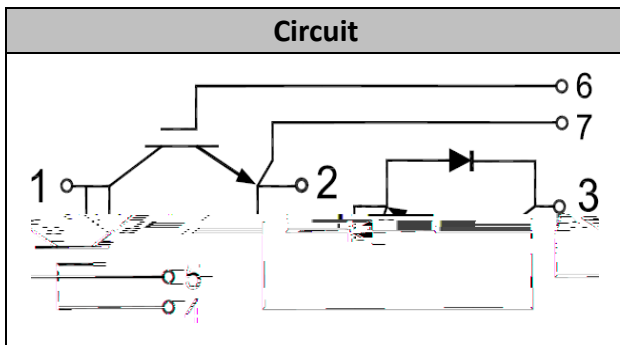


## IGBT Modules

V <sub>CES</sub>	1200V
I <sub>C</sub>	150A

## Applications

- Inverter for motor drive
- AC and DC servo drive amplifier
- UPS (Uninterruptible Power Supplies)
- Soft switching welding machine



## Features

- Low V<sub>ce(sat)</sub> with Trench technology
- V<sub>ce(sat)</sub> with positive temperature coefficient
- High short circuit capability(10us)
- Including ultra fast & soft recovery anti-parallel FWD
- Low inductance
- Maximum junction temperature 175°C

## ● IGBT

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Collector-Emitter Voltage	V <sub>CES</sub>	V <sub>GE</sub> =0V, I <sub>C</sub> =1mA, T <sub>vj</sub> =25°C	1200	V
Continuous Collector Current	I <sub>C</sub>	T <sub>c</sub> =100°C	150	A
Repetitive Peak Collector Current	I <sub>CRM</sub>	tp=1ms	300	A
Gate-Emitter Voltage	V <sub>GES</sub>	T <sub>vj</sub> =25°C	± 20	V
Total Power Dissipation	P <sub>tot</sub>	T <sub>c</sub> =25°C T <sub>vjmax</sub> =175°C	833	W

**Characteristic values**

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=4mA, T_{vj}=25^{\circ}C$	5.0	6.2	7.0	V
Collector-Emitter Cut-off Current	$I_{CES}$	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25^{\circ}C$			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150A, V_{GE}=15V, T_{vj}=25^{\circ}C$		1.85		V
		$I_C=150A, V_{GE}=15V, T_{vj}=125^{\circ}C$		2.05		
Gate Charge	$Q_G$			1.56		uC
Input Capacitance	$C_{ies}$	$V_{CE}=25V, V_{GE}=0V,$ $f=1MHz, T_{vj}=25^{\circ}C$		11.0		nF
Reverse Transfer Capacitance	$C_{res}$				0.5	
Gate-Emitter leakage current	$I_{GES}$	$V_{CE}=0V, V_{GE}=20V, T_{vj}=25^{\circ}C$			400	nA
Turn-on Delay Time	$t_{d(on)}$			347		ns

## Rise Time

$I_C = 150A$   
 $V_{CE} = 600V$   
 $V_{GE} = \pm 15V$   
 $R_G = 4.7\Omega$   
 $T_{vj} = 25^{\circ}C$



## ● Diode

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	$T_{vj}=25^{\circ}C$	1200	V
Continuous DC Forward Current	$I_F$		150	A
Repetitive Peak Forward Current	$I_{FRM}$	$t_p=1ms$	300	A

