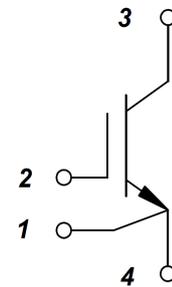## PRODUCT FEATURES

☐ IGBT[3] Chip(Trench+Field Stop technology)

☐ Low switching losses

☐ $V_{CE(sat)}$ with positive temperature coefficient

☐ Fast switching and short tail current

☐ Popular SOT-227 Package

APPLICATIONS

☐ AC motor control

☐ Motion/servo control

☐ Inverter and power supplies

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ABSOLUTE MAXIMUM RATINGS(T_C=25℃ unless otherwise specified)

Symbol	Parameter/Test Conditions		Values	Unit
V_{CES}	Collector Emitter Voltage	T_J=25℃	1200	V
V_{GES}	Gate Emitter Voltage		±20	
I_C	DC Collector Current	T_C=25℃,T_{Jmax}=150℃	105	A
		T_C=80℃,T_{Jmax}=150℃	75	
I_{CM}	Repetitive Peak Collector Current	tp=1ms	150	
P_{tot}	Power Dissipation Per IGBT	T_C=25℃,T_{Jmax}=150℃	348	W

MODULE CHARACTERISTICS(T_C=25℃ unless otherwise specified)

Symbol	Parameter/Test Conditions		Values	Unit
T_{Jmax}	Max. Junction Temperature		150	℃
T_{Jop}	Operating Temperature		-40~125	
T_{stg}	Storage Temperature		-40~125	
V_{isol}	Isolation Breakdown Voltage	AC, 50Hz(R.M.S), t=1minute	3000	V
Torque	to heatsink	Recommended（M4）	0.7~1.1	Nm
	to terminal	Recommended（M4）	0.7~1.1	Nm
Weight			26.5	g

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ELECTRICAL CHARACTERISTICS *(T$_C$=25°C unless otherwise specified)*

| Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
V$_{GE(th)}$	Gate Emitter Threshold Voltage	V$_{CE}$=V$_{GE}$, I$_C$=3mA	5.0	5.8	6.5	
V$_{CE(sat)}$	Collector Emitter Saturation Voltage	I$_C$=75A, V$_{GE}$=15V, T$_J$=25℃		1.7	2.15	V
		I$_C$=75A, V$_{GE}$=15V, T$_J$=125℃		1.9		
I$_{CES}$	Collector Leakage Current	V$_{CE}$=1200V, V$_{GE}$=0V, T$_J$=25℃			1	mA
		V$_{CE}$=1200V, V$_{GE}$=0V, T$_J$=125℃			10	mA
I$_{GES}$	Gate Leakage Current	V$_{CE}$=0V,V$_{GE}$=±15V, T$_J$=25℃	-400		400	nA
R$_{gint}$	Integrated Gate Resistor			10		Ω
Q$_g$	Gate Charge	V$_{CE}$=600V, I$_C$=75A , V$_{GE}$=±15V		0.7		μC
C$_{ies}$	Input Capacitance	V$_{CE}$=25V, V$_{GE}$=0V, f =1MHz		5.3		nF
C$_{res}$	Reverse Transfer Capacitance			200		pF
t$_{d(on)}$	Turn on Delay Time	V$_{CC}$=600V,I$_C$=75A R$_G$ =4.7Ω, V$_{GE}$=±15V, Inductive Load	T$_J$=25℃		260		ns
			T$_J$=125℃		290		ns
t$_r$	Rise Time		T$_J$=25℃		30		ns
			T$_J$=125℃		50		ns
t$_{d(off)}$	Turn off Delay Time	V$_{CC}$=600V,I$_C$=75A R$_G$ =4.7Ω, V$_{GE}$=±15V, Inductive Load	T$_J$=25℃		420		ns
			T$_J$=125℃		520		ns
t$_f$	Fall Time		T$_J$=25℃		70		ns
			T$_J$=125℃		90		ns
E$_{on}$	Turn on Energy	V$_{CC}$=600V,I$_C$=75A R$_G$ =4.7Ω, V$_{GE}$=±15V, Inductive Load	T$_J$=25℃		6.6		mJ
			T$_J$=125℃		9.4		mJ
E$_{off}$	Turn off Energy		T$_J$=25℃		6.8		mJ
			T$_J$=125℃		8.0		mJ
I$_{SC}$	Short Circuit Current	tpsc≤10μS , V$_{GE}$=15V T$_J$=125℃,V$_{CC}$=900V		300		A
R$_{thJC}$	Junction to Case Thermal Resistance （ Per IGBT）				0.36	K /W
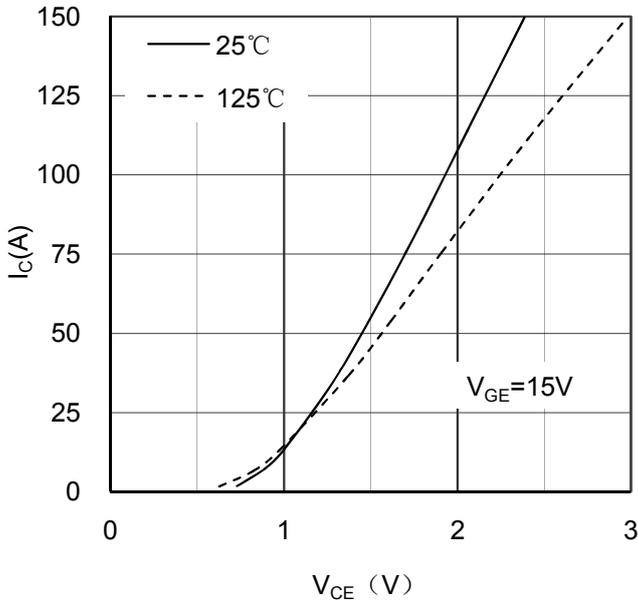
Figure 1. Typical Output Characteristics IGBT
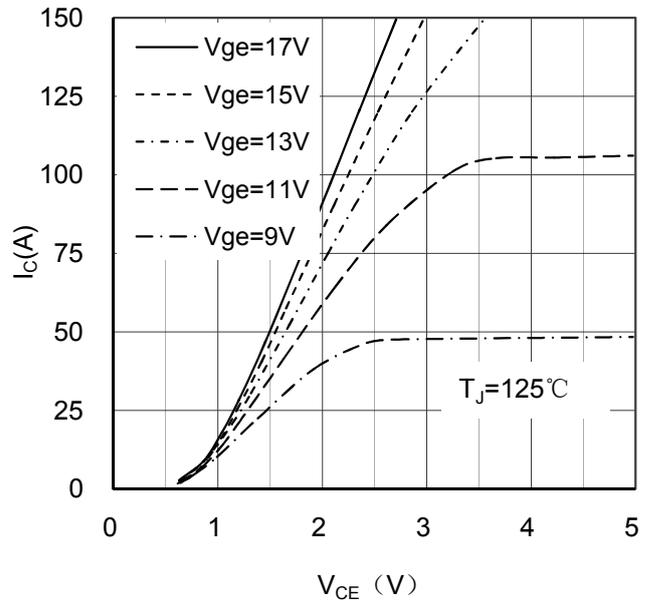
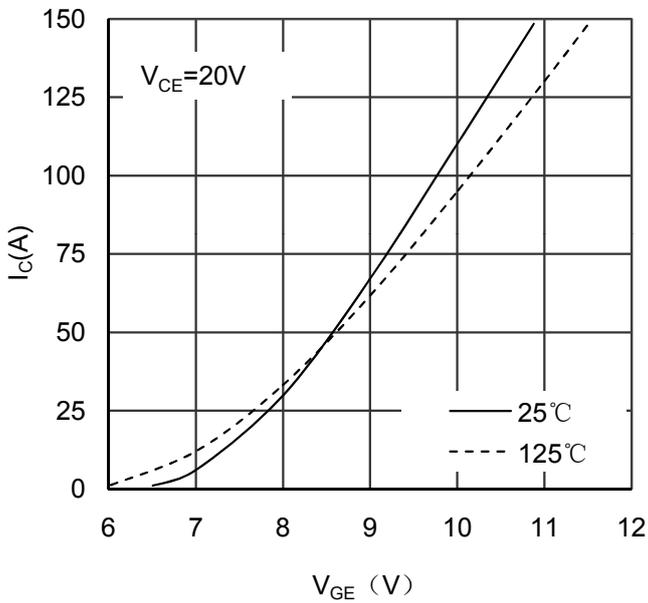Figure 2. Typical Output Characteristics IGBT
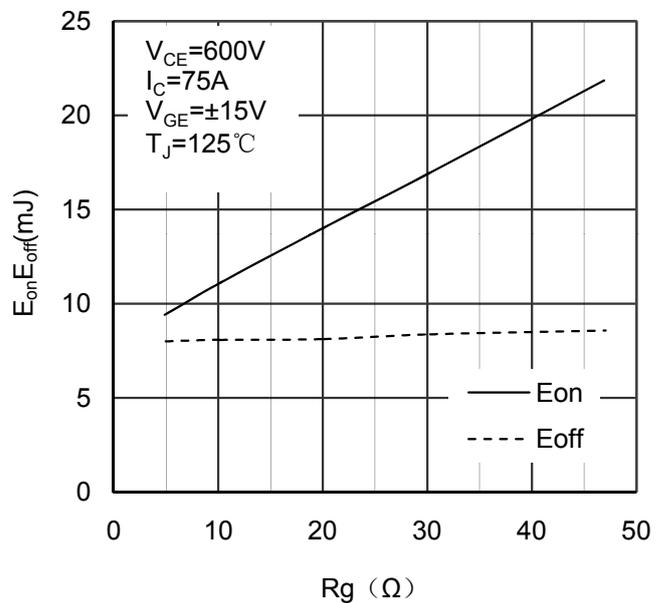
Figure 3. Typical Transfer characteristics IGBT

