SCOMES

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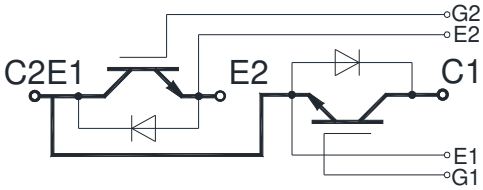
2 in 1 IGBT Modules



Features：

- High short circuit capability,self limiting short circuit current
- IGBT CHIP(Highly rugged SPT+ design)
- $V_{CE(sat)}$ with positive temperature coefficient
- Ultra Low Loss,High Ruggedness
- Free wheeling diodes with fast and soft reverse recovery

Typical Applications：

- AC motor control
- Inverter and power supplies
- Motion/servo control
- Photovoltaic/Fuel cell

SYMBOL	CHARACTERISTIC	TEST CONDITIONS		VALUE			UNIT
				Min	Type	Max	
V_{CES}	Collector-Emitter voltage	T_j=25°C				1700	V
V_{GES}	Gate-Emitter voltage	T_j=25°C				±20	V
I_C	Collector current	T_C=25°C， T_{jmax}=175°C				225	A
		T_C=100°C， T_{jmax}=175°C				150	A
I_{CP}		t_P= 1ms				300	A
P_C	Collector power dissipation	T_j=175°C ,1 device				1071	W
T_j	Junction temperature	/				175	℃
T_{stg}	Storage temperature	/		-40		125	℃
V_{iso}	Isolation between terminal and copper base	T_j=25°C , AC：1minute		4000			V
Screw torque	Mounting(M6)	/		3.0		5.0	N·m
	Terminals(M6)	/		2.5		5.0	N·m
I_{CES}	Zero gate voltage collector current	T_j=25°C ,V_{CE}=1700V，V_{GE}=0V				1	mA
		T_j=150°C ,V_{CE}=1700V，V_{GE}=0V				10	mA
I_{GES}	Gate-Emitter leakage current	T_j=25°C ,V_{CE}=0V，V_{GE}=±15V		-500		500	nA
$V_{GE(th)}$	Gate-Emitter threshold voltage	V_{CE}= V_{GE}，I_C=6mA		5.4	6.2	7.4	V
$V_{CE(sat)}$	Collector-Emitter saturation voltage	T_j=25°C ,V_{GE}=15V，I_C=150A			2.3	2.7	V
		T_j=125°C ,V_{GE}=15V，I_C=150A			2.65		V
		T_j=150°C ,V_{GE}=15V，I_C=150A			2.7		V
C_{ies}	Input capacitance	T_j=25°C ,V_{CE}=25V,V_{GE}=0V,f=1MHz			10.2		nF
t_{on}	Turn-on time	V_{CC}=900V，I_C=150A， V_{GE}=±15V，R_G=7.5Ω， Inductive load	T_j=25°C		255		ns
			T_j=150°C		280		ns
t_r			T_j=25°C		105		ns
			T_j=150°C		110		ns
t_{off}	Turn-off time	V_{CC}=900V，I_C=150A， V_{GE}=±15V，R_G=7.5Ω， Inductive load	T_j=25°C		630		ns
			T_j=150°C		830		ns
t_f			T_j=25°C		180		ns
			T_j=150°C		310		ns
V_F	Forward on voltage	T_j=25°C ,I_F=150A			1.75	2.30	V
		T_j=125°C ,I_F=150A			1.85		V
		T_j=150°C ,I_F=150A			1.90		V
t_{rr}	Reverse recovery time	T_j=150°C ,I_F=150A			950		ns
$R_{th(j-c)}$	Thermal resistance(1 device)	IGBT				0.14	℃/W
		FWD				0.24	℃/W
W_t	Weight					300	g
Outline	454H3P						

