

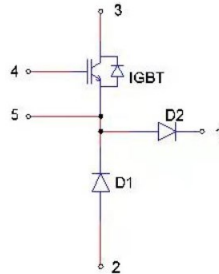
## 62mm Customer Specific IGBT Module

## 电气特性:

- 1200V 沟槽栅/场终止工艺
- 低开关损耗
- 正温度系数

## 典型应用:

- 高频电源
- 焊机


 $V_{CES}=1200V, I_{C\ nom}=450A/I_{CRM}=900A$ 
IGBT, 逆变器 / IGBT, Inverter

## 最大额定值 / Maximum Ratings

Parameter	Conditions	Symbol	Value	Unit
集电极-发射极电压 Collector-Emitter voltage	$T_{vj}=25^{\circ}C$	$V_{CES}$	1200	V
连续集电极直流电流 Continuous DC collector current	$T_C=100^{\circ}C, T_{vj\ max}=175^{\circ}C$	$I_{C\ nom}$	450	A
集电极重复峰值电流 Repetitive peak collector current	$t_p=1\ ms$	$I_{CRM}$	900	A
栅极-发射极电压 Gate emitter voltage		$V_{GE}$	$\pm 20$	V

## 特征值 / Characteristic Values

Parameter	Conditions	Symbol	Value			Unit
			Min.	Typ.	Max.	
集电极-发射极饱和电压 Collector-Emitter saturation voltage	$V_{GE}=15V, I_C=450A$ $T_{vj}=25^{\circ}C$	$V_{CESat}$		2.13	2.60	V
栅极-发射极阈值电压 Gate-Emitter threshold voltage	$I_C=17mA, V_{GE}=V_{CE}$ $T_{vj}=25^{\circ}C$	$V_{GE(th)}$	5.10	5.70	6.30	
栅电荷 Gate charge	$V_{GE}=-15V\dots+15V$	$Q_G$		2.09		$\mu C$
内部栅极电阻 Internal gate resistor		$R_{Gint}$		1.80		$\Omega$
输入电容 Input capacitance	$f=1\ MHz, V_{CE}=25\ V, V_{GE}=0\ V$ $T_{vj}=25^{\circ}C$	$C_{ies}$		31.82		nF
反向传输电容 Reverse transfer capacitance		$C_{res}$		1.09		

集电极-发射极截止电流 Collector-emitter cut-off current	$V_{CE}=1200V, V_{GE}=0V$	$T_{vj}=25^{\circ}C$	$I_{CES}$			2	mA		
栅极-发射极漏电流 Gate-emitter leakage current	$V_{CE}=0V, V_{GE}=20V$	$T_{vj}=25^{\circ}C$	$I_{GES}$			200	nA		
开通延迟时间 Turn-on delay time	$I_C=450A, V_{CE}=600V$ $V_{GE}=\pm 15V, R_G=3.6\Omega$ (inductive load)	$T_{vj}=25^{\circ}C$	$t_{don}$		170		ns		
上升时间 Rise time			$t_r$		90				
关断延迟时间 Turn-off delay time			$t_{doff}$		380				
下降时间 Fall time			$t_f$		110				
开通损耗能量（每脉冲） Turn-on energy loss per pulse					$E_{on}$		49.54		mJ
关断损耗能量（每脉冲） Turn-off energy loss per pulse					$E_{off}$		42.00		
在开关状态下温度 Temperature under switching conditions			$T_{vjop}$	-40		150	$^{\circ}C$		

## 二极管，逆变器 / Diode, Inverter

### 最大额定值 / Maximum Ratings

Parameter	Conditions	Symbol	Value	Unit
反向重复峰值电压 Repetitive peak reverse voltage	$T_{vj}=25^{\circ}C$	$V_{RRM}$	1200	V
连续正向直流电流 Continuous DC forward current		$I_F$	240	A
正向重复峰值电流 Repetitive peak forward current	$t_p=1ms$	$I_{FRM}$	480	A
$I^2t$ 值 $I^2t$ -value	$t_p=10ms, \sin 180^{\circ}, T_{vj}=125^{\circ}C$	$I^2t$	2280	$A^2s$

### 特征值 / Characteristic Values

Parameter	Conditions	Symbol	Value			Unit	
			Min.	Typ.	Max.		
正向电压 Forward voltage	$I_F=240A, V_{GE}=0V$	$T_{vj}=25^{\circ}C$	$V_F$		2.10	2.60	V

