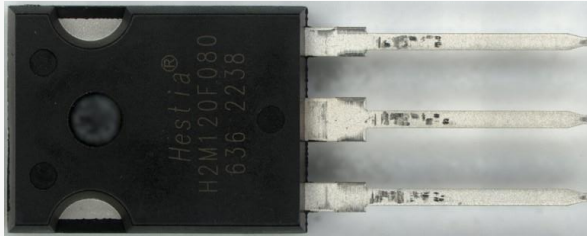
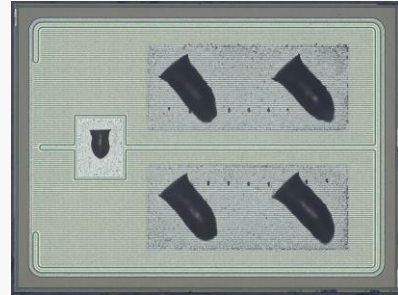


## **SiC MOSFET(1200V) : Hestia Power(Shanghai Hanxin Technology) H2M120F080 Structure Analysis Report**



Package appearance



SiC MOSFET die (Top Metal )

### **Report summary**

The SiC market is rapidly growing due to the electrification of automobiles. Hestia Power (Shanghai Hanxin Technology), founded in Shanghai in 2019, is one few companies in China that can mass produce SiC schottky barrier diodes, SiC MOSFETs, and SiC power modules that combine those using automotive-grade SiC for EV applications, and they ship thier SiC products to around the world.

LTEC released a structure analysis report for SiC MOSFET manufactured by Hestia Power.

### **Product specifications and feature**

- Product number : H2M120F080 Gen2 SiC MOSFET
- $V_{DS} = 1200V$ ,  $I_d=33A$ ,  $R_{DS(on)}=80\text{ m}\Omega$
- Product release date : 2022 ~ 2023 (Estimated)
- AEC-Q101
- Application : Switching Mode Power Supply, DC/DC Converters, EV Charging Station, Motor Drives, Power Inverters etc.

### **Report contents and results summary (See page 2 for table of contents)**

#### **Structure analysis report (81 pages)**

- Polycide is formed to lower the resistance of the Gate electrode.
- The transistor cell has a novel composite structure with a built-in source resistance. It is estimated that this layout design is intended to enhance short circuit tolerance.
- We also analyzed the annealing marks on the backside of the die.

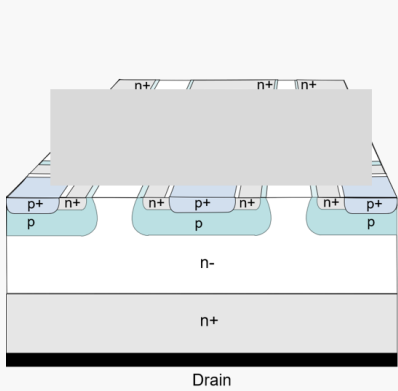
**Please contact us for report pricing.**

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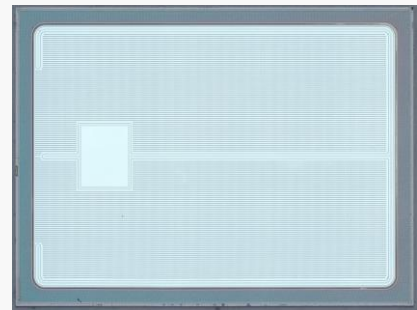
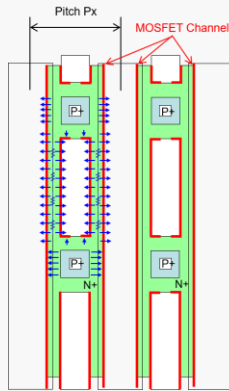
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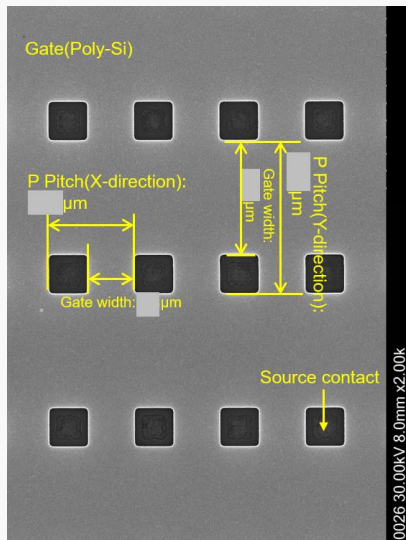
# Excerpt from structure analysis report (1)



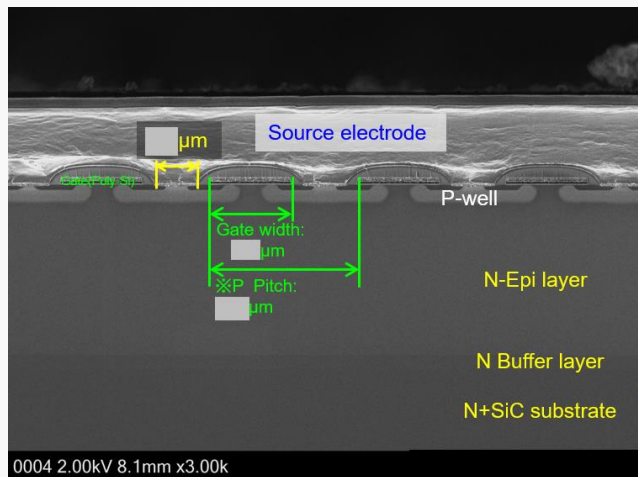
**Transistor cell schematic diagram**



**SiC MOSFET die (Poly-Si layer)**



**Plane image of MOSFET cell array (Poly-Si layer)**



**MOSFET cell array cross-sectional SEM image**

**Table4-1: Device structure: SiC MOSFET**

		BASiC B2M065120Z	Inventchip IV1Q12080T3	SASTC SA1M12000065D	Hestia H2M120F080
On resistance RON	(mΩ) / Vgs (V)	65 / 18	80 / 20	65 / -	80 / 20
On resistance per unit area RONxAA	mΩ·mm <sup>2</sup>	480	680	580	580
Die size	mm x mm	3.78 x 3.78	3.90 x 3.07	3.08 x 3.58	3.17 x 3.80
Transistor area AA	mm <sup>2</sup>	14.7	12.1	11.0	12.0
Cell pitch, P	μm	11.2	11.4	11.0	11.0

**Comparison with three Chinese SiC manufacturers**

