

Features

- Low Switching Losses
- VCEsat with positive Temperature Coefficient
- Low VCEsat

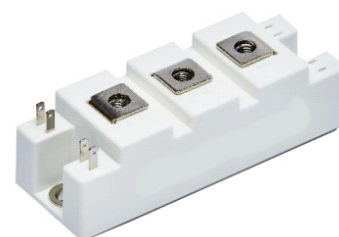
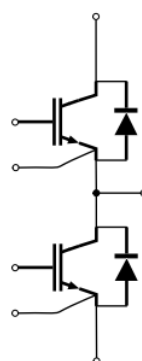


Product Summary		
V _{CES} (V)	V _{CESAT} (V)Typ	I _C (A)
1200	1.9 @ 15V,100A	100

Block Diagram

Application

- Auxiliary Inverters
- Motor Drives
- Servo Drives



IGBT,Inverter

Table1 Absolute Maximum Ratings (T_c=25°C, unless otherwise specified)

Parameters	Symbol	Value	Unit
Collector-Emmitter Voltage	V _{CES}	1200	V
Gate-Emmitter Voltage	V _{GES}	± 20	V
Collector DC Current-continuous T _C =95°C, T _J max=150°C	I _C	100	A
Repetitive peak collector current tp=1ms	I _{CRM}	200	A
Total power dissipation	P _D	470	W

Table 2. Electrical Chatacteristics (T_J=25°C, unless otherwise specified)

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Emmitter saturation Voltage	V _{CESAT}	V _{GE} =15V,I _C =100A,T _J =25°C		1.9	2.5	V
		V _{GE} =15V,I _C =100A,T _J =125°C		2.3		
		V _{GE} =15V,I _C =100A,T _J =150°C		2.5		
Gate Threshold Voltage	V _{GE(TH)}	V _{CE} =V _{GE} ,I _C =3.5mA	5.1	5.8	6.5	V
Internal gate resistor	R _{gint}	T _J =25°C		0.75		Ω
Gate charge	Q _G	V _{GE} = -15V~ +15V,V _{CE} =600V		1.8		μC
Zero Gate Voltage Collector Current	I _{CES}	V _{CE} =1200V,V _{GE} =0V			1	mA
Gate-body Leakage Current	I _{GES}	V _{CE} =0V,V _{GE} =20V			300	nA

Input Capacitance	C _{IES}	V _{CE} =25V,V _{GE} =0V,f=1MHz		TBD		nF
Reverse Transfer Capacitance	C _{RES}			TBD		nF
Turn-On Delay Time	td(on)	V _{CE} =600V,I _C =100A, V _{GE} = -15V/+15V, R _{gon} =R _{goff} =15Ω di/dton=2500A/us dv/dtoff=8800V/us T _J =25°C		60		ns
Turn-On Rise Time	tr			53		ns
Turn-Off Delay Time	td(off)			345		ns
Turn-Off Fall Time	tf			45		ns
Turn-On energy	E _{on}			10.2		mJ
Turn-Off energy	E _{off}			4.0		mJ
Turn-On Delay Time	td(on)	V _{CE} =600V,I _C =100A, V _{GE} = -15V/+15V, R _{gon} =R _{goff} =15Ω di/dton=2840A/us dv/dtoff=8550V/us T _J =125°C		82		ns
Turn-On Rise Time	tr			72		ns
Turn-Off Delay Time	td(off)			353		ns
Turn-Off Fall Time	tf			49		ns
Turn-On energy	E _{on}			10.9		mJ
Turn-Off energy	E _{off}			4.3		mJ
Turn-On Delay Time	td(on)	V _{CE} =600V,I _C =100A, V _{GE} = -15V/+15V, R _{gon} =R _{goff} =15Ω di/dton=2750A/us dv/dtoff=8350V/us T _J =150°C		97		ns
Turn-On Rise Time	tr			79		ns
Turn-Off Delay Time	td(off)			355		ns
Turn-Off Fall Time	tf			51		ns
Turn-On energy	E _{on}			11.3		mJ
Turn-Off energy	E _{off}			4.6		mJ
Temperature under switching conditions	T _{vjop}		-40		150	°C
Thermal resistance,junction to case	R _{thJC}	per IGBT			0.165	K/W
Thermal resistance,case to heatsink	R _{thCH}	per IGBT λgrease=1W/(m·K)		0.105		K/W

