MG100UZ12TLGJ

RoHS COMPLIANT

IGBT Modules

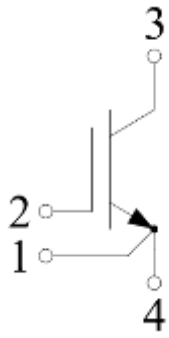


V_{CES}	1200V
I_C	100A

Applications

- AC and DC motor control
- PFC
- SMPS
- Brake switch

Circuit



Features

- Low $V_{CE(sat)}$ with Trench Field-stop technology
- $V_{CE(sat)}$ with positive temperature coefficient
- Small temperature coefficient
- Low inductance
- Isolated copper baseplate using DBC technology
- SOT-227 package

● 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℃	100	A
Peak Collector Current	I_{CRM}	t_p=1ms	200	A
Gate-Emitter Voltage	V_{GES}	T_{vj}=25℃	±20	V
Total Power Dissipation (IGBT-inverter)	P_{tot}	T_c=25℃ T_{vjmax}=175℃	535	W

● IGBT Characteristics

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℃	5.0	5.8	6.5	V
Collector-Emitter Cut-off Current	I_{CES}	V_{CE}=1200V,V_{GE}=0V, T_{vj}=25℃			1.0	mA
		V_{CE}=1200V,V_{GE}=0V, T_{vj}=125℃			5.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100A,V_{GE}=15V, T_{vj}=25℃		1.85	2.25	V
		I_C=100A,V_{GE}=15V, T_{vj}=125℃		2.10		V
		I_C=100A,V_{GE}=15V, T_{vj}=150℃		2.20		V
Gate Charge	Q_G			0.68		uC
Input Capacitance	C_{ies}	V_{CE}=25V, V_{GE} =0V, f=1MHz, T_{vj}=25℃		8.8		nF
Reverse Transfer Capacitance	C_{res}			0.27		nF
Internal Gate Resistance	R_{gint}			7.5		Ω
Turn-on Delay Time	$t_{d(on)}$	I_C=100A V_{CE}=600V V_{GE}=±15V R_G=1.5Ω T_{vj}=25℃		129		ns
Rise Time	t_r			40		ns
Turn-off Delay Time	$t_{d(off)}$			232		ns
Fall Time	t_f			176		ns
Energy Dissipation During Turn-on Time	E_{on}			6.2		mJ
Energy Dissipation During Turn-off Time	E_{off}			6.7		mJ
Turn-on Delay Time	$t_{d(on)}$	I_C=100A V_{CE}=600V V_{GE}=±15V R_G=1.5Ω T_{vj}=150℃		105		ns
Rise Time	t_r			46		ns
Turn-off Delay Time	$t_{d(off)}$			260		ns
Fall Time	t_f			309		ns
Energy Dissipation During Turn-on Time	E_{on}			10.7		mJ
Energy Dissipation During Turn-off Time	E_{off}			10.3		mJ
SC Data	Isc	t_p≤10us, V_{GE}=15V, T_{vj}=150℃,V_{CC}=600V, V_{CEM}≤1200V		400		A

● Module Characteristics T_C=25°C unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Isolation Voltage	V_{isol}	t=1min,f=50Hz	2500			V
Maximum Junction Temperature	T_{jmax}				175	℃
Operating Junction Temperature	$T_{vj\ op}$		-40		150	℃
Storage Temperature	T_{stg}		-40		125	℃
Junction to Case	$R_{\theta jc}$	per IGBT			0.28	K/W
Case to Sink	$R_{\theta cs}$	Conductive grease applied		0.15		K/W
Module Electrodes Torque	M_t	Recommended(M4)	0.7	1.0	1.5	N·m
Module to Sink Torque	M_s	Recommended(M4)	0.7	1.0	1.5	N·m
Weight of Module	G			32		g