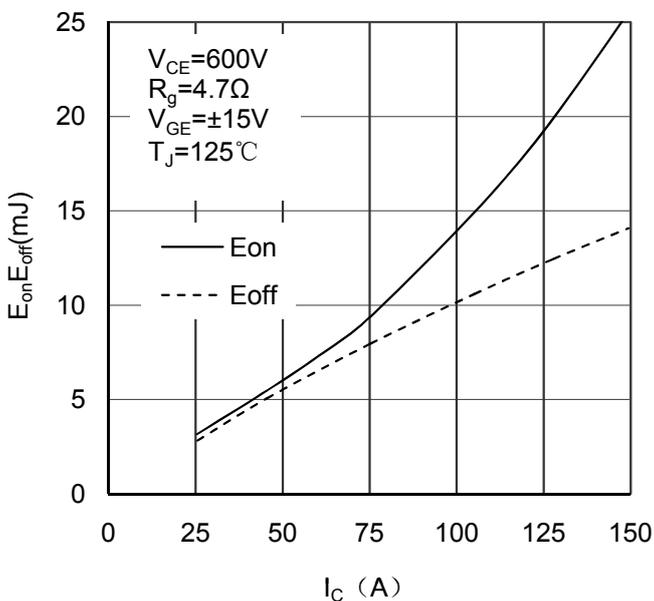Figure 4. Switching Energy vs Gate Resistor IGBT

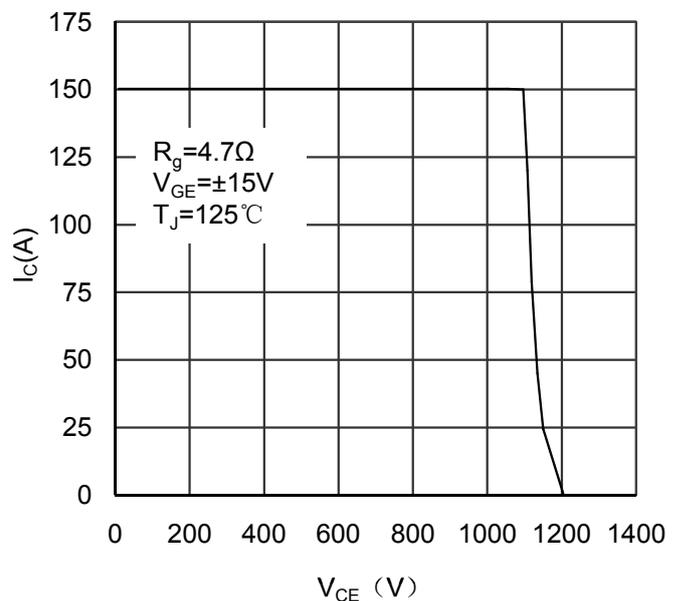Figure 5. Switching Energy vs Collector Current IGBT