### Characteristic values

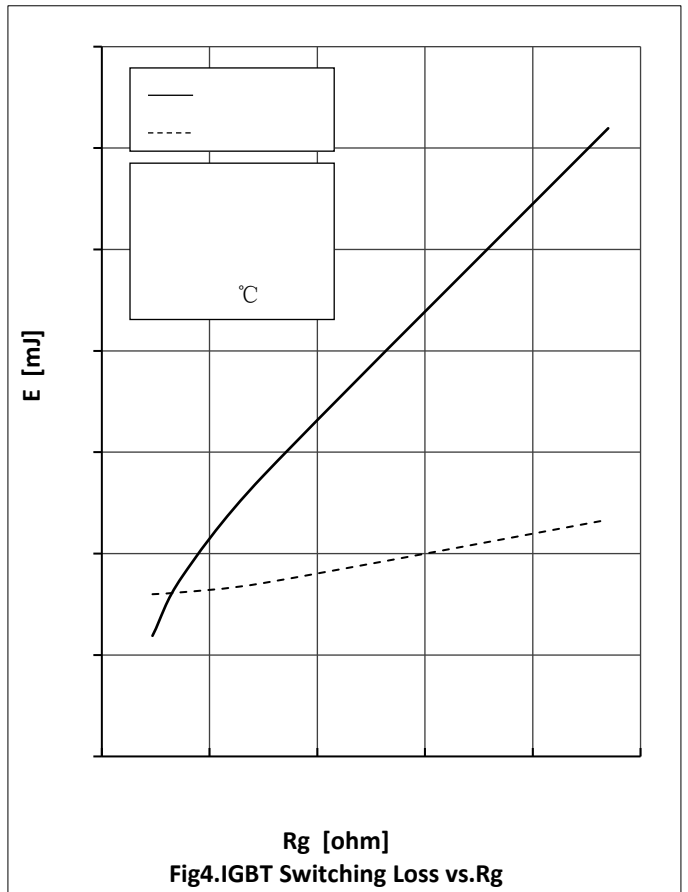
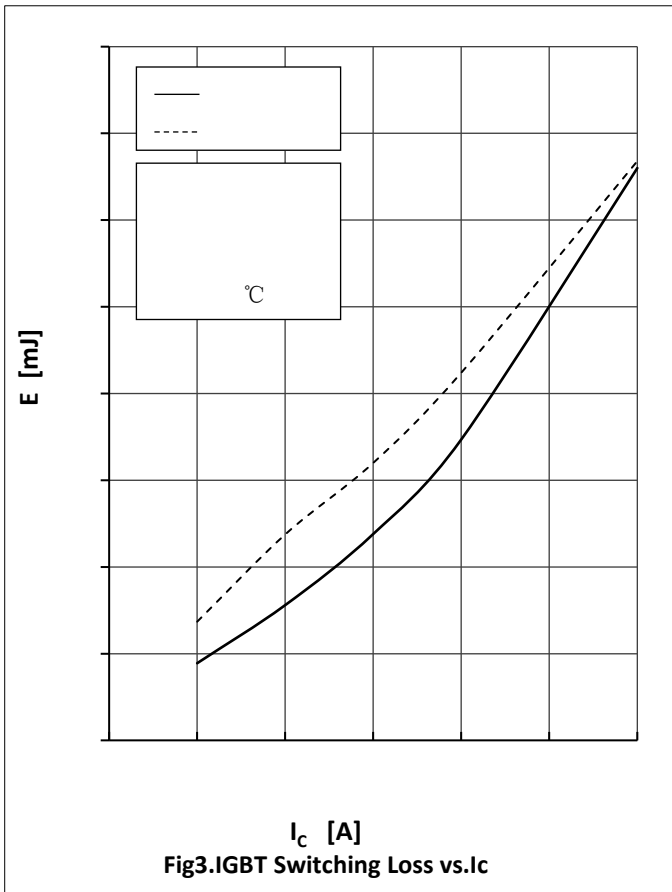
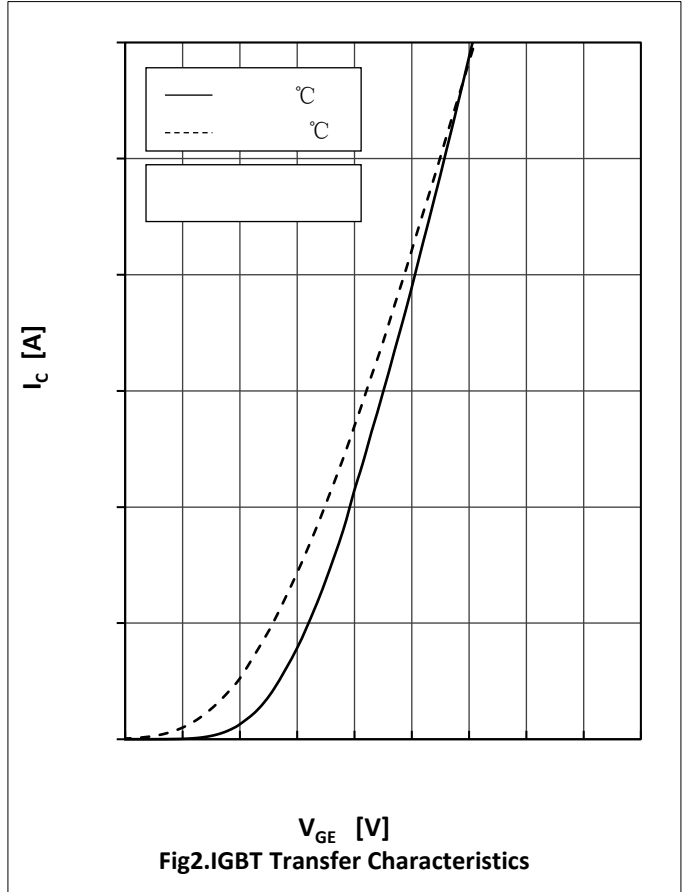
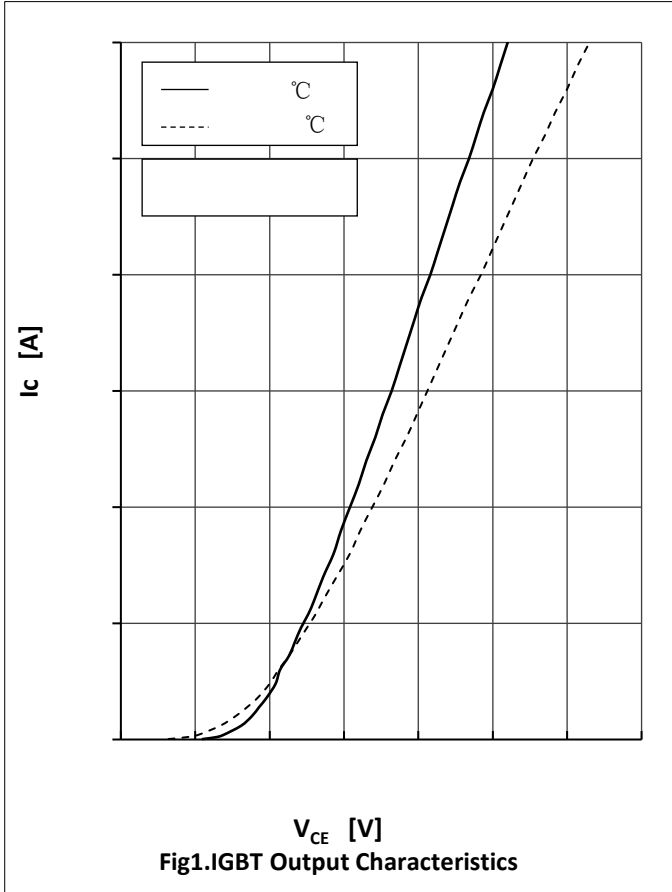
Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	$V_F$	$I_F=150A, T_{vj}=25^{\circ}C$		1.80	2.00	V
		$I_F=150A, T_{vj}=125^{\circ}C$		1.85		
Recovered Charge	$Q_{rr}$	$I_F=150A$		14.0		$\mu C$
Peak Reverse Recovery Current	$I_{rr}$	$V_R=600V$ $-di_F/dt=2250A/\mu s$		143		A
Reverse Recovery Energy	$E_{rec}$	$T_{vj}=25^{\circ}C$		9.5		mJ
Recovered Charge	$Q_{rr}$	$I_F=150A$		18.5		$\mu C$
Peak Reverse Recovery Current	$I_{rr}$	$V_R=600V$ $-di_F/dt=2250A/\mu s$		179		A
Reverse Recovery Energy	$E_{rec}$	$T_{vj}=125^{\circ}C$		17.5		mJ

