

# Core Selector Charts

The core selector charts are a quick guide to finding the optimum permeability and smallest core size for DC bias applications.

These charts are based on a permeability reduction (and therefore inductance) of not more than 50% with DC bias; typical winding factors of 40% for toroids, 60% for E cores and U cores, and 75% for EQ cores (helical coil assumed); and an AC current that is small relative to the DC current. These charts are based on the nominal core inductance and a current density 400-1000 A/cm<sup>2</sup>:

|                                             |                        |
|---------------------------------------------|------------------------|
| Kool M $\mu$                                | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ MAX                            | 600 A/cm <sup>2</sup>  |
| Kool M $\mu$ Hf                             | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ Ultra                          | 400 A/cm <sup>2</sup>  |
| XFlux                                       | 600 A/cm <sup>2</sup>  |
| XFlux Ultra                                 | 600 A/cm <sup>2</sup>  |
| High Flux                                   | 600 A/cm <sup>2</sup>  |
| Edge                                        | 600 A/cm <sup>2</sup>  |
| MPP                                         | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ E/U Cores                      | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ MAX E/U Cores                  | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ MAX High Performance E/U Cores | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ Hf E/U Cores                   | 400 A/cm <sup>2</sup>  |
| Kool M $\mu$ EQ/LP Cores                    | 800 A/cm <sup>2</sup>  |
| Kool M $\mu$ MAX EQ/LP Cores                | 800 A/cm <sup>2</sup>  |
| XFlux EQ/LP Cores                           | 1000 A/cm <sup>2</sup> |
| High Flux EQ/LP Cores                       | 1000 A/cm <sup>2</sup> |

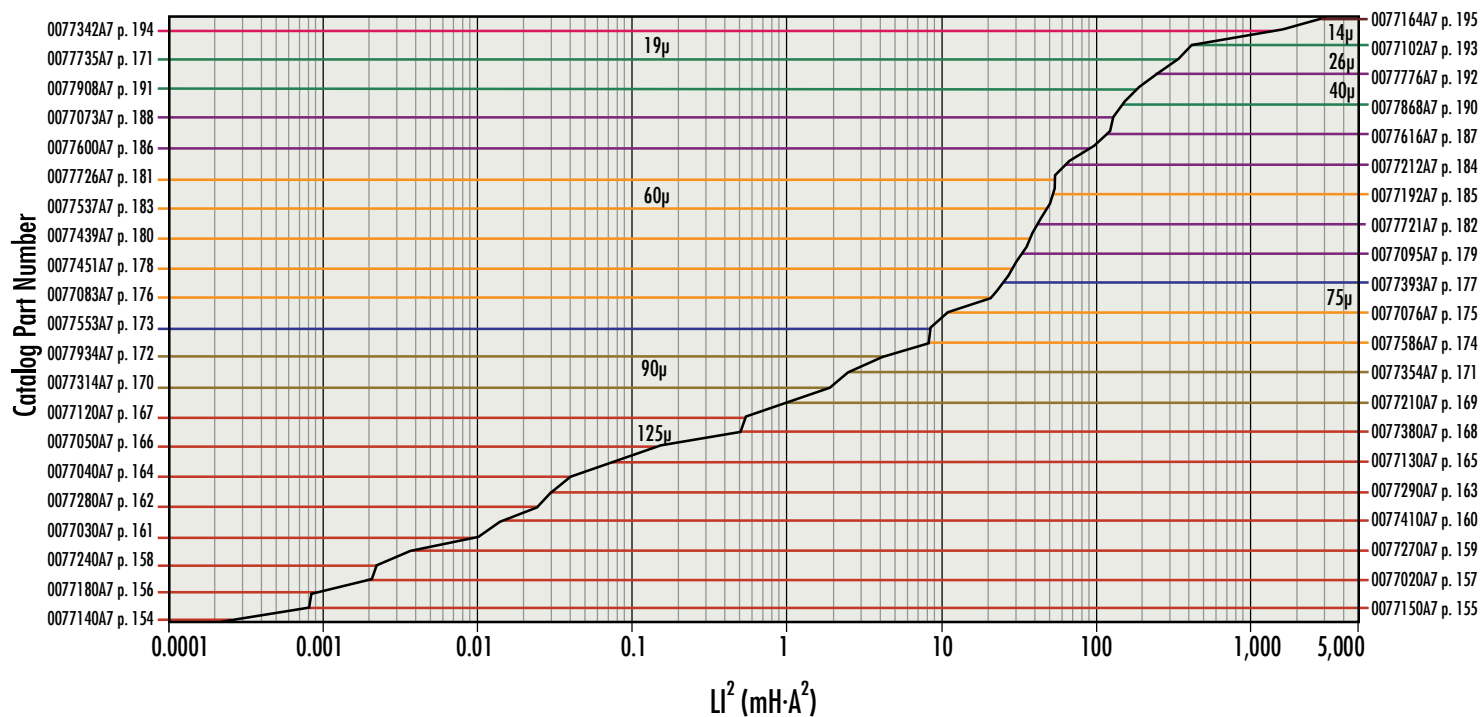
If a core is being selected for use with a large AC current relative to any DC current, such as a flyback inductor or buck/boost inductor, frequently a larger core will be needed to limit the core losses due to AC flux. In other words, the design becomes loss-limited rather than bias-limited.

