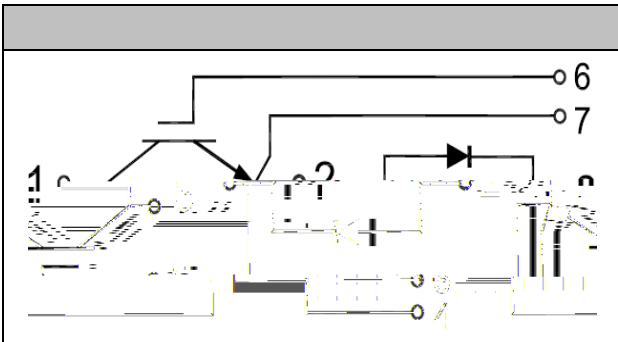


IGBT Modules

V _{CES}	1200V
I _C	300A

Applications

- High frequency drivers
- Solar inverters
- UPS (Uninterruptible Power Supplies)
- Electric welding machine



Features

- High speed IGBT in NPT technology
- Low switching losses
- High short circuit capability(10us)
- Including ultra fast & soft recovery anti-parallel FWD
- Low inductance
- Maximum junction temperature 150°C

● IGBT

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Collector-Emitter Voltage	V _{CES}	V _{GE} =0V, I _C =1mA, T _{vj} =25°C	1200	V
Continuous Collector Current	I _C	T _c =80°C	300	A
Repetitive Peak Collector Current	I _{CRM}	t _p =1ms	600	A
Gate-Emitter Voltage	V _{GES}	T _{vj} =25°C	±20	V
Total Power Dissipation	P _{tot}	T _c =25°C T _{vjmax} =150°C	2000	W



MG300HF12LEC2

Characteristic values

Parameter	Symbol	Conditions	Value	Unit
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● Diode

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	$T_{vj}=25^{\circ}\text{C}$	1200	V
Continuous DC Forward Current	I_F		300	A
Repetitive Peak Forward Current	I_{FRM}	$t_p=1\text{ms}$	600	A

Characteristic values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	V_F	$I_F=300\text{A}, T_{vj}=25^{\circ}\text{C}$		1.70	2.0	V
		$I_F=300\text{A}, T_{vj}=125^{\circ}\text{C}$		1.75		
Recovered Charge	Q_{rr}	$I_F=300\text{A}$		16.8		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=3600\text{A}/\mu\text{s}$		240		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=25^{\circ}\text{C}$		10.2		mJ
Recovered Charge	Q_{rr}	$I_F=300\text{A}$		36.5		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=3600\text{A}/\mu\text{s}$		290		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=125^{\circ}\text{C}$		20.3		mJ



