## **Humanoid Robots**

Phase Change Material

Control Unit



Thermal Gel/Grease Compliable for Vertical/Vibration Applications

Control Unit/Power Unit/ Charging Unit



Thermal Conductive Epoxy Potting

Joint Motor



Thermal Conductive Potting

**Battery Pack** 



High Power Density

Concentrated Heat Source & Limited Dissipation Efficiency

**2** Dynamic Thermal Load

Dynamic Scene Adaptation & Long-term Stability



**4** Structural Constraints

Limited Space & Minimized Weight Increase

Heat Accumulation

Long-time Running & Thermal Accumulation Effect

