=1ms	20	A
Gate-Emitter Voltage	V_{GES}	T_{vj}=25℃	±20	V
Total Power Dissipation	P_{tot}	T_c=25℃, T_{vjmax}=175℃	92	W

Gate-emitter Threshold Voltage	$V_{GE(th)}$	V_{GE}=V_{CE}, I_C =0.5mA,T_{vj}=25℃	5.2	6.0	6.8	V
Collector-Emitter Cut-off Current	I_{CES}	V_{CE}=1200V,V_{GE}=0V, T_{vj}=25℃			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	Ic=10A,V_{GE}=15V, T_{vj}=25℃		1.85	2.25	V
		Ic=10A,V_{GE}=15V, T_{vj}=125℃		2.15		
Gate Charge	Q_G			0.09		uC
Input Capacitance	C_{ies}	V_{CE}=25V, V_{GE} =0V, f=1MHz, T_{vj}=25℃		1.35		nF
Reverse Transfer Capacitance	C_{res}			0.08		nF
Gate-Emitter leakage current	I_{GES}	V_{CE}=0 V, V_{GE}=20 V,T_{vj} = 25℃			400	nA
Turn-on Delay Time	$t_{d(on)}$	I_C =10A V_{CE} = 600 V V_{GE} = ±15V R_G=47Ω T_{vj}=25℃		80		ns
Rise Time	t_r			78		ns
Turn-off Delay Time	$t_{d(off)}$			150		ns
Fall Time	t_f			148		ns
Energy Dissipation During Turn-on Time	E_{on}			1.10		mJ
Energy Dissipation During Turn-off Time	E_{off}			0.83		mJ

Turn-on Delay Time	$t_{d(on)}$	I_C =10A V_{CE} = 600 V V_{GE} = ±15V R_G=47Ω T_{vj}=125℃		82		ns
Rise Time	t_r			63		ns
Turn-off Delay Time	$t_{d(off)}$			258		ns
Fall Time	t_f			180		ns
Energy Dissipation During Turn-on Time	E_{on}			1.47		mJ
Energy Dissipation During Turn-off Time	E_{off}			0.81		mJ
SC Data	I_{sc}	T_p≤10us,V_{GE}=15V,Tv_j=150℃, V_{cc}=900V,V_{CEM}≤1200V		70		A

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Repetitive Peak Reverse Voltage	V_{RRM}	T_j=25℃		1200		V
Continuous DC Forward Current	I_F			10		A
Repetitive Peak Forward Current	I_{FRM}	tp=1ms		20		A
I^2t-value	I^2t	V_R=0,t_p=10ms,T_j=125℃		16.0		A^2s

Forward Voltage	V_F	I_F=10A,T_{vj}=25℃		2.0	2.80	V
		I_F=10A,T_{vj}=125℃		2.10		
Recovered Charge	Q_{rr}	I_F =10 A V_R=600V -di_F/dt =500A/us T_{vj}=25℃		0.90		uC
Peak Reverse Recovery Current	I_{rr}			12.5		A
Reverse Recovery Energy	E_{rec}			0.25		mJ
Recovered Charge	Q_{rr}	I_F =10 A V_R=600V -di_F/dt =500A/us T_{vj}=125℃		1.70		uC
Peak Reverse Recovery Current	I_{rr}			10.4		A
Reverse Recovery Energy	E_{rec}			0.50		mJ

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Repetitive Peak Reverse Voltage	V_{RRM}	T_j=25℃	1600	V
Average output Current 50/60Hz, sine wave	$I_{F(AV)}$	T_c=100℃	10	A
Maximum RMS Current at Rectifier Output	I_{RMSM}	T_c=100℃	20	A