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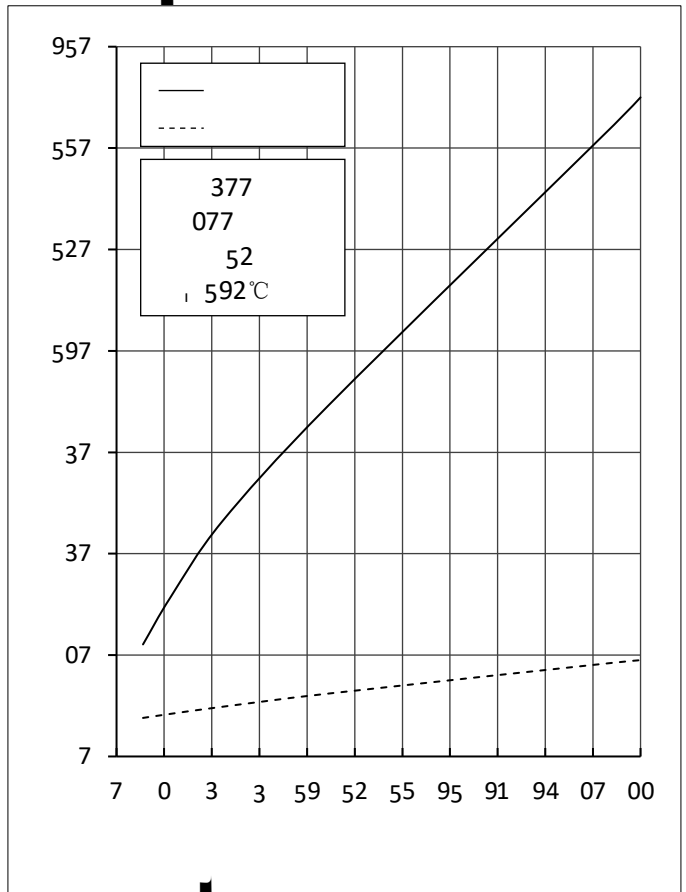
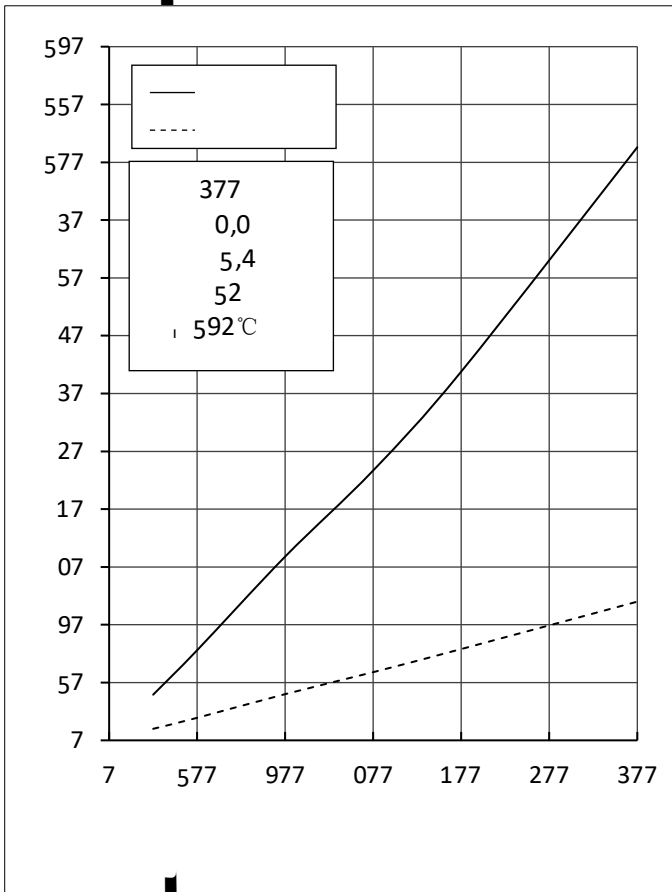