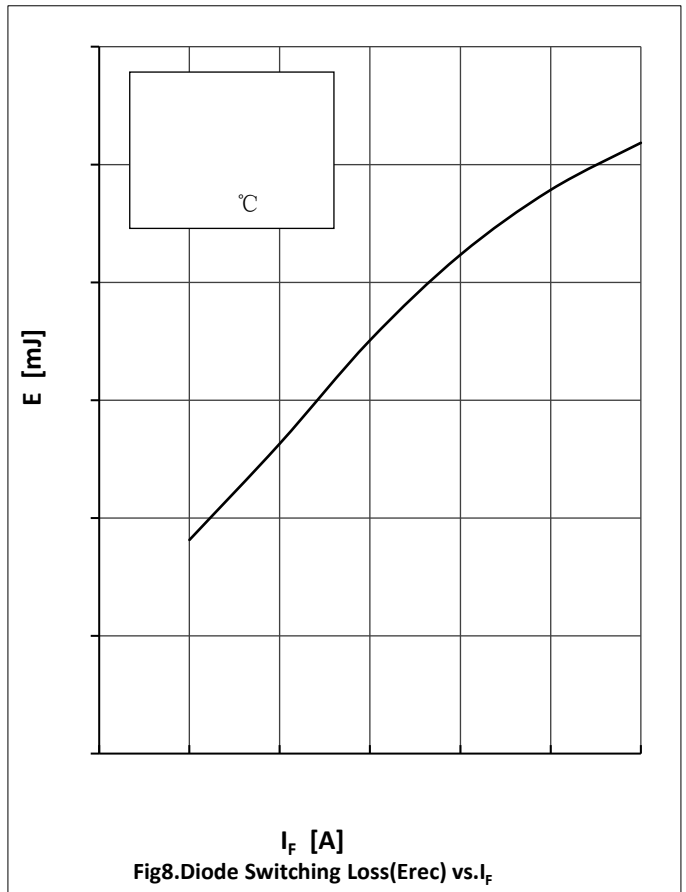
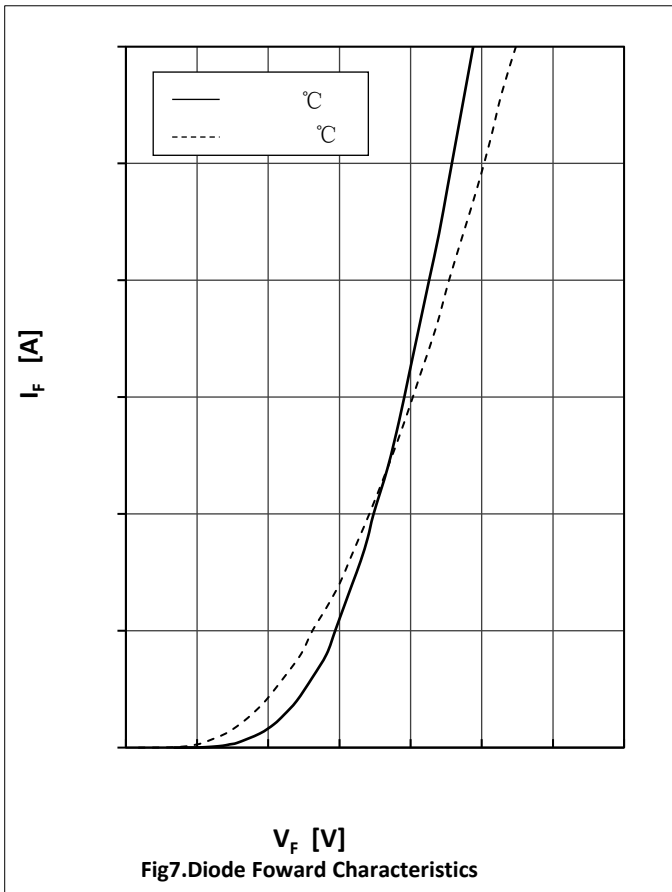
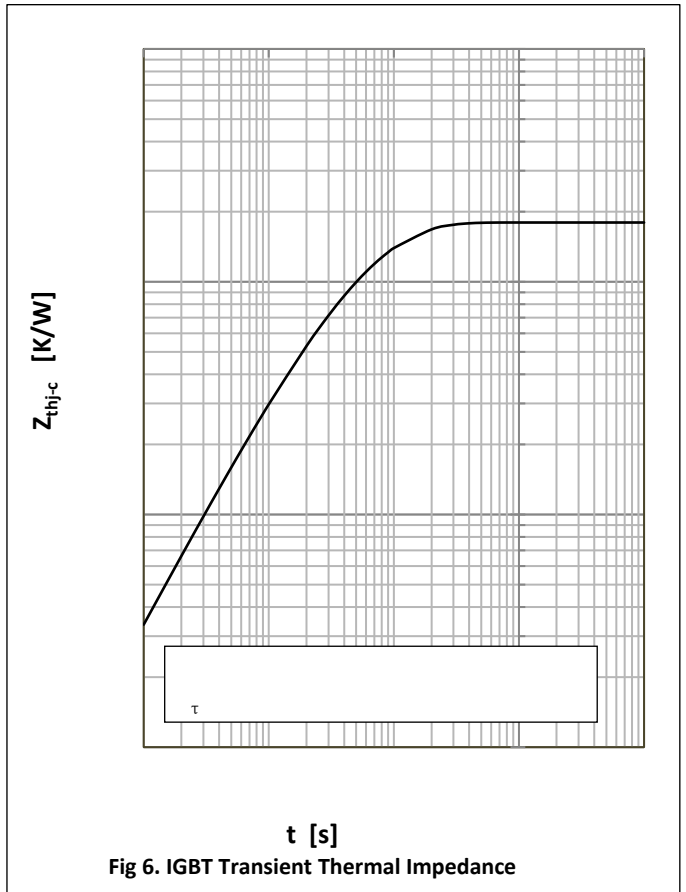
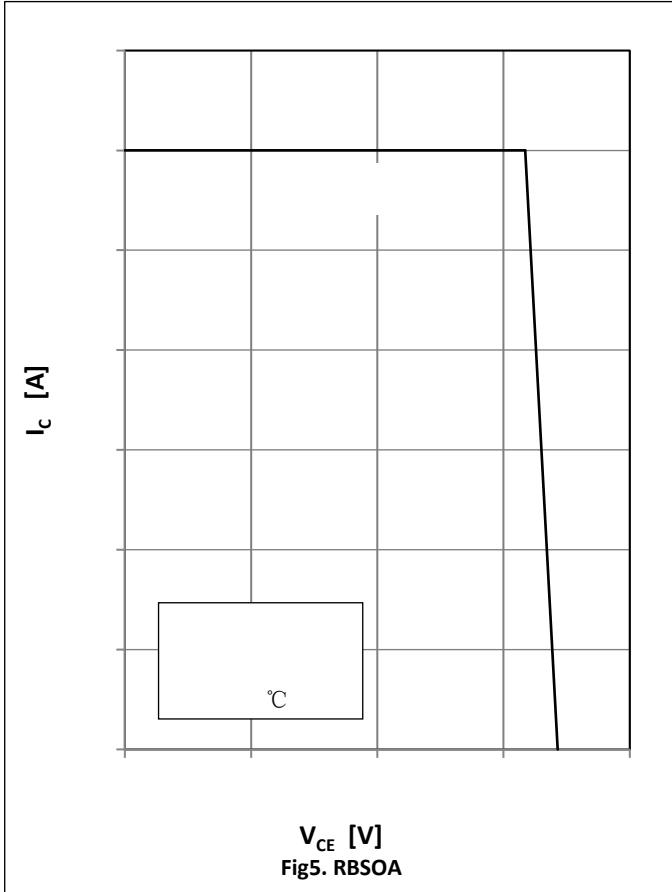