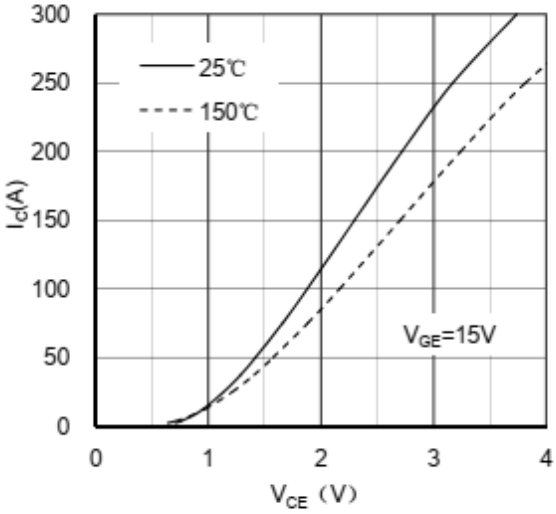


Figure 1. Typical Output Characteristics IGBT-inverter

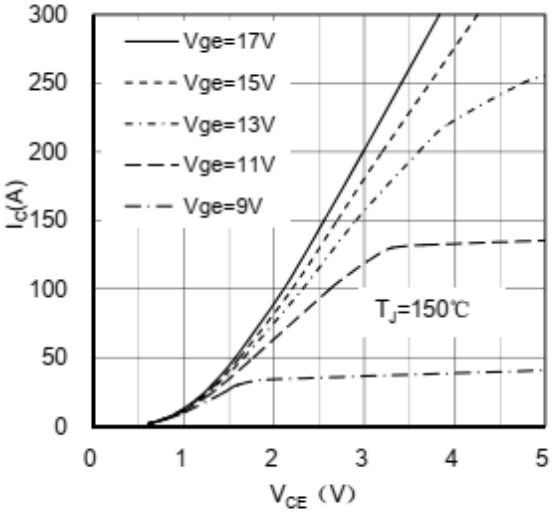


Figure 2. Typical Output Characteristics IGBT-inverter

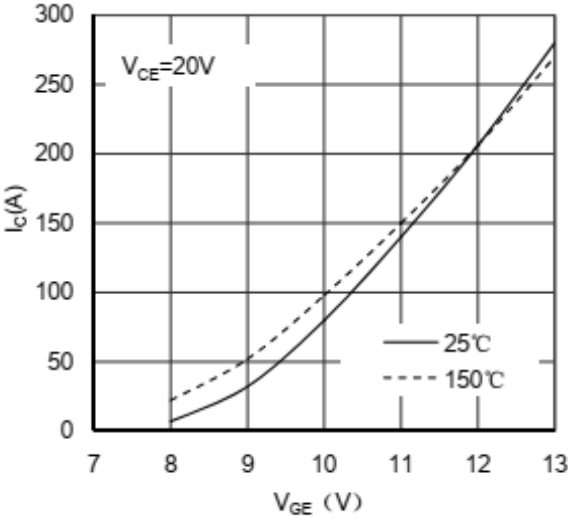


Figure 3. Typical Transfer characteristics IGBT-inverter

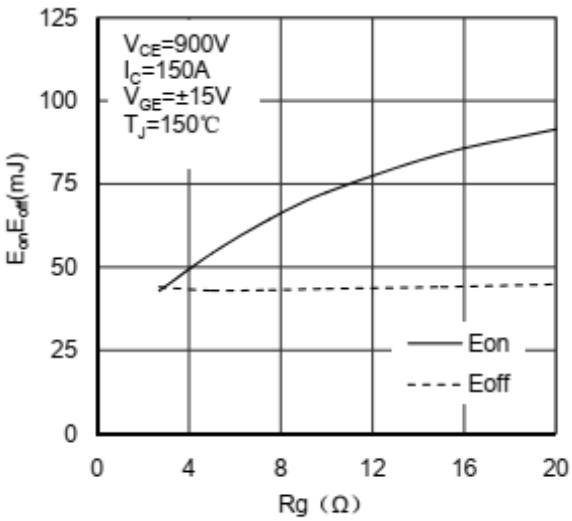