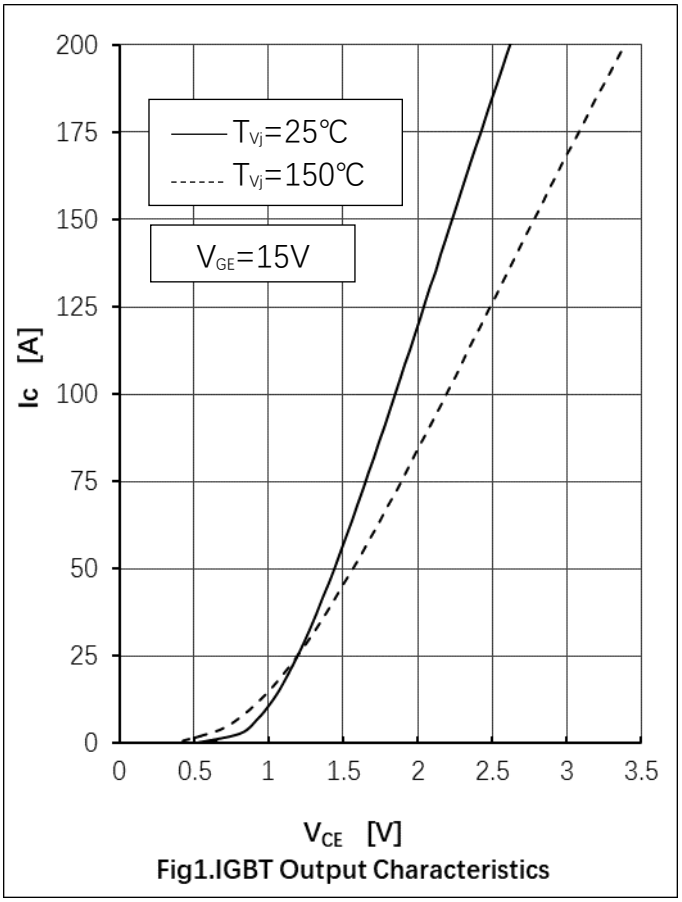


Fig1.IGBT Output Characteristics

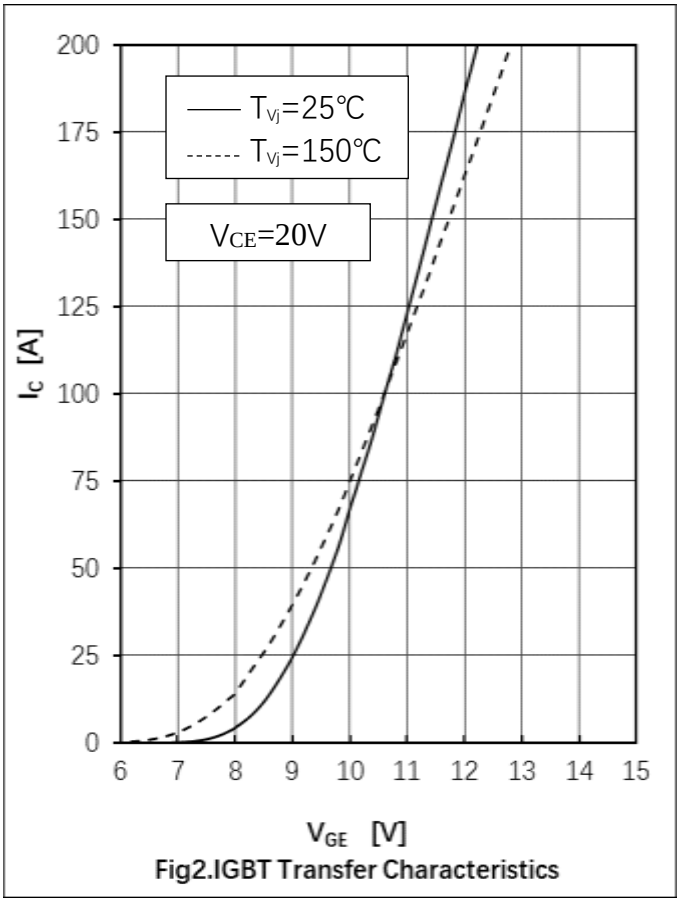


Fig2.IGBT Transfer Characteristics

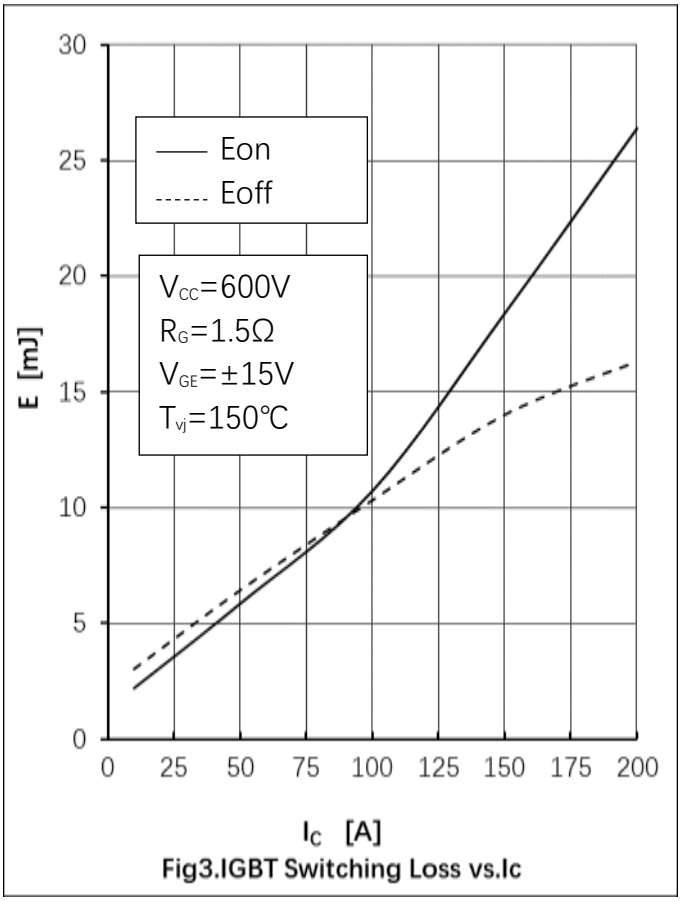


