



MG50HF12TLC1

IGBT Modules

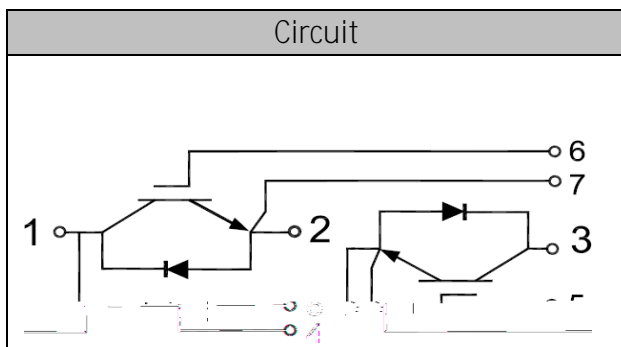
V _{CES}	1200V
I _C	50A

Applications

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

Features

- Low V_{ce(sat)} with Trench technology
- V_{ce(sat)} with positive temperature coefficient
- High short circuit capability(10us)
- Including ultra fast & soft recovery anti-parallel FWD
- Low inductance
- Maximum junction temperature 175



● IGBT

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Collector-Emitter Voltage	V _{CES}	V _{GE} =0V, I _C =1mA, T _{vj} =25	1200	V
Continuous Collector Current	I _C	T _c =100	50	A
Repetitive Peak Collector Current	I _{CRM}	t _p =1ms	100	A
Gate-Emitter Voltage	V _{GES}	T _{vj} =25	20	V
Total Power Dissipation	P _{tot}	T _c =25 T _{vjmax} =175	485	W



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Characteristic values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C = 3mA, T_{vj}=25$	5.0	6.2	7.0	V
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25$			1.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50A, V_{GE}=15V, T_{vj}=25$		1.85		V
		$I_C=50A, V_{GE}=15V, T_{vj}=125$		2.05		
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE} = 0V,$ $f=1MHz, T_{vj}=25$		4.29		nF

Reverse Transfer Capacitance

$C_{G(C)}$ JTJETOEMC/P #1CID 183/Lang(en-US)BDCqBT/F9 6.96 Tf/GS7 gs0.750 w1 j1 0 0 1 229.489990 551.590027 Tm0 g0 G(GC))JTJETOEM



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● Diode

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	$T_{vj}=25$	1200	V
Continuous DC Forward Current	I_F		50	A
Repetitive Peak Forward Current	I_{FRM}	$t_p=1\text{ms}$	100	A

Characteristic values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	V_F	$I_F=50\text{A}, T_{vj}=25$		1.95	2.20	V
		$I_F=50\text{A}, T_{vj}=125$		2.05		
Recovered Charge	Q_{rr}	$I_F=50\text{A}$		2.77		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=800\text{A}/\mu\text{s}$		30		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=25$		0.65		mJ
Recovered Charge	Q_{rr}	$I_F=50\text{A}$		6.39		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=800\text{A}/\mu\text{s}$		31		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=125$		2.16		mJ