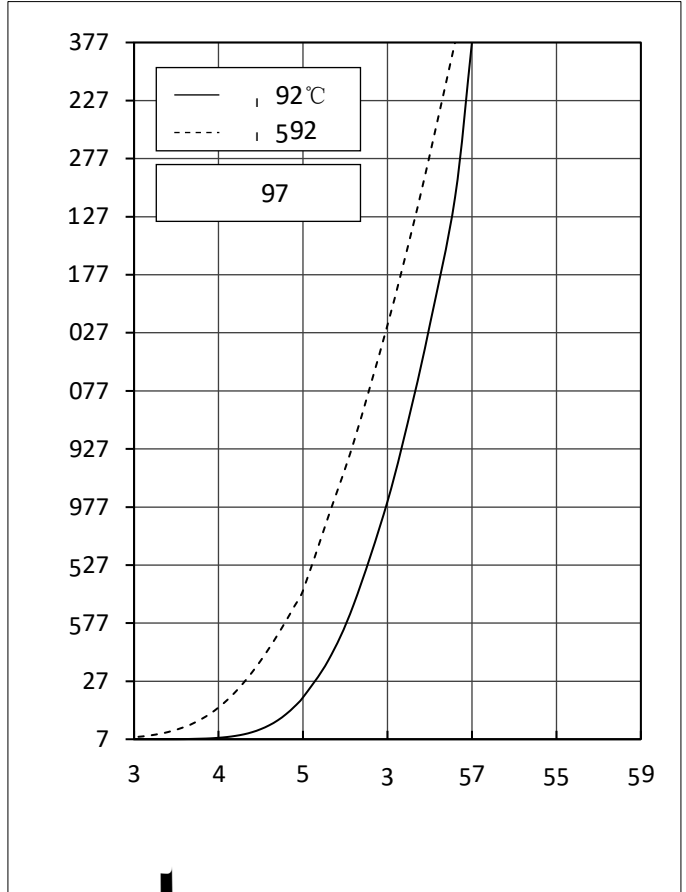
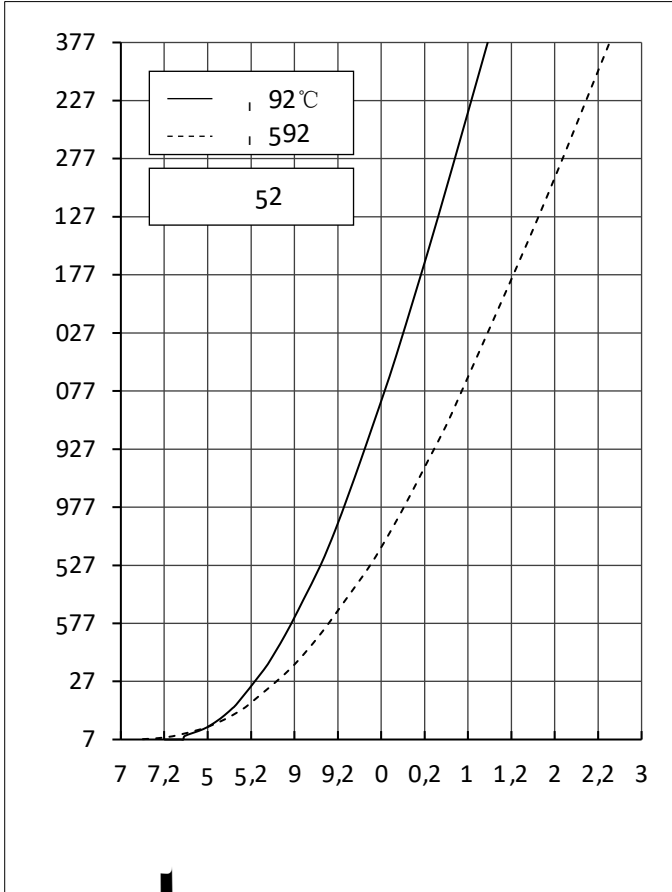
● Module Characteristics