For additional power handling capability, stacking of cores will yield a proportional increase in power handling. For example, double stacking of the C055908A2 core will result in doubled power handling capability to about 400 mH·A<sup>2</sup>.

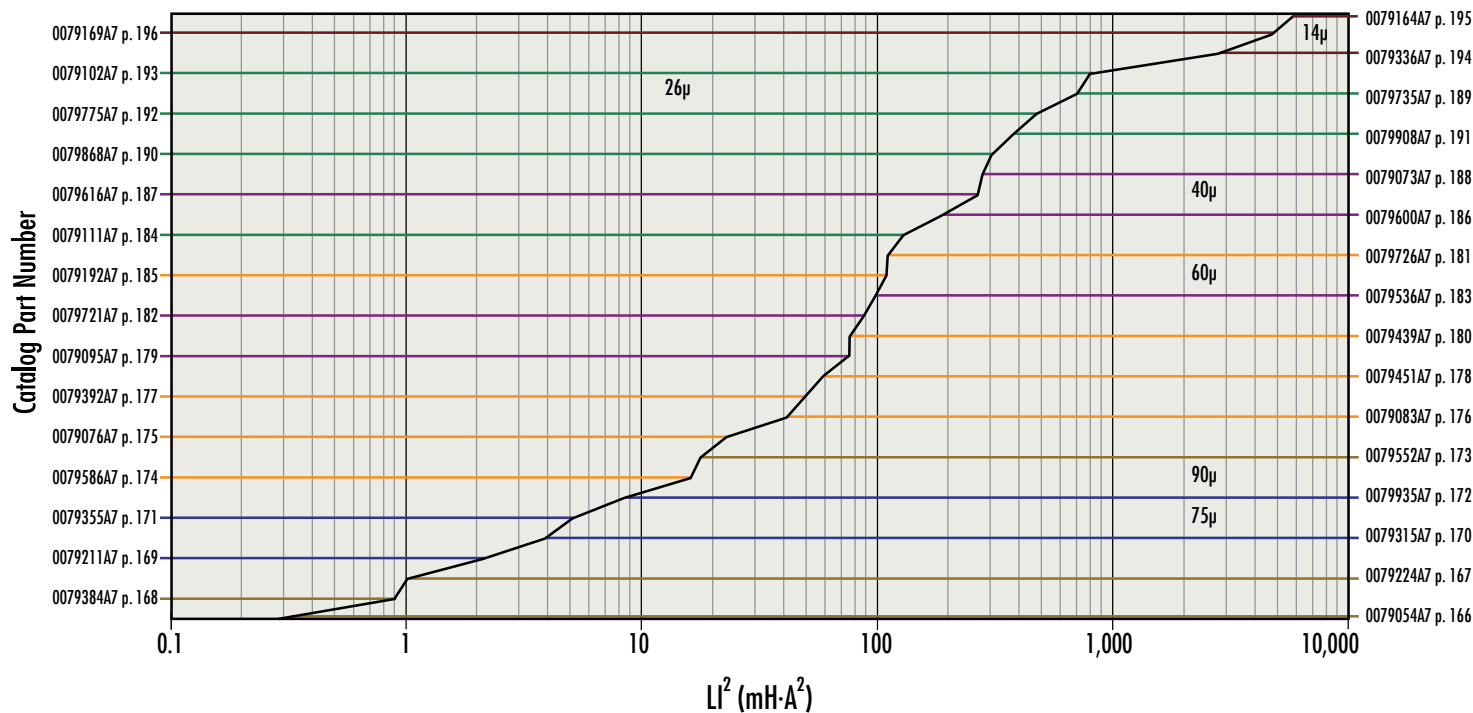
Cores with increased heights are easily ordered. Contact Magnetics for more information.

