

合肥中恒微半导体有限公司

HeFei Cpower Technology.,Ltd.

2A75ZF120S1P



➤ 产品外观 / Appearance

Preliminary



$V_{CES} = 1200V$

$I_{C\text{nom}} = 75A / I_{CRM} = 150A$

➤ 特性 / Features

- A. 采用 NPT 技术的高速 IGBT
- B. 低开关损耗
- C. 标准封装

- A. High Speed IGBT in NPT Technology
- B. Low Switching Losses
- C. Standard Housing

➤ 用途 / Applications

- A. 电机传动
- B. 不间断电源应用
- C. 大功率变流器

- A. Motor Drives
- B. UPS Systems
- C. High Power Converters

➤ 相关信息 / Related Information

条形码 / Barcode Code



二维码 / DMX – Code



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IGBT, 逆变器 / IGBT, Inverter



最大额定值 / Maximum Rated Values

集电极-发射极电压 Collector-emitter voltage	$T_j = 25^\circ\text{C}$	V_{CES}	1200	V
连续集电极直流电流 Continuous DC collector current	$T_c = 80^\circ\text{C}, T_{j\text{max}} = 150^\circ\text{C}$	$I_{\text{C nom}}$	75	A
集电极重复峰值电流 Repetitive peak collector current	$t_p = 1 \text{ ms}$	I_{CRM}	150	A
栅极-发射极峰值电压 Gate-emitter peak voltage		V_{GES}	+/-20	V

特征值 / Characteristic Values

			Min.	Typ.	Max.		
集电极-发射极饱和电压 Collector-emitter saturation voltage	$I_c = 75 \text{ A}, V_{\text{GE}} = 15 \text{ V}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	$V_{\text{CE sat}}$	3.1 3.8		V	
栅极阈值电压 Gate threshold voltage	$I_c = 4 \text{ mA}, V_{\text{CE}} = V_{\text{GE}}, T_j = 25^\circ\text{C}$		V_{Geth}	5.0	5.8	6.6	
内部栅极电阻 Internal gate resistor	$T_j = 25^\circ\text{C}$		R_{Gint}	3.0		Ω	
输入电容/Input capacitance	$f = 1 \text{ MHz}, T_j = 25^\circ\text{C}, V_{\text{CE}} = 25 \text{ V}, V_{\text{GE}} = 0 \text{ V}$		C_{ies}	5.2		nF	
反向传输电容 Reverse transfer capacitance		C_{res}	0.42		nF		
集电极-发射极截止电流 Collector-emitter cut-off current	$V_{\text{CE}} = 1200 \text{ V}, V_{\text{GE}} = 0 \text{ V}, T_j = 25^\circ\text{C}$		I_{CES}		0.5	mA	
栅极-发射极漏电流 Gate-emitter leakage current	$V_{\text{CE}} = 0 \text{ V}, V_{\text{GE}} = 20 \text{ V}, T_j = 25^\circ\text{C}$		I_{GES}		400	nA	
开通延迟时间 Turn-on delay time	$I_c = 75 \text{ A}, V_{\text{CE}} = 600 \text{ V}$ $V_{\text{GE}} = \pm 15 \text{ V}$ $R_{\text{Gon}} = 10 \Omega$ $R_{\text{Goff}} = 5.1 \Omega$ Inductive Load	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	$t_{\text{d on}}$	68 81		ns	
上升时间/Rise time		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	t_r	58 69		ns	
关断延迟时间 Turn-off delay time		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	$t_{\text{d off}}$	250 283		ns	
下降时间/Fall time		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	t_f	29 35		ns	
开通损耗能量 Turn-on energy loss		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	E_{on}	7.1 10.3		mJ	
关断损耗能量 Turn-off energy loss		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	E_{off}	1.9 3.1		mJ	
短路数据/SC data		$V_{\text{GE}} \leq 15 \text{ V}, V_{\text{CC}} = 600 \text{ V}$ $t_p \leq 10 \mu\text{s}, T_j = 125^\circ\text{C}$		I_{sc}	530		A
结 - 外壳热阻 Thermal resistance, junction to case		每个 IGBT / per IGBT		R_{thJC}		0.20	K/W
在开关状态下温度 Temperature under switching			$T_{j \text{ op}}$	-40	125	$^\circ\text{C}$	

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二极管, 逆变器 / Diode, Inverter



最大额定值 / Maximum Rated Values

反向重复峰值电压 Repetitive peak reverse voltage	$T_j = 25^\circ\text{C}$	V_{RRM}	1200	V
连续正向直流电流 Continuous DC forward current		I_F	75	A
正向重复峰值电流 Repetitive peak forward current	$t_p = 1\text{ ms}$	I_{FRM}	150	A

特征值 / Characteristic Values

			Min.	Typ.	Max.	
正向电压/Forward voltage	$I_F = 75\text{ A}, V_{GE} = 0\text{ V}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	V_F	1.9 2.1		V
反向恢复峰值电流 Peak reverse recovery current	$I_F = 75\text{ A}, V_R = 600\text{ V}$ $V_{GE} = -15\text{ V}$ $-di_F/dt = 1200\text{ A}/\mu\text{s}$	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	I_{RM}	68 83		A
恢复电荷/Recovered charge		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	Q_r	4.9 9.1		μC
反向恢复损耗 Reverse recovery energy		$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	E_{rec}	3.0 4.3		mJ
结 - 外壳热阻 Thermal resistance, junction to case	每个二极管 / per diode		R_{thJC}		0.38	K/W
在开关状态下温度 Temperature under switching			T_{jop}	-40	125	$^\circ\text{C}$