$T_c=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Isolation voltage	V_{isol}	$t=1\text{min}, f=50\text{Hz}$	2500			V
Maximum Junction Temperature	T_{jmax}				150	$^{\circ}\text{C}$
Operating Junction Temperature	T_{vjop}		-40		125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-40		125	$^{\circ}\text{C}$
Thermal Resistance Junction-to Case	$R_{\theta\text{JC}}$	per IGBT			0.06	K/W
		per Diode			0.10	
Thermal Resistance Case-to Sink	$R_{\theta\text{CS}}$	Conductive grease applied		0.035		K/W
Module Electrodes Torque	M_t	Recommended(M6)	3.0		5.0	N·m
Module-to-Sink Torque	M_s	Recommended(M6)	3.0		5.0	N·m
Weight of Module	G			315		g

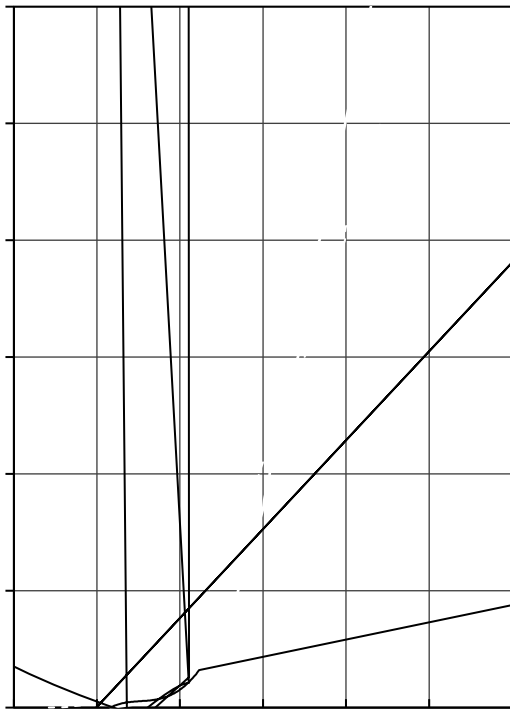
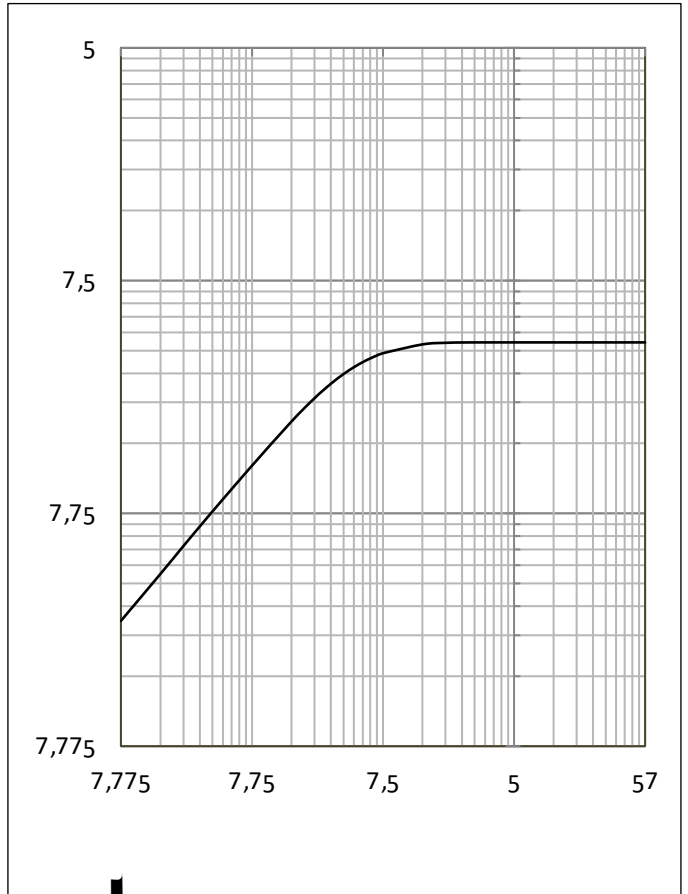
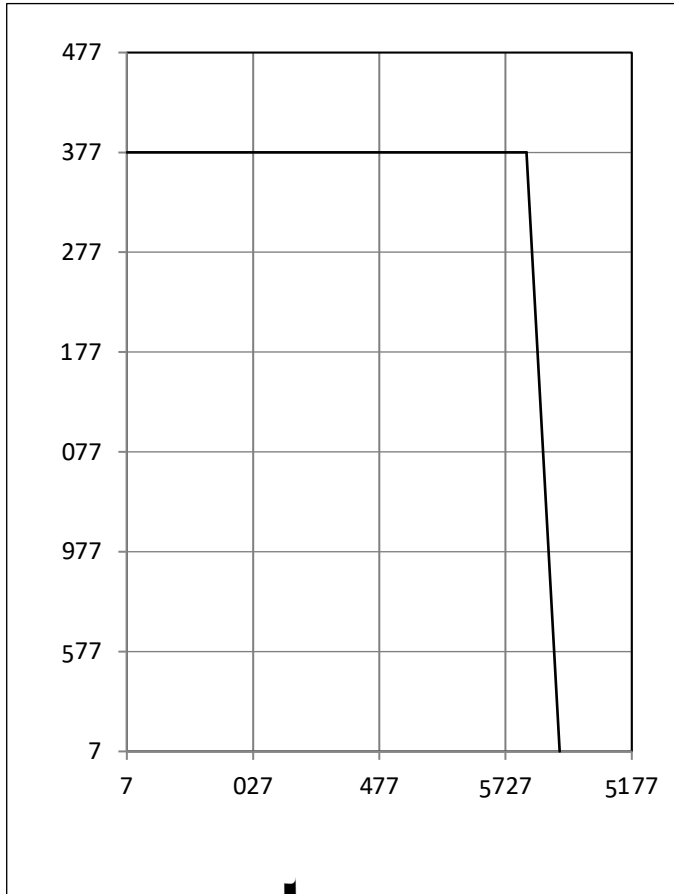