Figure 4. Switching Energy vs Gate Resistor IGBT-inverter

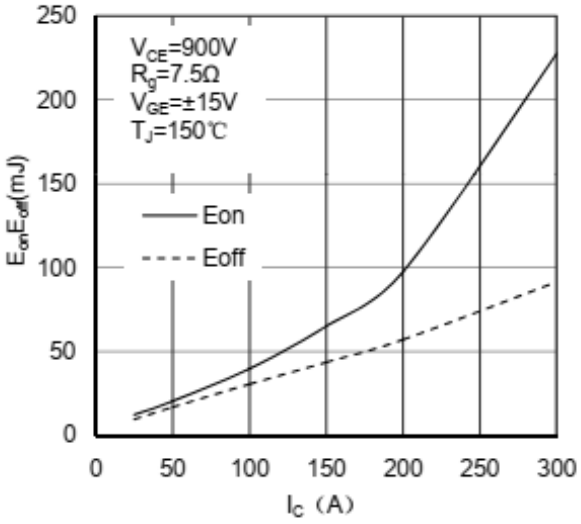


Figure 5. Switching Energy vs Collector Current IGBT-inverter

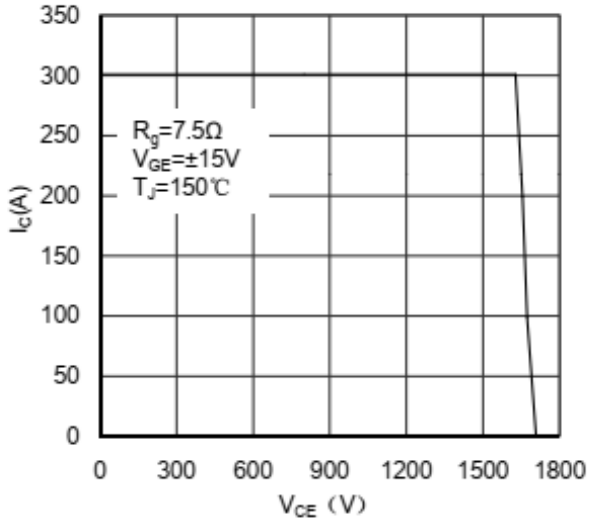


Figure 6. Reverse Biased Safe Operating Area IGBT-inverter

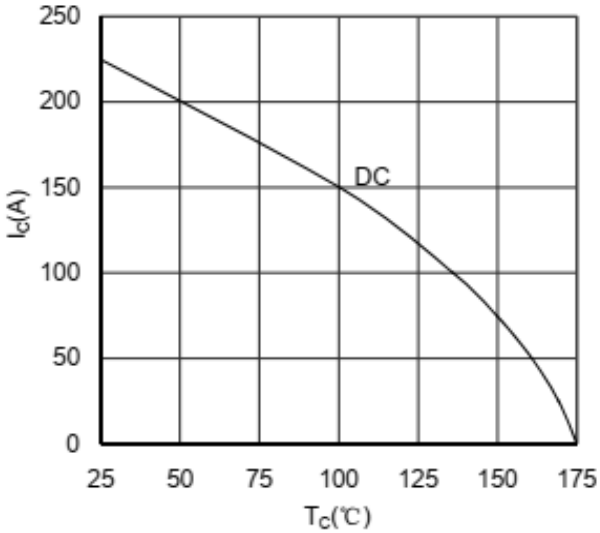


Figure 7. Collector Current vs Case temperature
