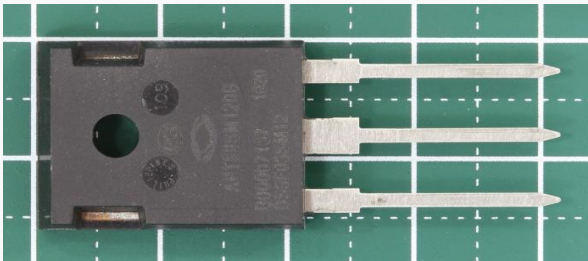


## Microsemi APT80SM120B 1200V SiC MOSFET ANALYSIS REPORT

**November 2017.** LTEC Corporation released a detailed structure and process analysis report of this 1200V silicon carbide MOSFET of Microsemi. This device is the 1<sup>st</sup> 1200V product from



**Package**



**SiC die**

### **Device features**

- Max. operating voltage: 1200V, rated DC Drain current  $I_D=80A$  at  $T_j=25^\circ C$
- ON-resistance,  $R_{ON} \times A= 1,076m\Omega \times mm^2$
- Double metal layer at Source PADs and Gate PADs is used in order to maximize the package density

The report has two individually purchasable sections: an 73-page Structure Analysis, and a 23-page Process Analysis section. The Structure Analysis section reveals the physical construction of the device, including EDX materials analysis, and many other fine details. The Process Analysis section includes manufacturing process flow, the estimated number of photomasking steps, and the impurity concentration of the epitaxial layer.

Note: The listed report price may not be accurate as it decreases over time.

Please contact us for current report pricing : [info@ltecusa.com](mailto:info@ltecusa.com)

17G-0019-1

# Table of Contents

## Structure Analysis Report

	<b>Page</b>
<b>Device summary</b>	
Table 1, Executive Summary	3
<b>Analysis results</b>	4
Table 2. Package structure overview	5
Table 3. Device structure: SiC MOSFET	6
Table 4. Device structure: Layer materials and thicknesses	7
<b>Package overview</b>	
X-ray	8
<b>SiC MOSFT</b>	
SiC MOSFET Analysis	10
Plain view (Optical Microscope)	11
Plain view, Scanning Electron Microscope (SEM)	21
Cross-sectional structure analysis (SEM)	29
<b>Package structure analysis</b>	
Detail structure	39
EDX material analysis	51

17G-0019-1

