



JMG200HF12G2S1

Features

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- Low Stray Inductance
- Low Saturation Voltage
- Ultra Low loss
- HI-REL Power Terminals
- Lead Free, Compliant with Ro

Product Summary



JMG200HF12G2S1

IGBT

**FRED Absolute Maximum Ratings (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)**

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak reverse voltage	$T_{vj} = 25^\circ\text{C}$	V_{RRM}	1200	V
Continuous DC forward current		$I_{F(AV)}$	200	A
Repetitive peak forward current	$t_P = 1\text{ms}$	I_{FRM}	400	A

FRED Electrical Characteristics (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

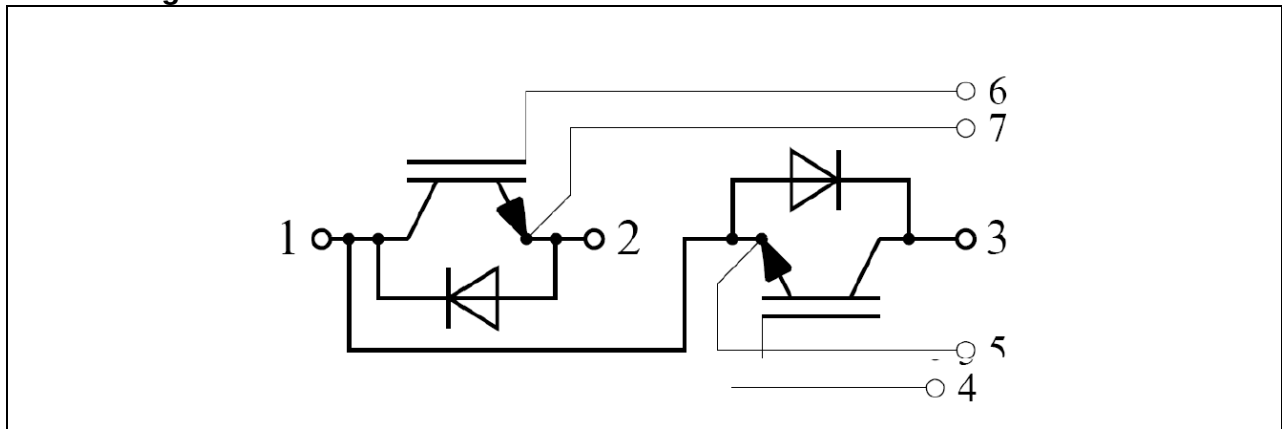
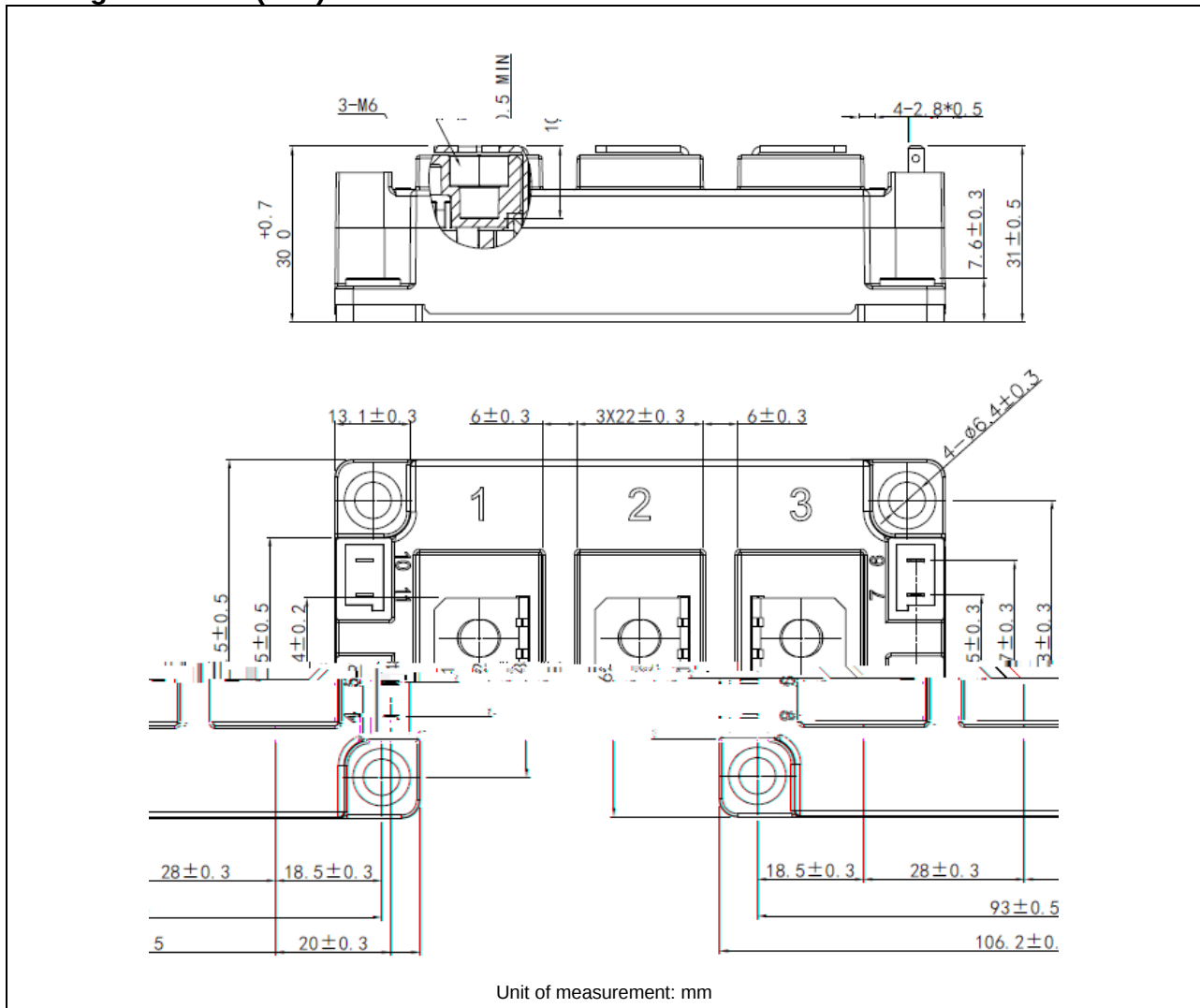
Parameter	Conditions		Symbol	Values			Unit
				Min.	Typ.	Max.	
Forward voltage	I _F 200A	T _{vj} = 25°C	V _F		2.00	2.30	V
		T _{vj} = 125°C			1.60		
Peak reverse recovery current	I _F 200A, di/dt = 110 V _R = 600V, V _{GE} = -15V	T _{vj} = 25°C	I _{RM}		39.4		A
		T _{vj} = 125°C			63.7		
Recovered charge		T _{vj} = 25°C	Q _{rr}		7.09		
		T _{vj} = 125°C			19.1		
Reverse Recovery energy		T _{vj} = 25°C	E _{rec}		2.04		mJ
		T _{vj} = 125°C			5.27		
Thermal resistance, junction to case	per Diode		R _{th(j-c)}			0.2	K/W
Temperature under switching conditions			T _{vj op}	-40		150	°C