IGBT -inverter

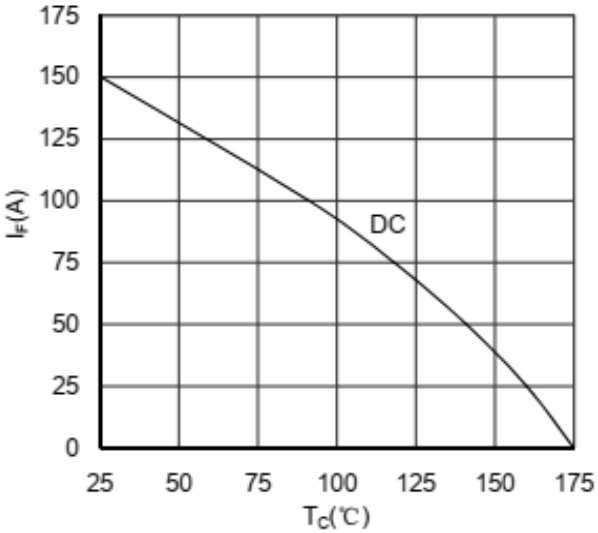


Figure 8. Forward current vs Case temperature
Diode -inverter

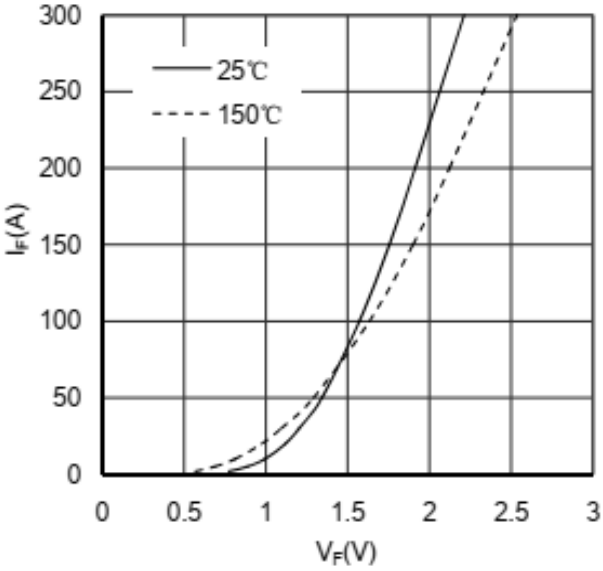


Figure 9. Diode Forward Characteristics Diode -inverter

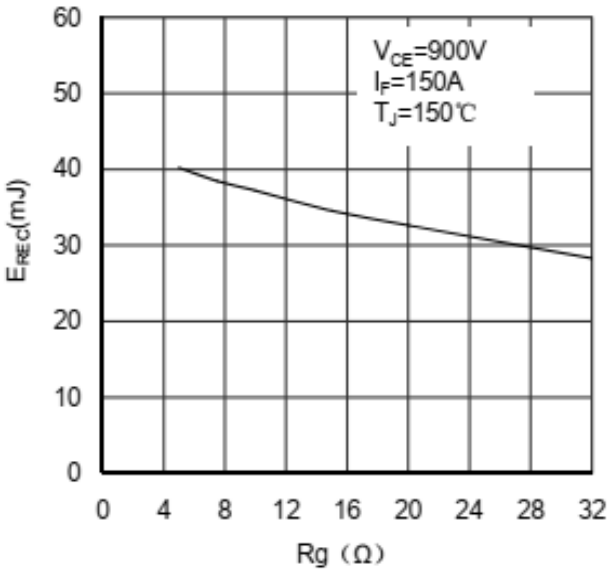


Figure 10. Switching Energy vs Gate Resistor Diode -
inverter