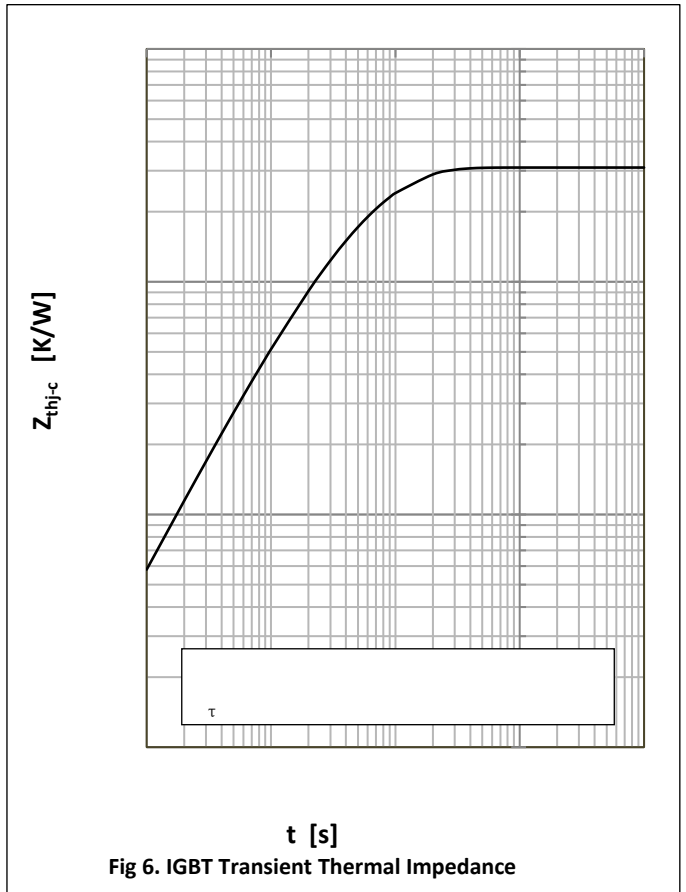
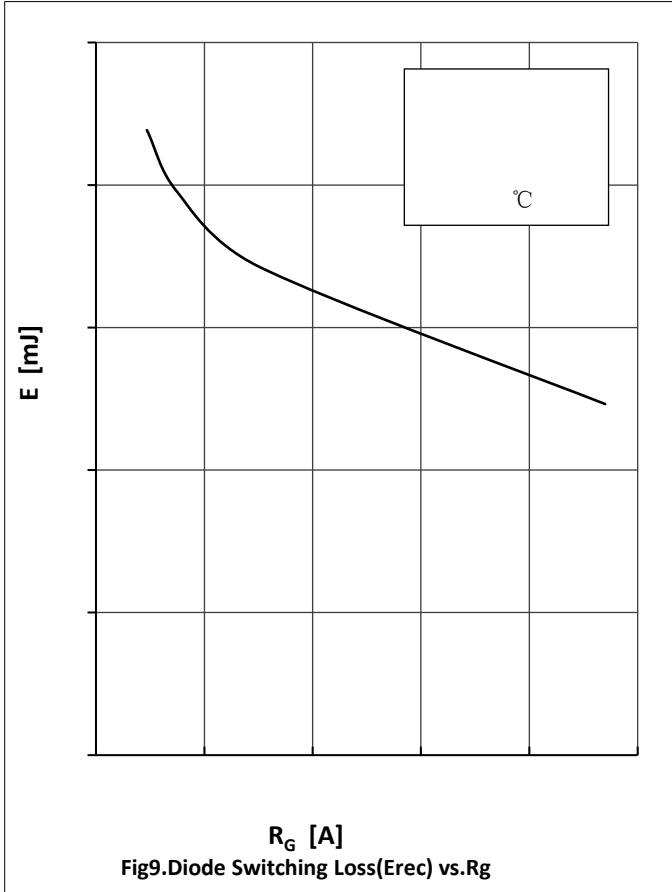
## ● Module Characteristics