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模块 / Module



绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}	2.5	kV
模块基板材料 Material of module baseplate			Cu	
内部绝缘/Internal isolation	基本绝缘 (class 1, IEC 61140) Basic insulation (class1, IEC 61140)		Al_2O_3	
爬电距离/Creepage distance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal		17.0 20.0	mm
电气间隙/Clearance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal		17.0 9.5	mm
相对电痕指数 Comperative tracking index		CTI	> 200	

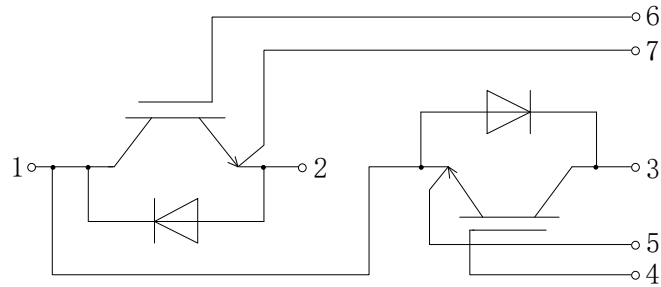
			Min.	Typ.	Max.	
杂散电感, 模块 Stray inductance module		L_{SCE}		30		nH
模块引线电阻 Module lead resistance	$T_c = 25^\circ C$, 每个开关 / per switch	$R_{CC'+EE'}$		0.75		m Ω
储存温度/Storage temperature		T_{stg}	-40		125	$^\circ C$
模块安装的安装扭矩 / Mounting torque for module mounting	螺丝 M6 / Screw M6	M	3.00		5.00	Nm
端子联接扭矩 Terminal connection torque	螺丝 M5 / Screw M5	M	2.5		5.0	Nm
重量/Weight		G		160		g

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封装 / Package

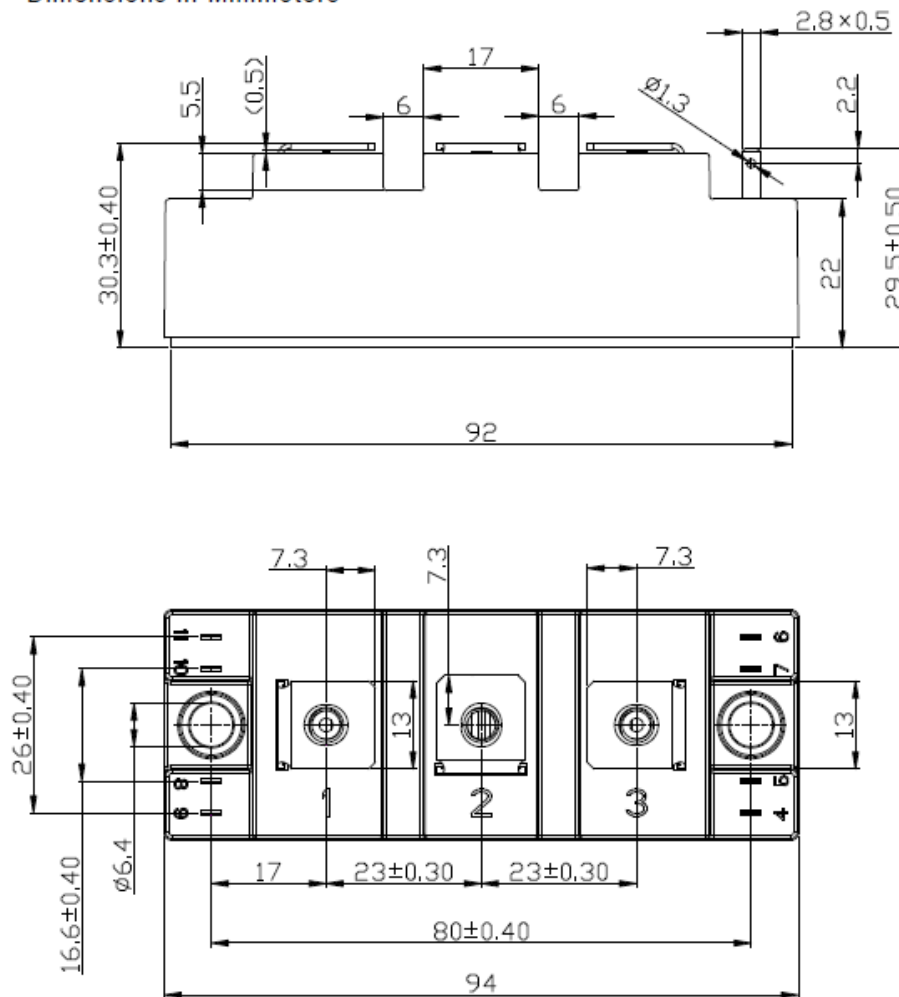


接线图 / Circuit Diagram



封装尺寸 / Package outlines

Dimensions in Millimeters



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使用条件及条款

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