二极管 1 和二极管 2 / Diode1 and Diode2

Parameter	Conditions	Symbol	Value	Unit
反向重复峰值电压 Repetitive peak reverse voltage	$T_{vj}=25^{\circ}\text{C}$	$V_{RRM}$	1200	V
连续正向直流电流 Continuous DC forward current		$I_F$	400	A
正向重复峰值电流 Repetitive peak forward current	$t_p=1\text{ms}$	$I_{FRM}$	800	A

## 特征值 / Characteristic Values

Parameter	Conditions	Symbol	Value			Unit
			Min.	Typ.	Max.	
正向电压 Forward voltage	$I_F=400\text{A}, V_{GE}=0\text{V}$ $T_{vj}=25^{\circ}\text{C}$	$V_F$		2.30	2.70	V

模块 / Module

Parameter	Conditions	Symbol	Value			Unit
绝缘测试电压 Isolation test voltage	RMS, $f=50\text{Hz}, t=1\text{min}$	$V_{ISOL}$	4000			V
内部绝缘 Internal isolation			$\text{Al}_2\text{O}_3$			
储存温度 Storage temperature		$T_{stg}$	-40		125	$^{\circ}\text{C}$
模块安装的扭矩 Mounting torque for modul mounting		M	3.0		6.0	Nm
重量 Weight		W		325		g

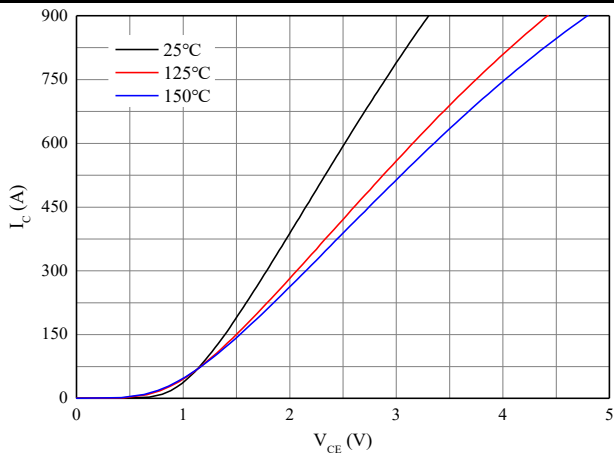


Figure 1. Typical output characteristics ( $V_{GE}=15V$ )

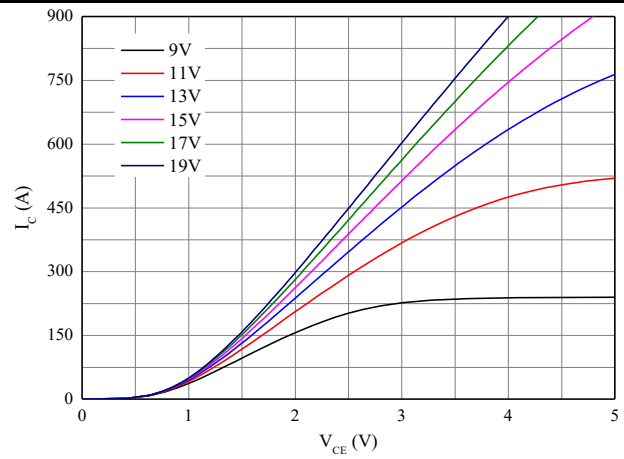


Figure 2. Typical output characteristic ( $T_{vj}=150^{\circ}C$ )

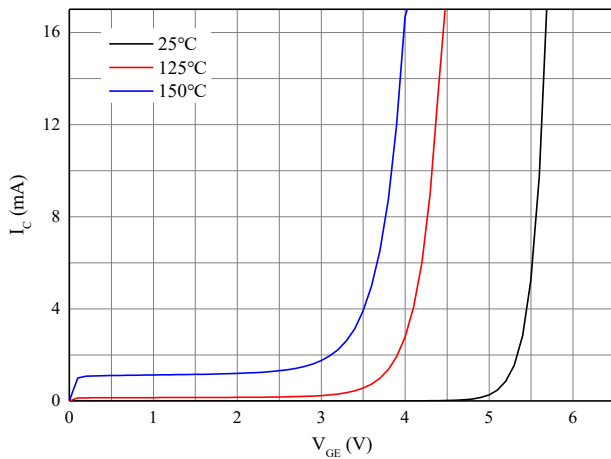


Figure 3. Threshold characteristic ( $V_{GE}=V_{CE}$ )