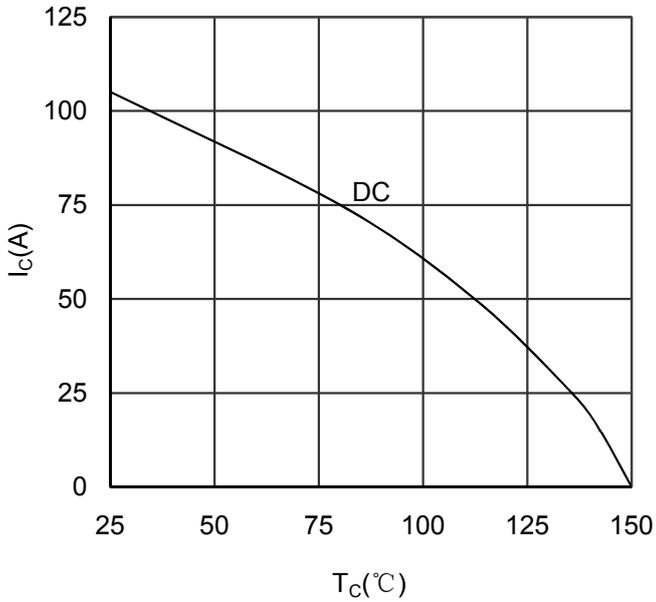Figure 6. Reverse Biased Safe Operating Area IGBT

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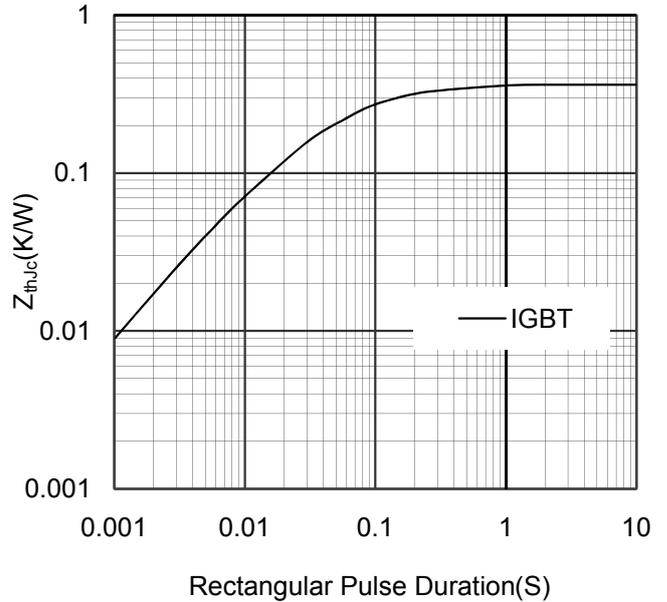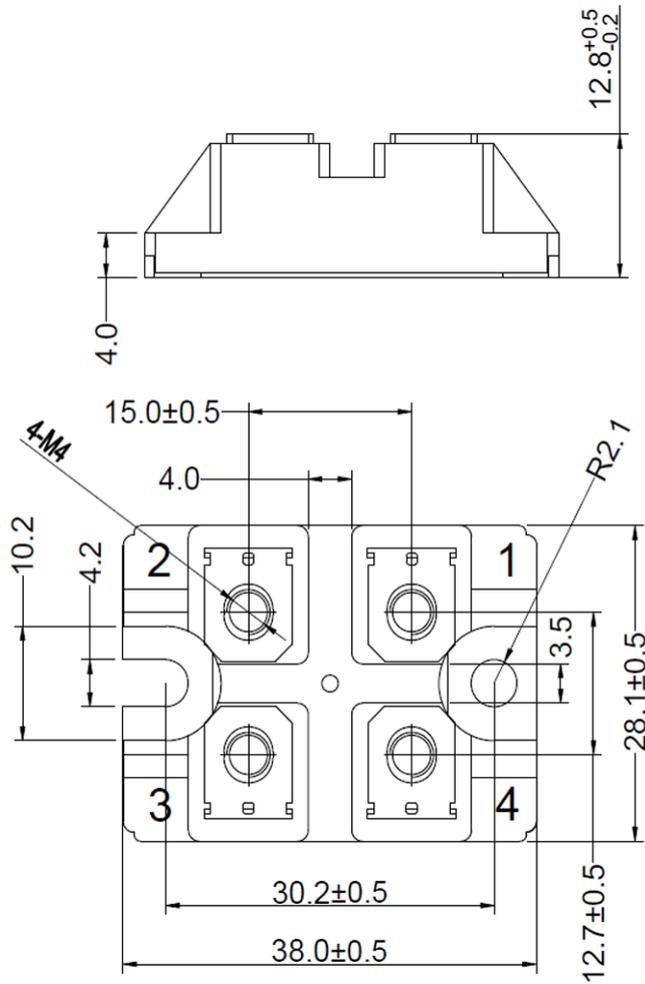Figure 7. Collector Current vs Case temperature IGBT

Figure 8. Transient Thermal Impedance of IGBT

Dimensions in (mm)
Figure 9. Package Outline