

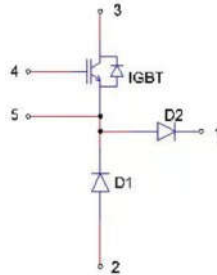
62mm Customer Specific IGBT Module

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}	± 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		μC
内部栅极电阻 Internal gate resistor		R_{Gint}		1.80		Ω
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		
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			Al_2O_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

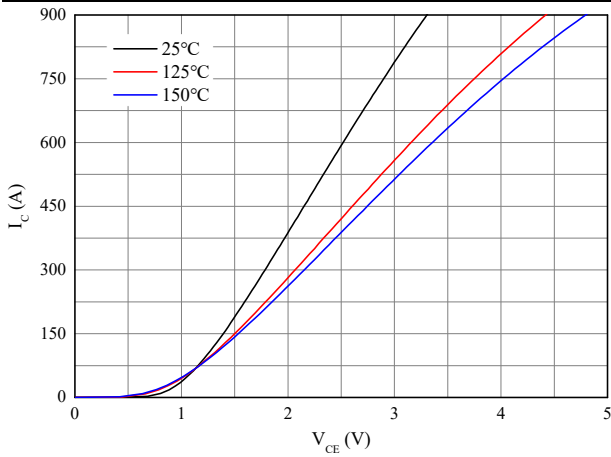


Figure 1. Typical output characteristics ($V_{GE}=15V$)

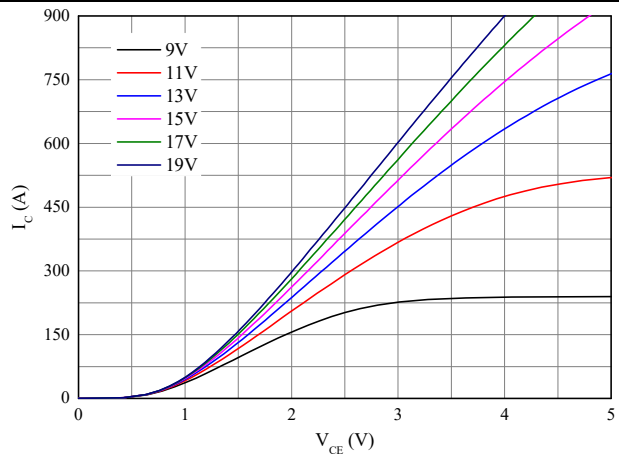


Figure 2. Typical output characteristic ($T_{vj}=150^{\circ}C$)

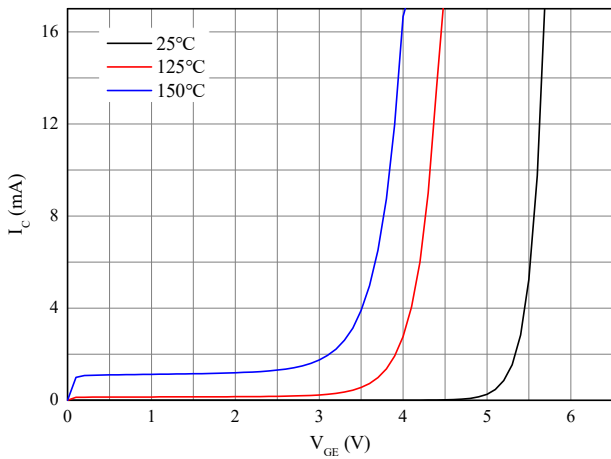


Figure 3. Threshold characteristic ($V_{GE}=V_{CE}$)

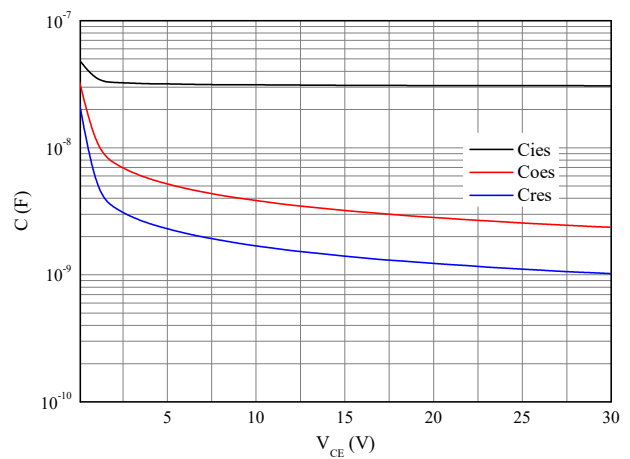
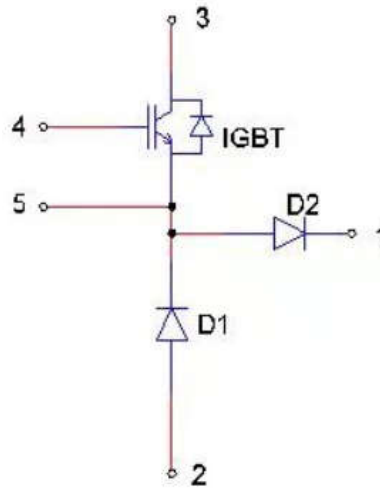


Figure 4. Capacitance characteristic

接线图 / Circuit diagram



封装尺寸 / Package outlines