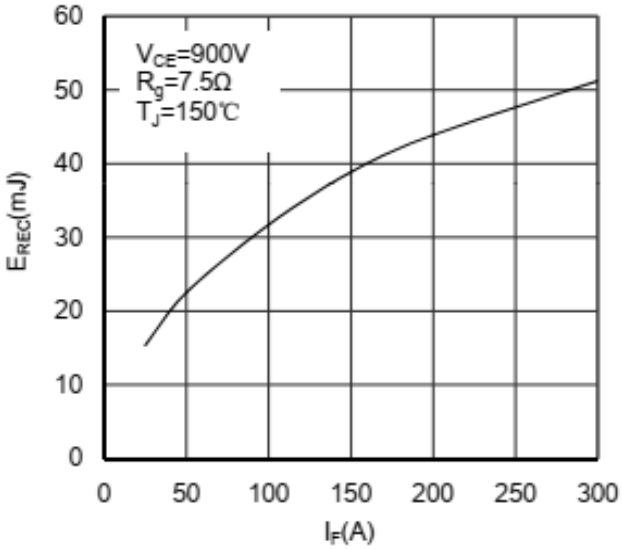


Figure 11. Switching Energy vs Forward Current Diode-inverter

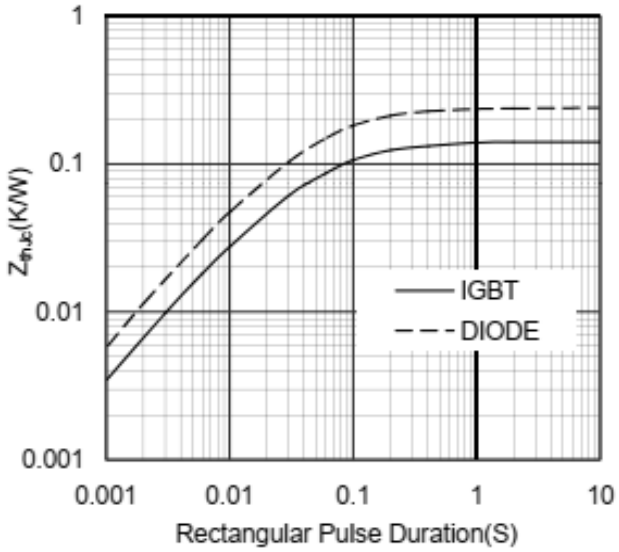
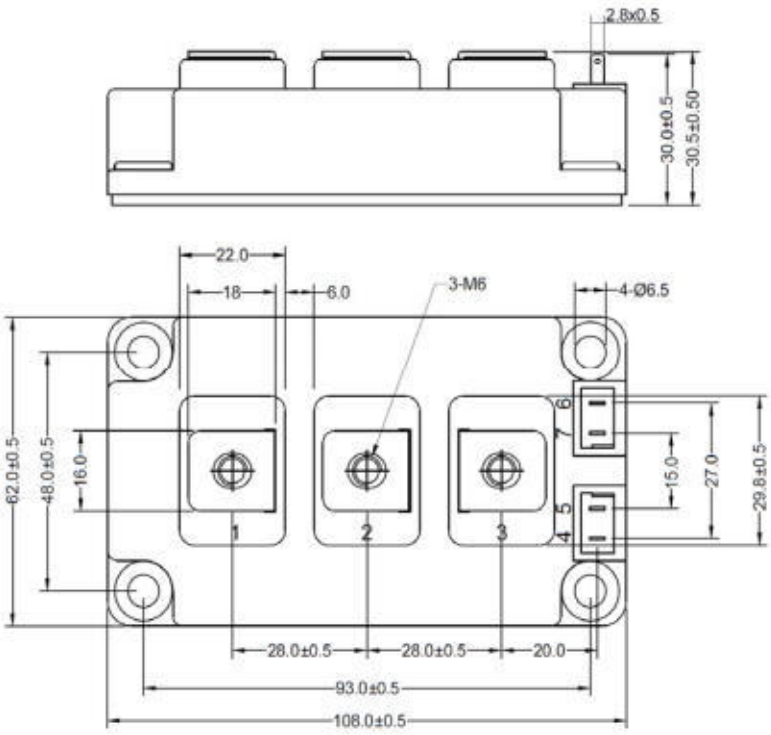


Figure 12. Transient Thermal Impedance of
Diode and IGBT-inverter

Outline:



Dimensions in (mm)

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