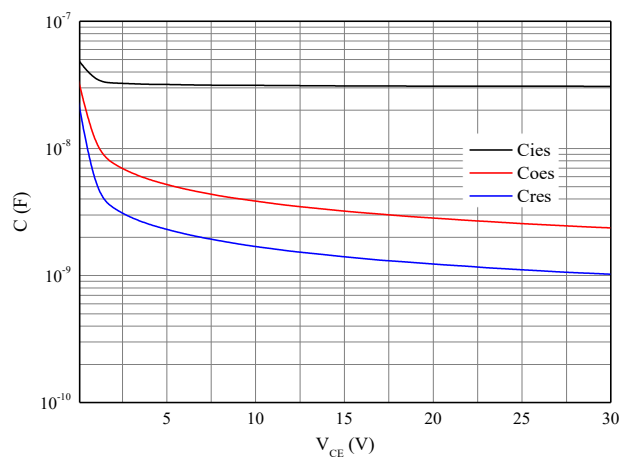
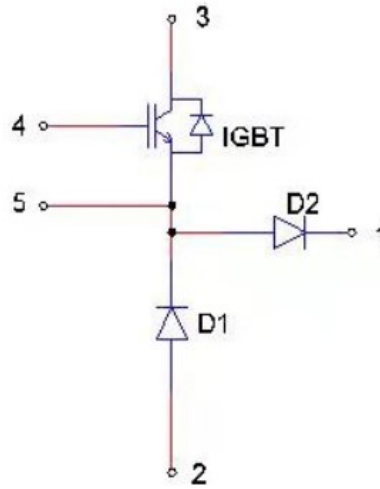
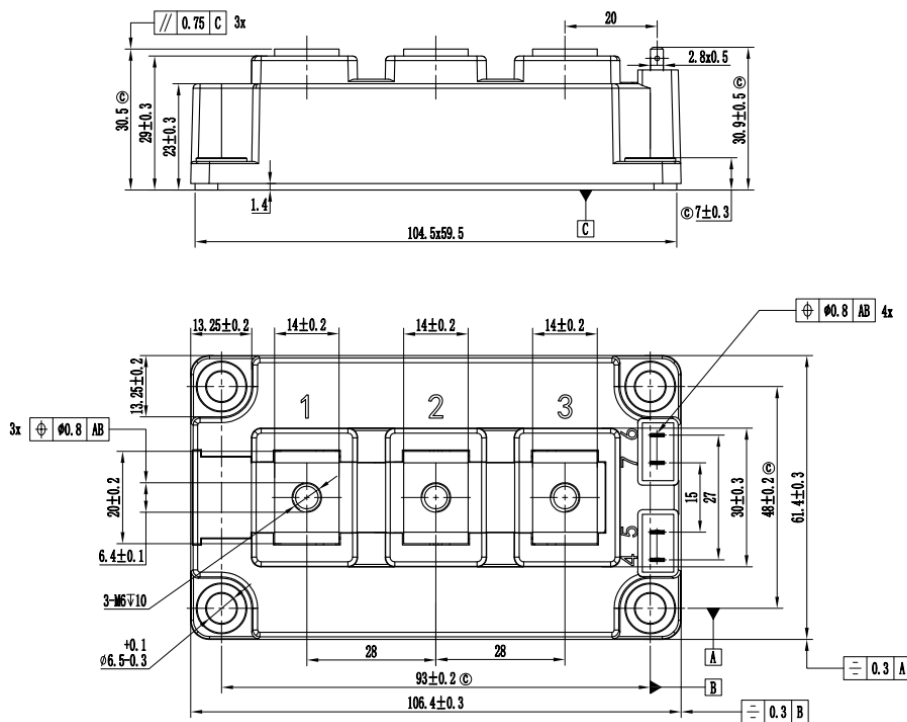


Figure 4. Capacitance characteristic

接线图 / Circuit diagram



封装尺寸 / Package outlines



注: 1. © 尺寸为关键管控尺寸  
2. 未标注公差按GB/T1804-□执行