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● Module Characteristics

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

Parameter

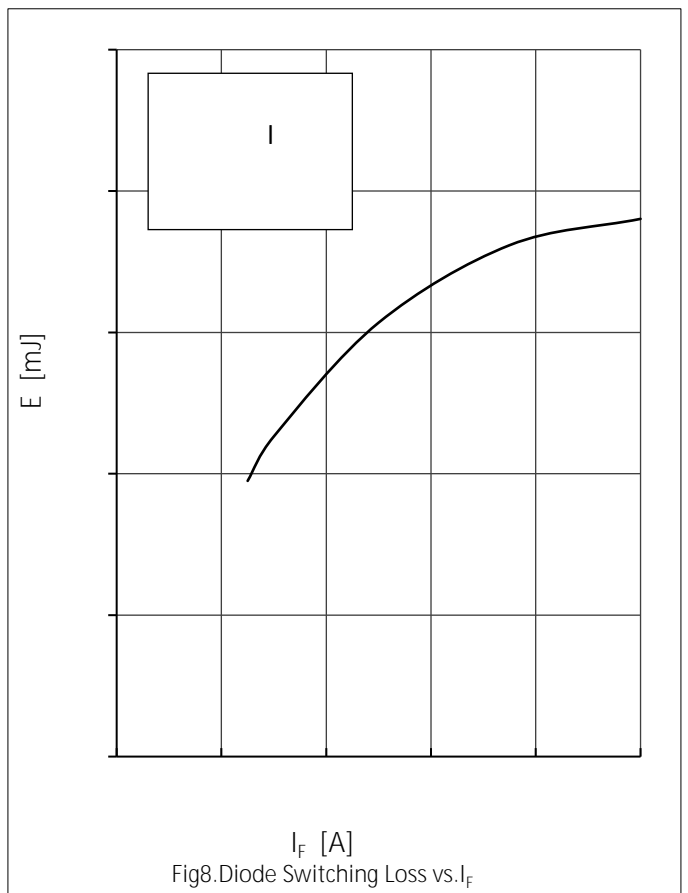
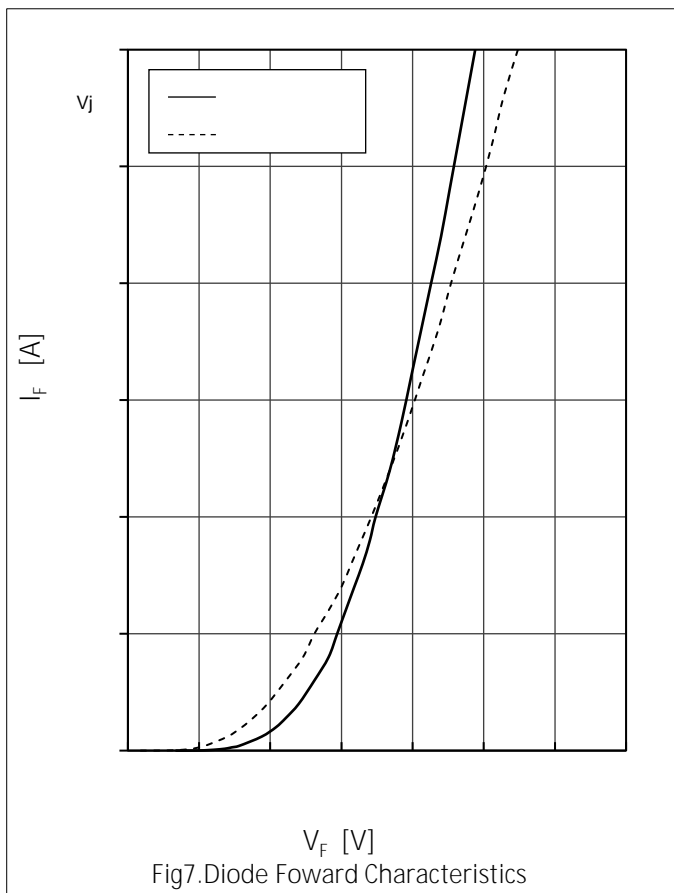
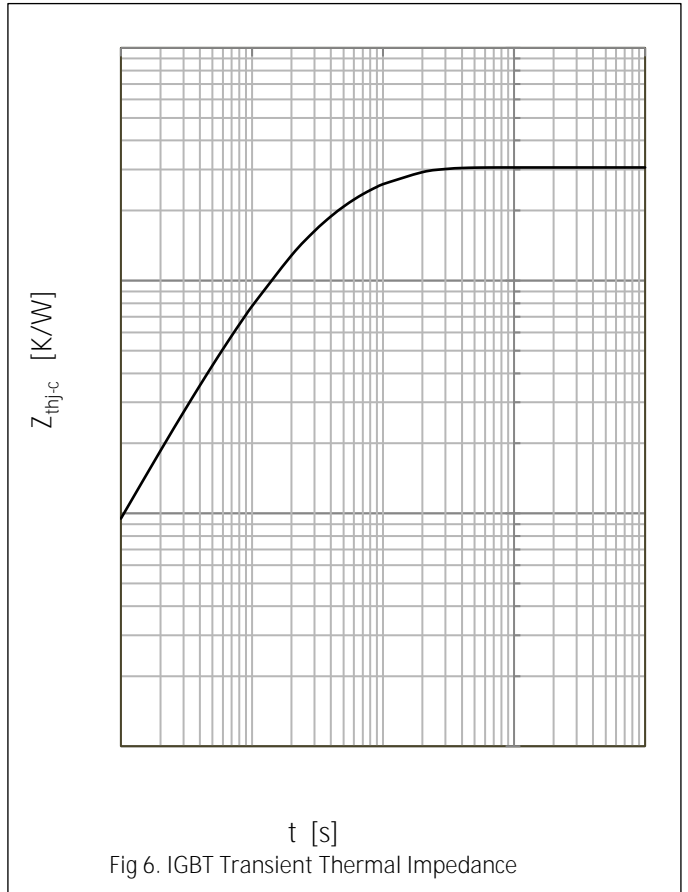
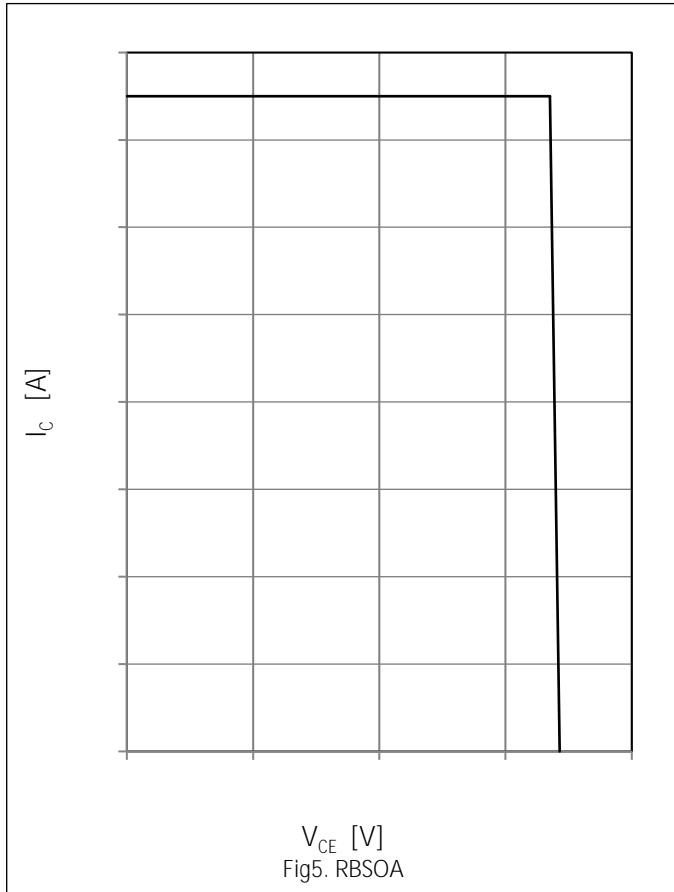
Symbol