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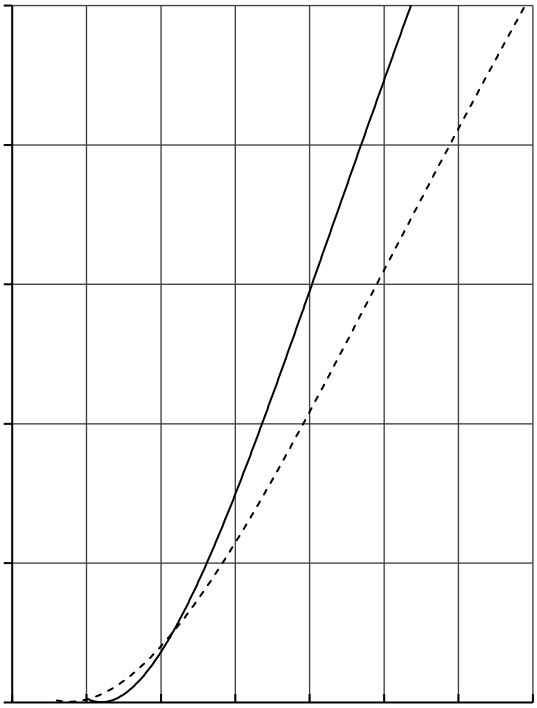
Isolation voltage	V_{isol}	t=1min,f=50Hz	2500			V
Maximum Junction Temperature	T_{jmax}				175	℃
Operating Junction Temperature	$T_{vj\ op}$		-40		150	℃
Storage Temperature	T_{stg}		-40		150	℃
Stray-inductance-module	L_{SCE}			60		nH
Module lead resistance, terminals-chip	$R_{cc'+EE'}$	T_C=25℃, per switch		4.0		mΩ
	$R_{AA'+CC'}$			3.0		
Thermal Resistance Junction-to Case	$R_{\theta JC}$	per IGBT-inverter			1.25	K/W
		per Diode-inverter			1.64	
		per IGBT-brake-copper			1.30	
		per Diode-chopper			2.39	
		per Diode-rectifier			1.17	
Thermal Resistance Case-to Sink	$R_{\theta CS}$	per IGBT-inverter		0.40		K/W
		per Diode-inverter		0.72		
		per IGBT-brake-copper		0.53		
		per Diode-chopper		0.77		
		per Diode-rectifier		1.10		
		per Module		0.02		
Mounting Force Per Clamp	F		3.0		6.0	N
Weight of Module	G			180		g