**Module Characteristics**

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Isolation voltage (All terminals shorted)	f = 50Hz, 1minute	V_{iso}	2.5			kV
Maximum junction temperature		T_J			175	°C
Thermal resistance, case to heatsink	per module	$R_{th(c-s)}$		0.01		K/W
Storage temperature		T_{stg}	-40		125	°C
Mounting torque	M6	M	2.5		5.0	N·m
Terminal connection torque	M6	M	3.0		6.0	N·m

Ordering Information

Device	
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Circuit Diagram

Package Outlines (mm)




Typical Electrical & Thermal Characteristics

Fig 1. IGBT Output Characteristics
Inverter (typical) $V_{GE}=15\text{ V}$

Fig 2. IGBT Output Characteristics
Inverter (typical)

Fig 3. IGBT Transfer Characteristics
Inverter (typical) $V_{CE}=20\text{ V}$

Fig 4. IGBT Switching Loss vs I_c
Inverter (typical)
 $R_g=6.9$ $V_{CE}=600\text{ V}$, $V_{GE}=\pm 15\text{ V}$

Fig 5. IGBT Switching Loss vs. R_g ,
Inverter (typical)
 $I_c=200\text{ A}$, $V_{CE}=600\text{ V}$, $V_{GE}=\pm 15\text{ V}$

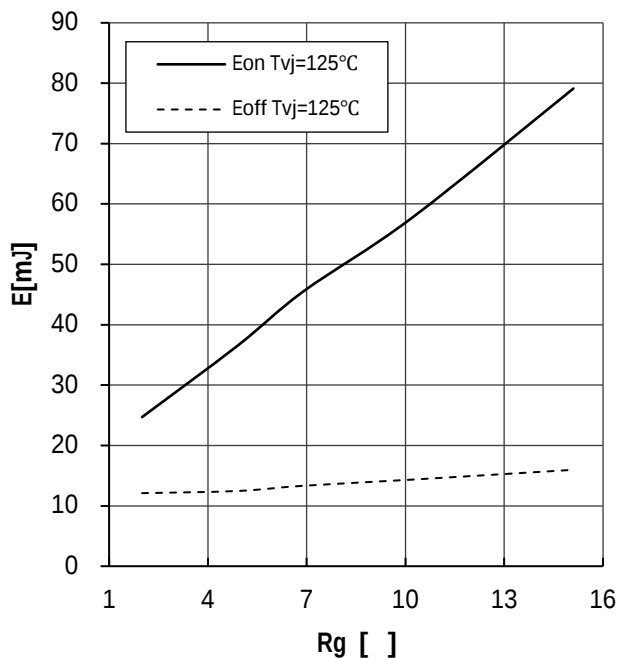


Fig 6. Reverse bias safe operating area
IGBT, Inverter (RBSOA)

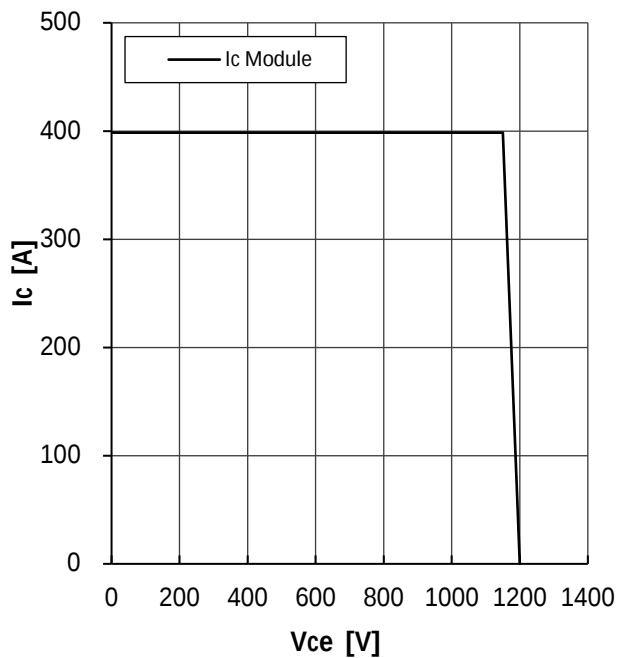


Fig 7. FRED Forward Characteristics,
Inverter (typical)