Diode, Inverter

Table1 Absolute Maximum Ratings (T_c=25°C, unless otherwise specified)

Parameters	Symbol	Value	Unit
Repetitive peak reverse voltage	V _{RRM}	1200	V
Continuous DC forward current	I _F	100	A
Repetitive peak forward current tp=1ms	I _{FRM}	200	A
I ² t-value V _R =0V,tp=10ms,T _J =25°C	I ² t	855	A ² s

Table 2. Electrical Chatacteristics (T_J=25°C, unless otherwise specified)

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode Forward Voltage	V _F	I _F =100A, T _J =25°C		1.85	2.30	V
		I _F =100A, T _J =125°C		1.68		
		I _F =100A, T _J =150°C		1.62		
Diode Peak Reverse Recovery Current	I _{rrm}	I _F =100A V _R =600V -diF/dt =2300A/μs T _J =25°C		48		A
Reverse Recovery Charge	Q _{rr}			4.5		μC
Reverse recovery energy	E _{rec}			1.4		mJ
Diode Peak Reverse Recovery Current	I _{rrm}	I _F =100A V _R =600V -diF/dt =2400A/μs T _J =125°C		46		A
Reverse Recovery Charge	Q _{rr}			5.4		μC
Reverse recovery energy	E _{rec}			1.5		mJ
Diode Peak Reverse Recovery Current	I _{rrm}	I _F =100A V _R =600V -diF/dt =2300A/μs T _J =150°C		45		A
Reverse Recovery Charge	Q _{rr}			5.9		μC
Reverse recovery energy	E _{rec}			1.5		mJ
Temperature under switching conditions	T _{vjop}		-40		150	°C
Thermal resistance,junction to case	R _{thJC}	per diode			0.425	K/W
Thermal resistance,case to heatsink	R _{thCH}	per diode λgrease=1W/(m·K)		0.260		K/W

NTC-Thermistor

Table 1. Electrical Chatacteristics

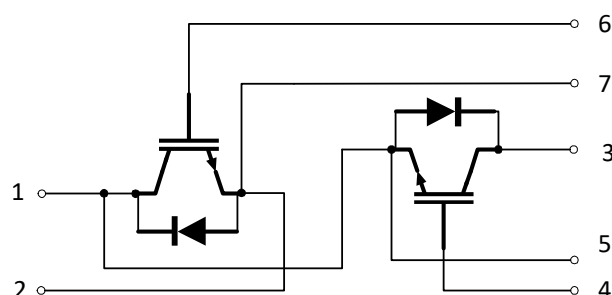
Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Rated resistances	R ₂₅	T _C =25°C, ±5%		5		KΩ
B-value	B _{25/50}	±1%		3380		K
Deviation of R100	ΔR/R	T _C =100°C, R100=493.3Ω	-5		5	%
Power dissipation	P ₂₅				20	mW