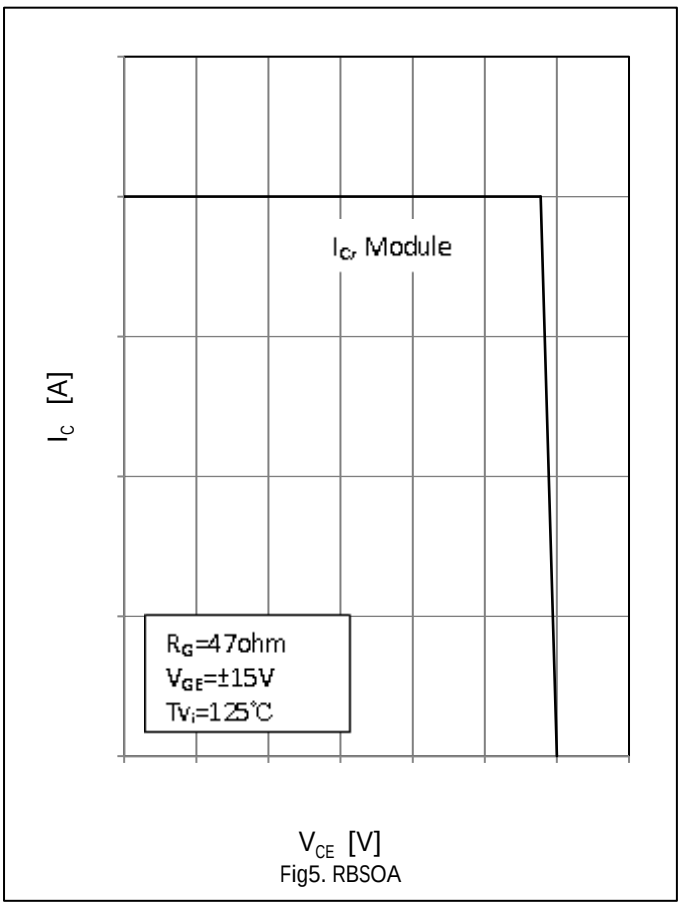


Fig5. RBSOA

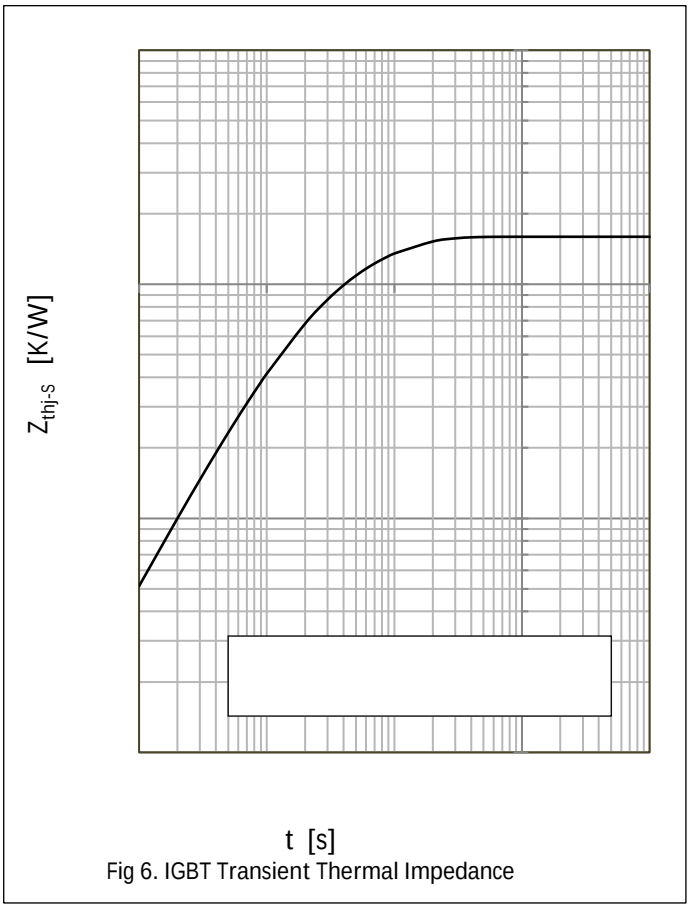


Fig 6. IGBT Transient Thermal Impedance

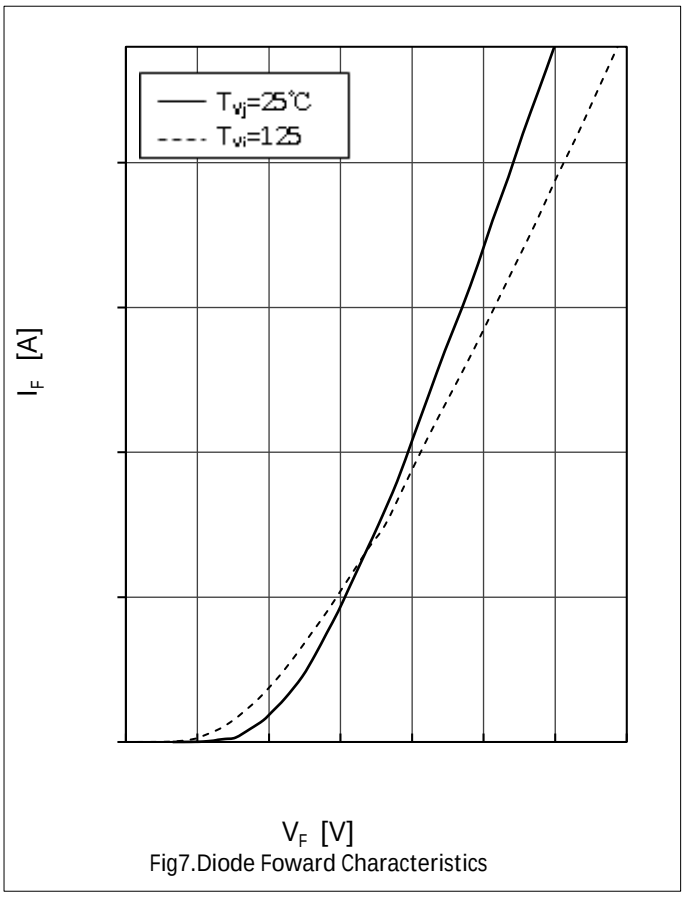