Fig3.IGBT Switching Loss vs.Ic

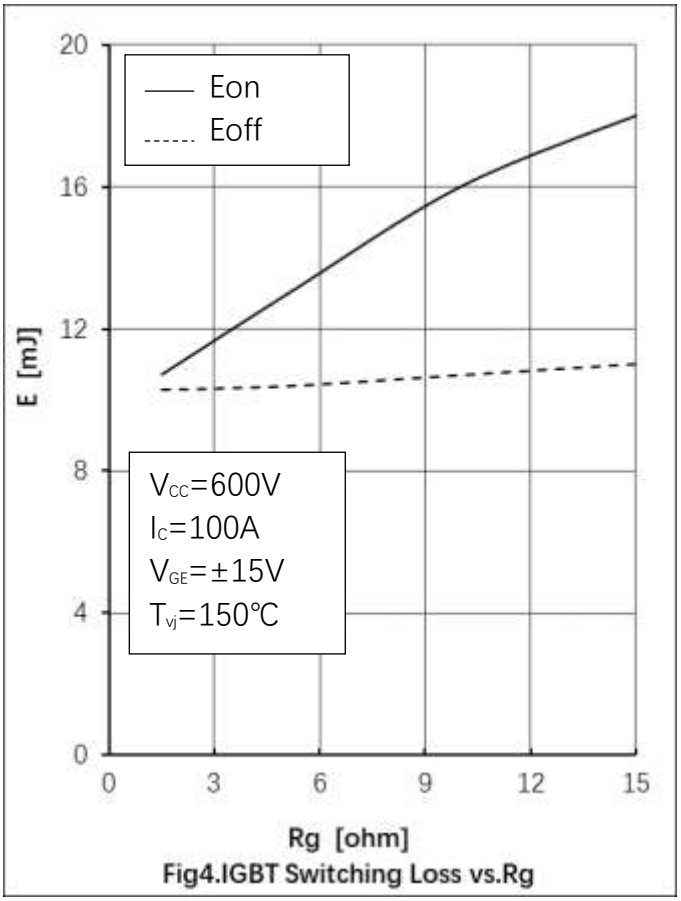


Fig4.IGBT Switching Loss vs.Rg

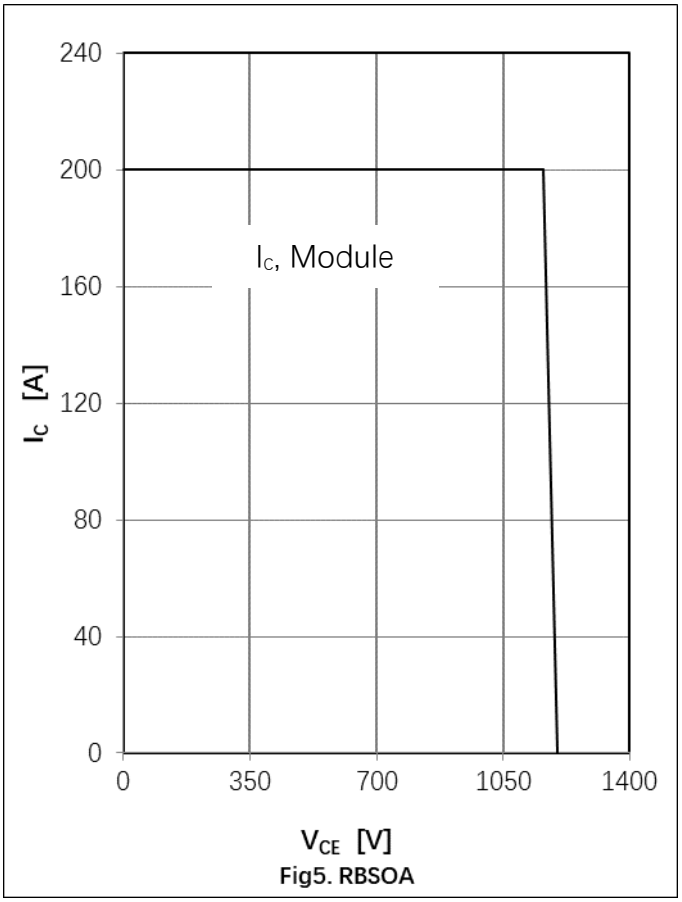


Fig5. RBSOA

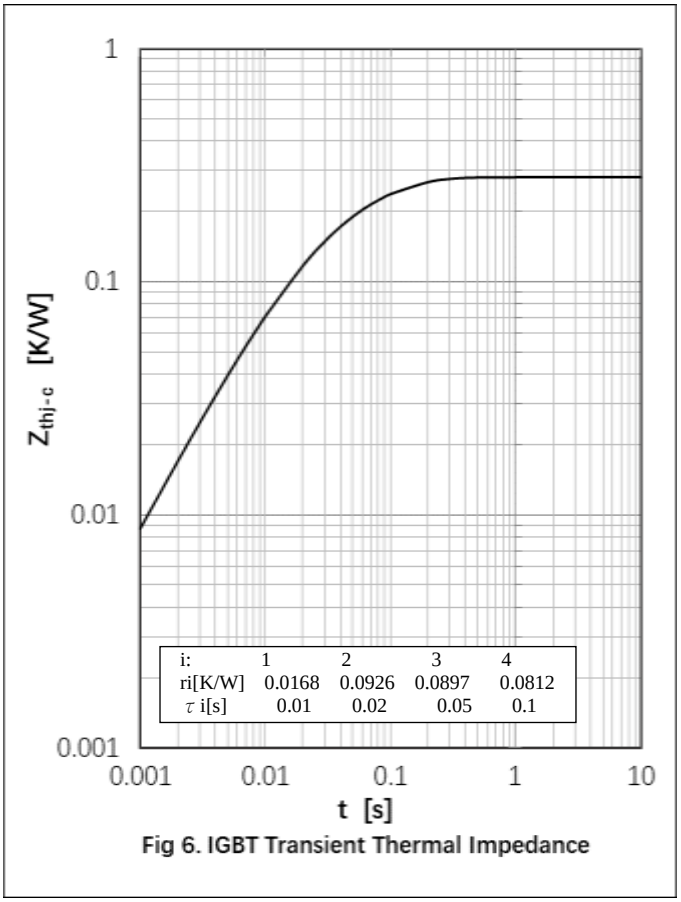