T<sub>c</sub>=25°C unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Isolation voltage	V <sub>isol</sub>	t=1min,f=50Hz	2500			V
Maximum Junction Temperature	T <sub>jmax</sub>				175	°C
Operating Junction Temperature	T <sub>vj op</sub>		-40		150	°C
Storage Temperature	T <sub>stg</sub>		-40		125	°C
Thermal Resistance Junction-to Case	R <sub>θJC</sub>	per IGBT			0.18	K/W
		per Diode			0.31	
Thermal Resistance Case-to Sink	R <sub>θCS</sub>	Conductive grease applied		0.035		K/W
Module Electrodes Torque	M <sub>t</sub>	Recommended(M6)	3.0		5.0	N·m
Module-to-Sink Torque	M <sub>s</sub>	Recommended(M6)	3.0		5.0	N·m
Weight of Module	G			315		g

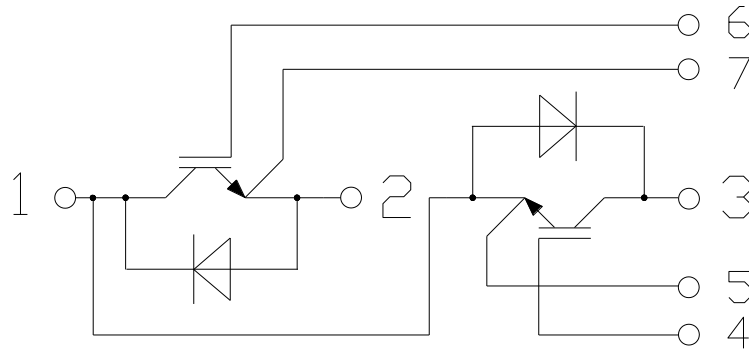








## ● Circuit Diagram



## ● Package Outline Information

Dimensions in Millimeters