Fig7.Diode Foward Characteristics

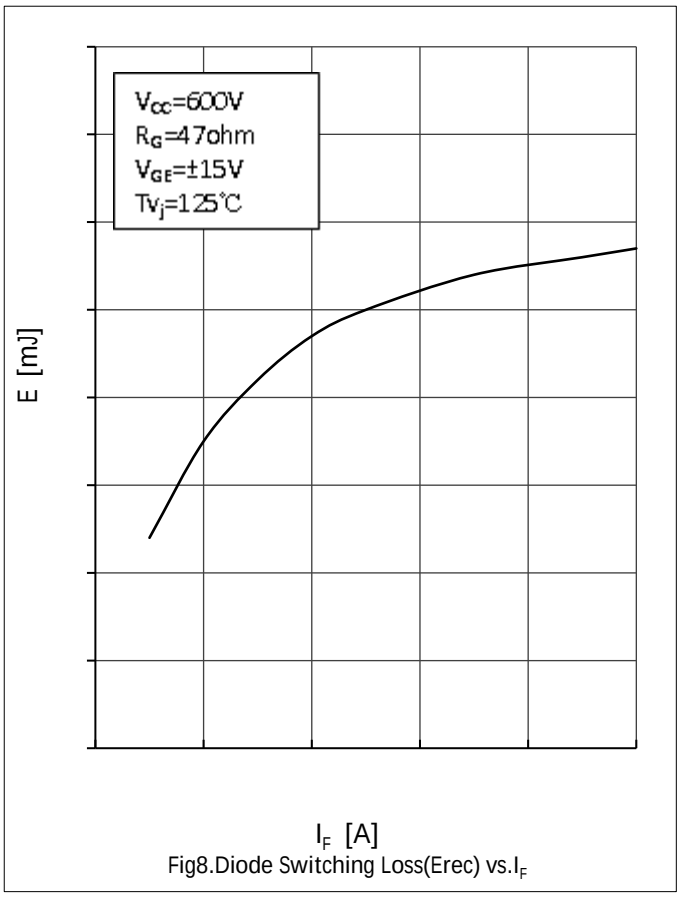


Fig8.Diode Switching Loss(Erec) vs.I_F

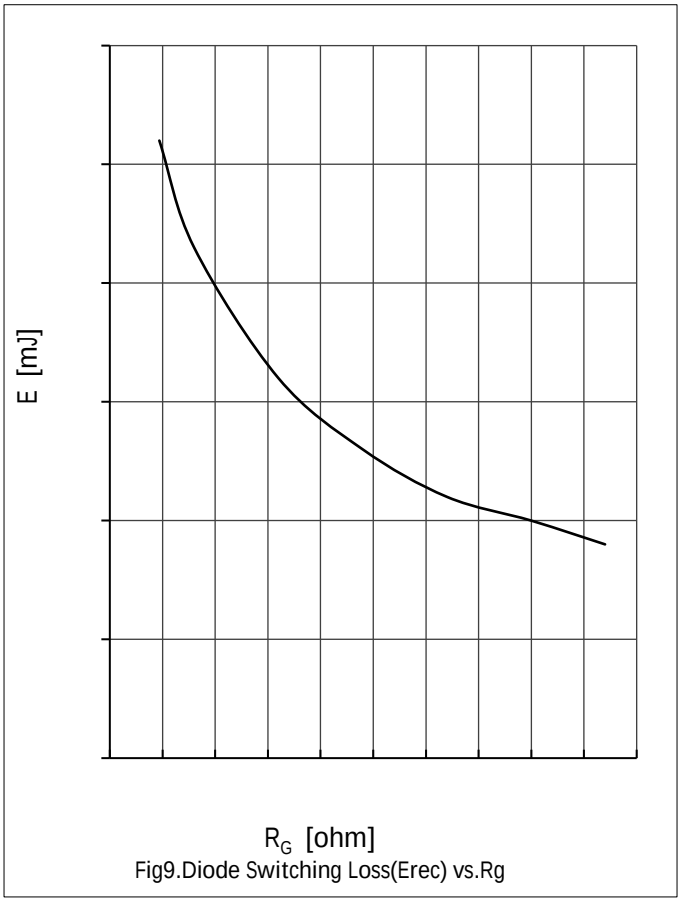
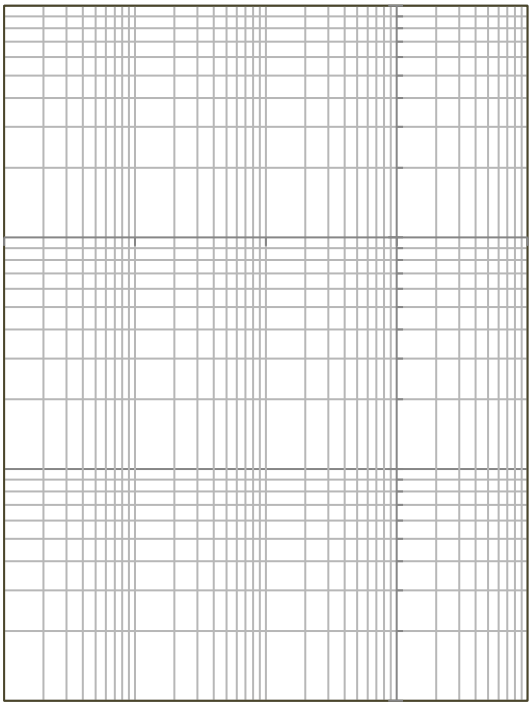