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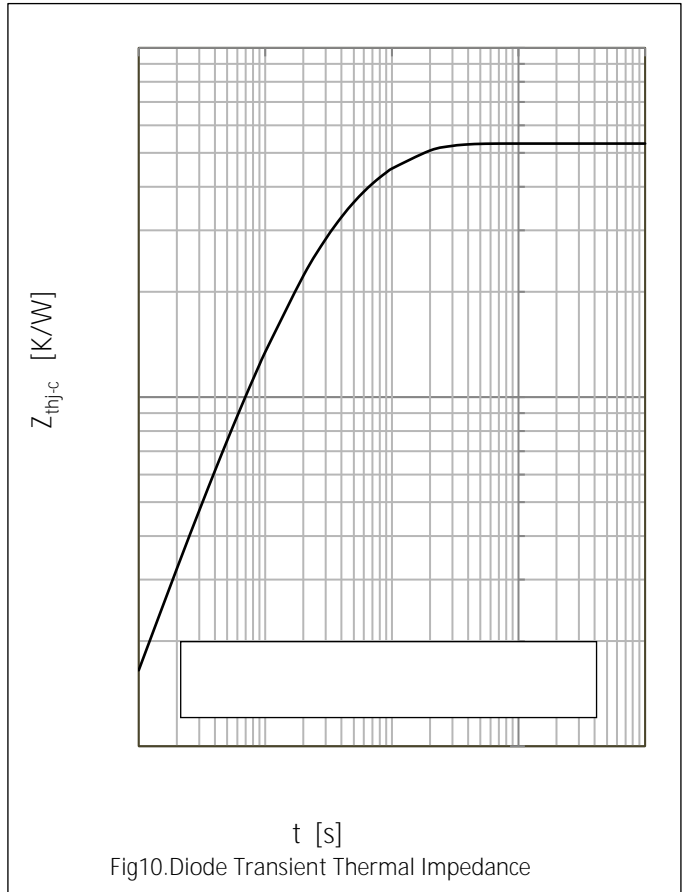
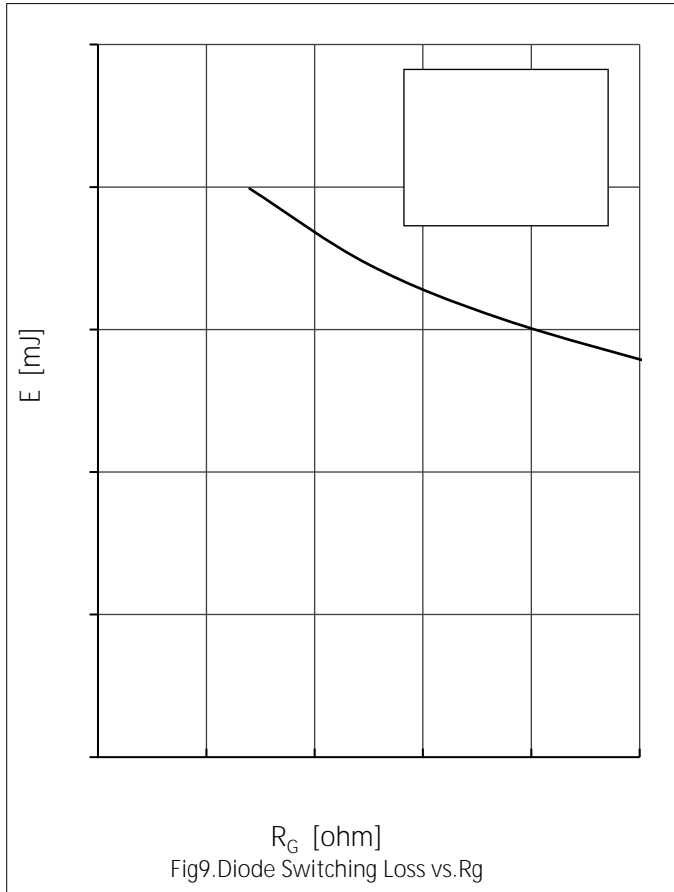


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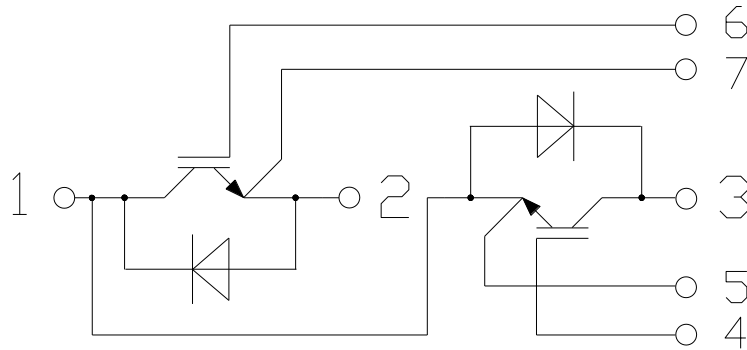
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● Circuit Diagram



● Package Outline Information

Dimensions in Millimeters