Module

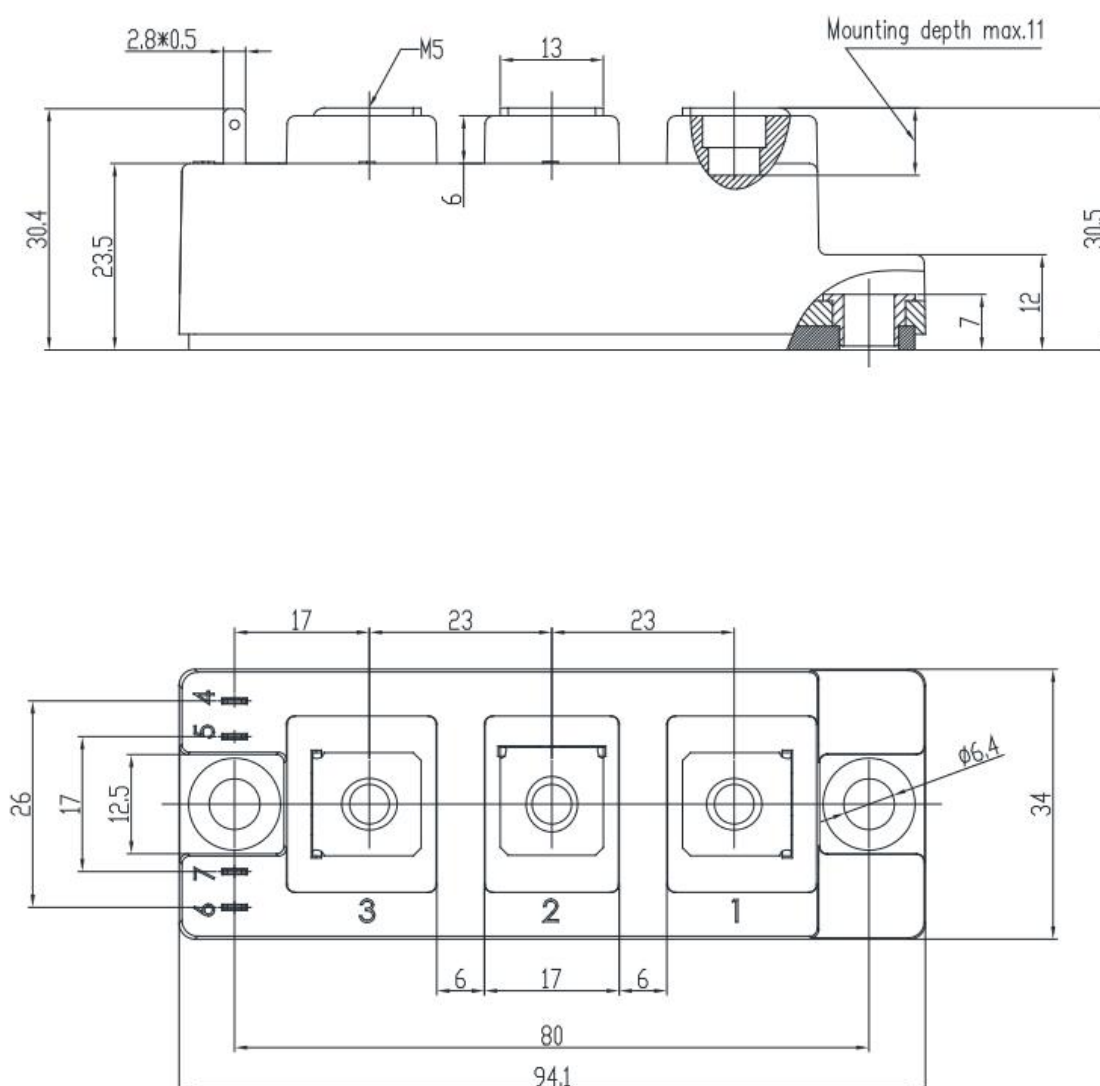
Table 1. Electrical Chatacteristics (T_J=25°C, unless otherwise specified)

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Isolation test voltage	V _{ISOL}	RMS, f=50Hz, t=60s	4000			V
Maximum junction temperature	T _{Jmax}				150	°C
Storage temperature	T _{stg}		-40		125	°C
Operating junction temperature	T _{J op}		-40		150	°C
Stray inductance	L _{CE}			30		nH
Thermal resistance,case to heatsink	R _{thCH}	per diode λgrease=1W/(m·K)		0.05		K/W
Mounting torque for modul mounting	M		3.0		6.0	Nm
Weight	W			160		g

Circuit diagram



Package outlines



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