Fig9.Diode Switching Loss(Erec) vs.Rg



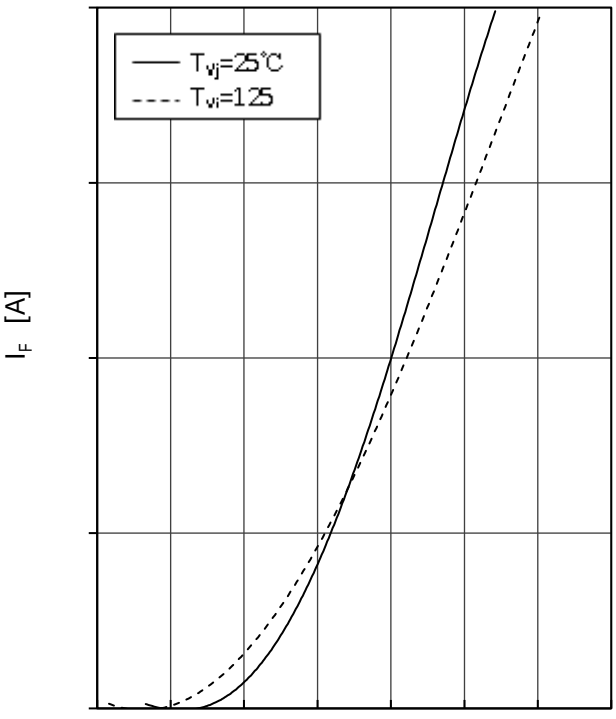
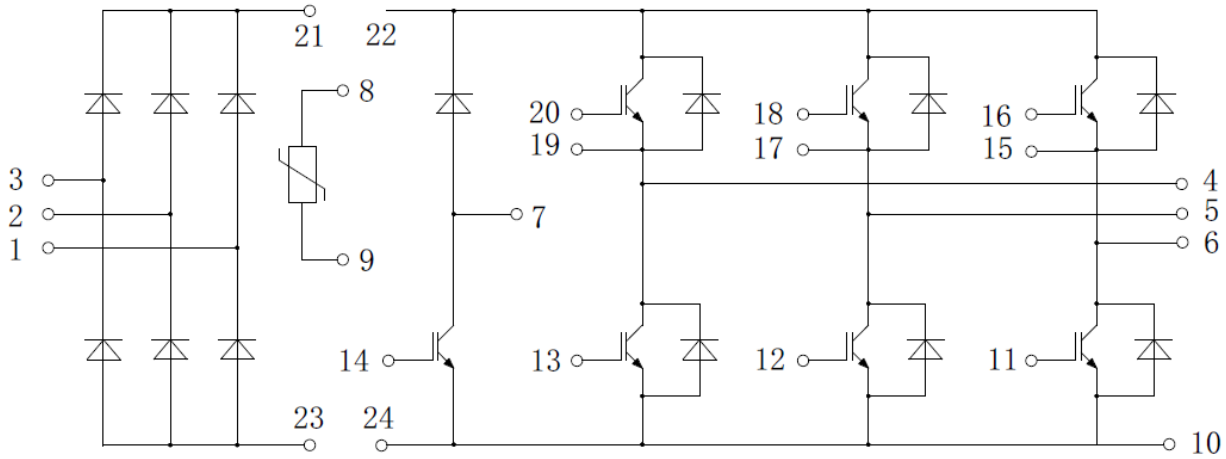