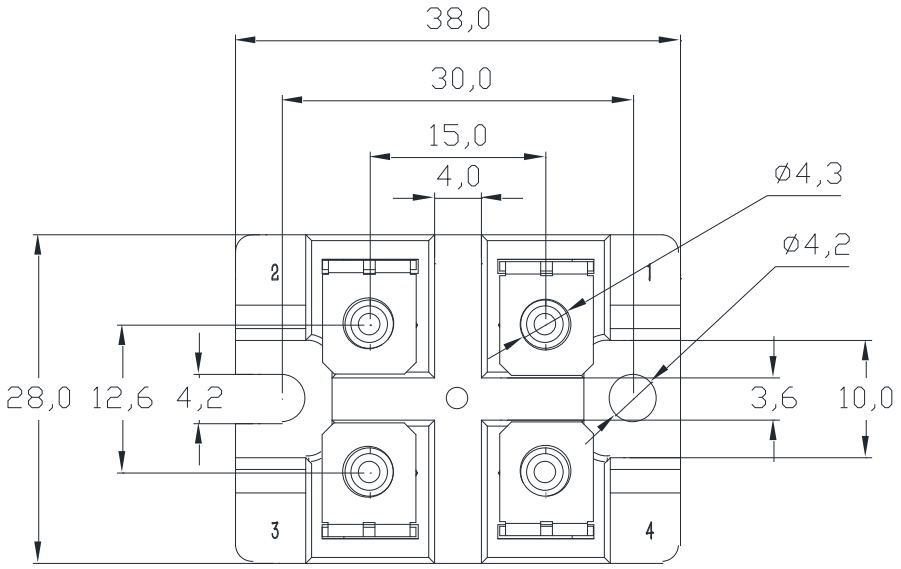
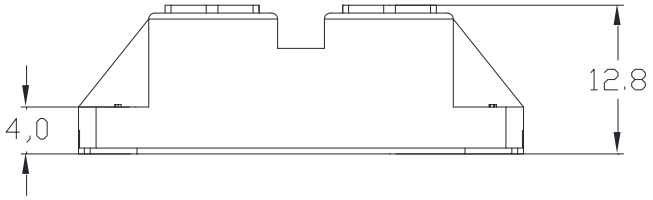


Fig 6. IGBT Transient Thermal Impedance

Package Outline Information

CASE: GJ





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