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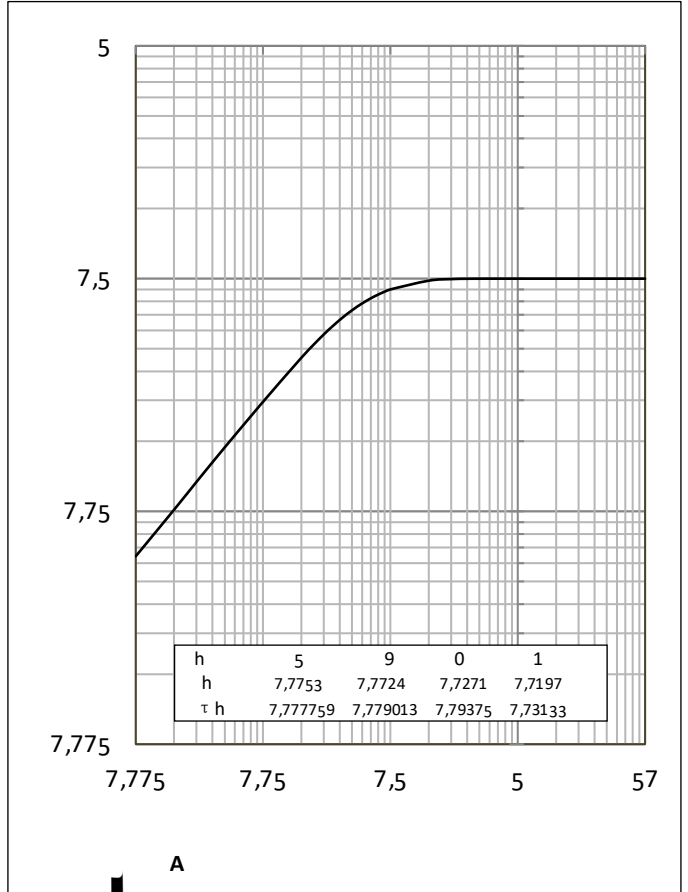
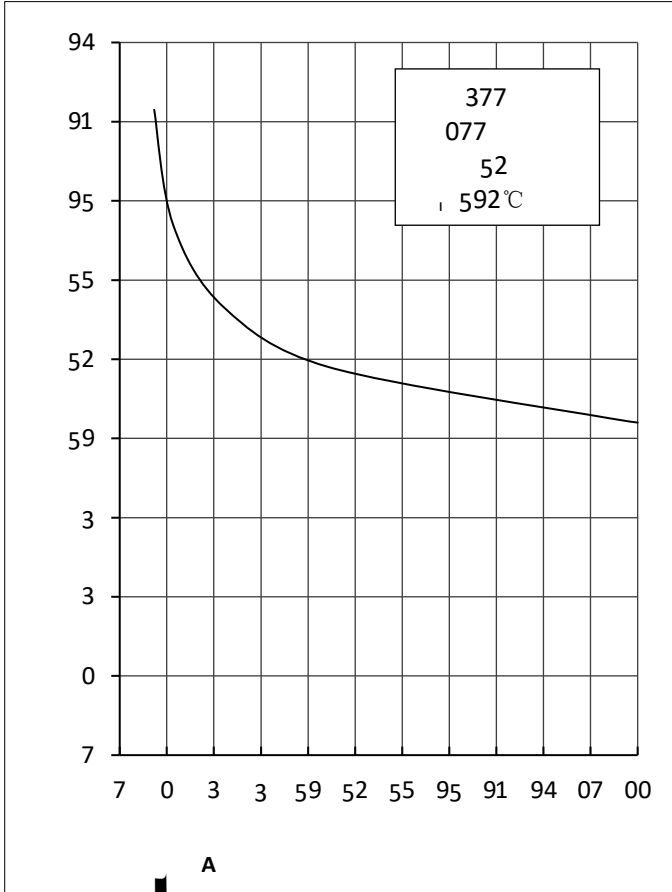


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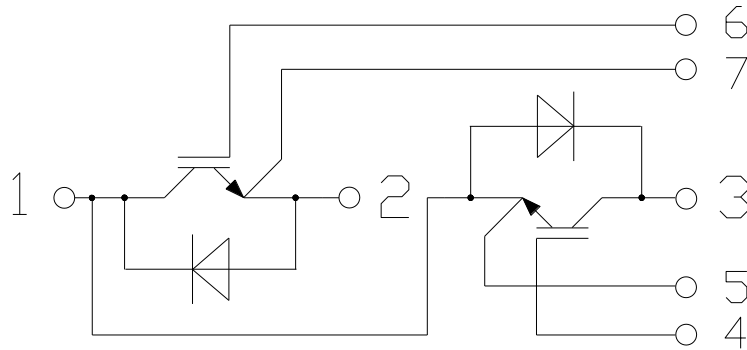
MG300HF12LEC2





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● Circuit Diagram



● Package Outline Information

Dimensions in Millimeters