Fig13. Diode-brake-chopper Forward Characteristics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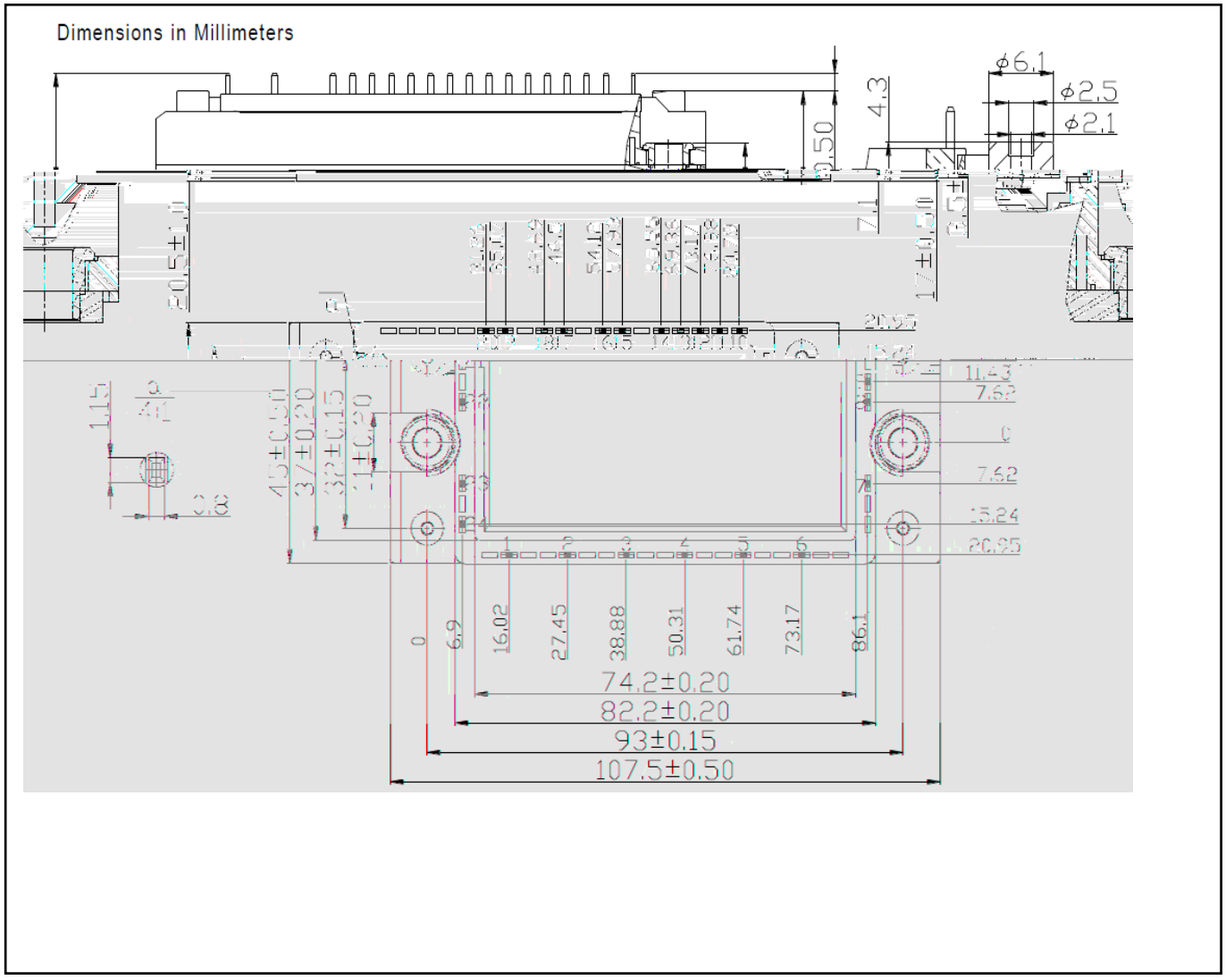
Dimensions in Millimeters
74.2±0.20
82.2±0.20
93±0.15
107.5±0.50