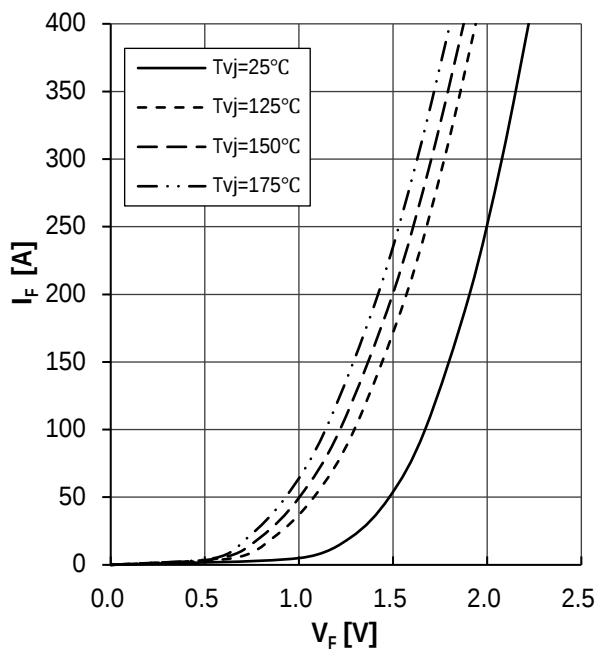


Fig 8. FRED Switching Loss vs. I_c ,
Inverter (typical)
 $R_g=6.9$ $V_{CE}=600\text{ V}$

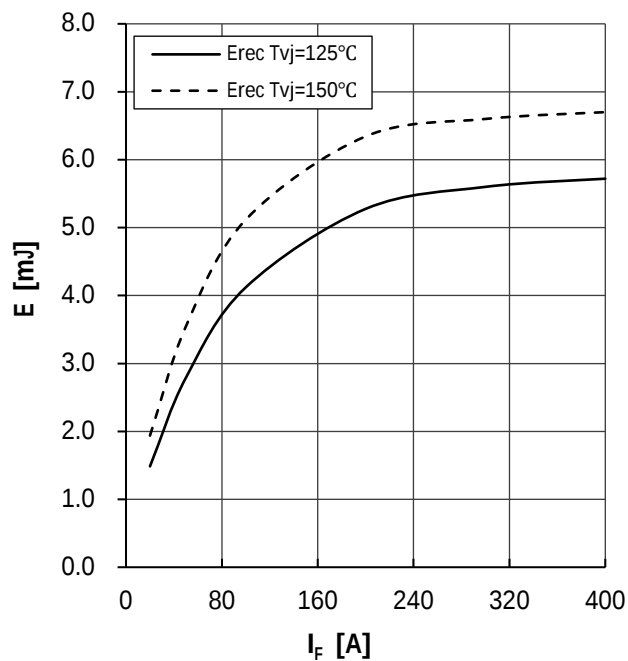
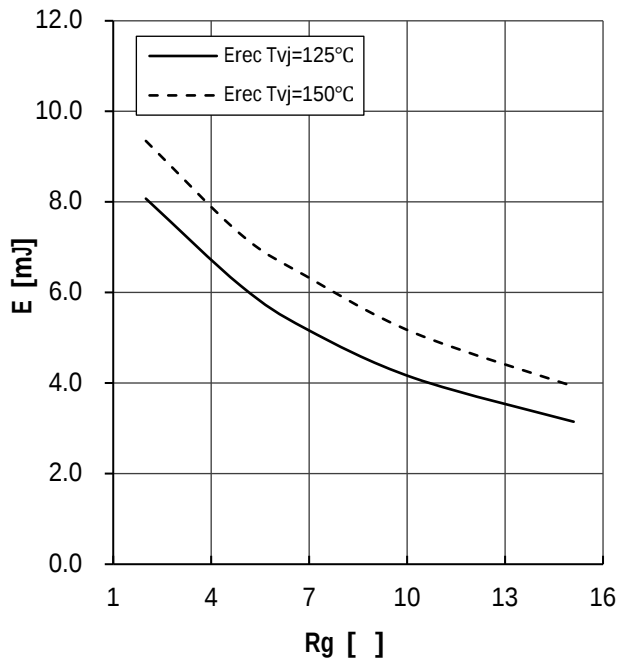


Fig 9. FRED Switching Loss vs. R_g ,
Inverter (typical)
 $I_c=200$ A, $V_{CE}=600$ V





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