# Core Selector Charts

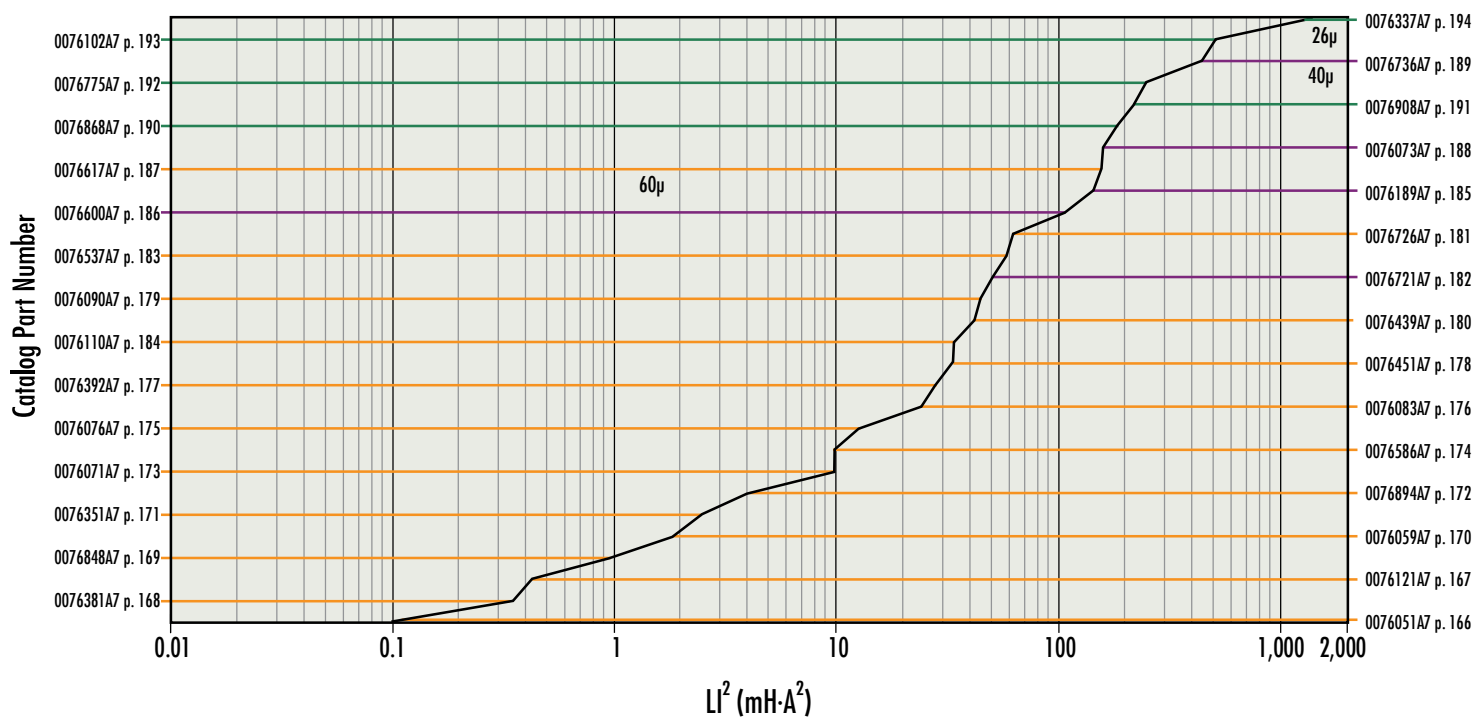
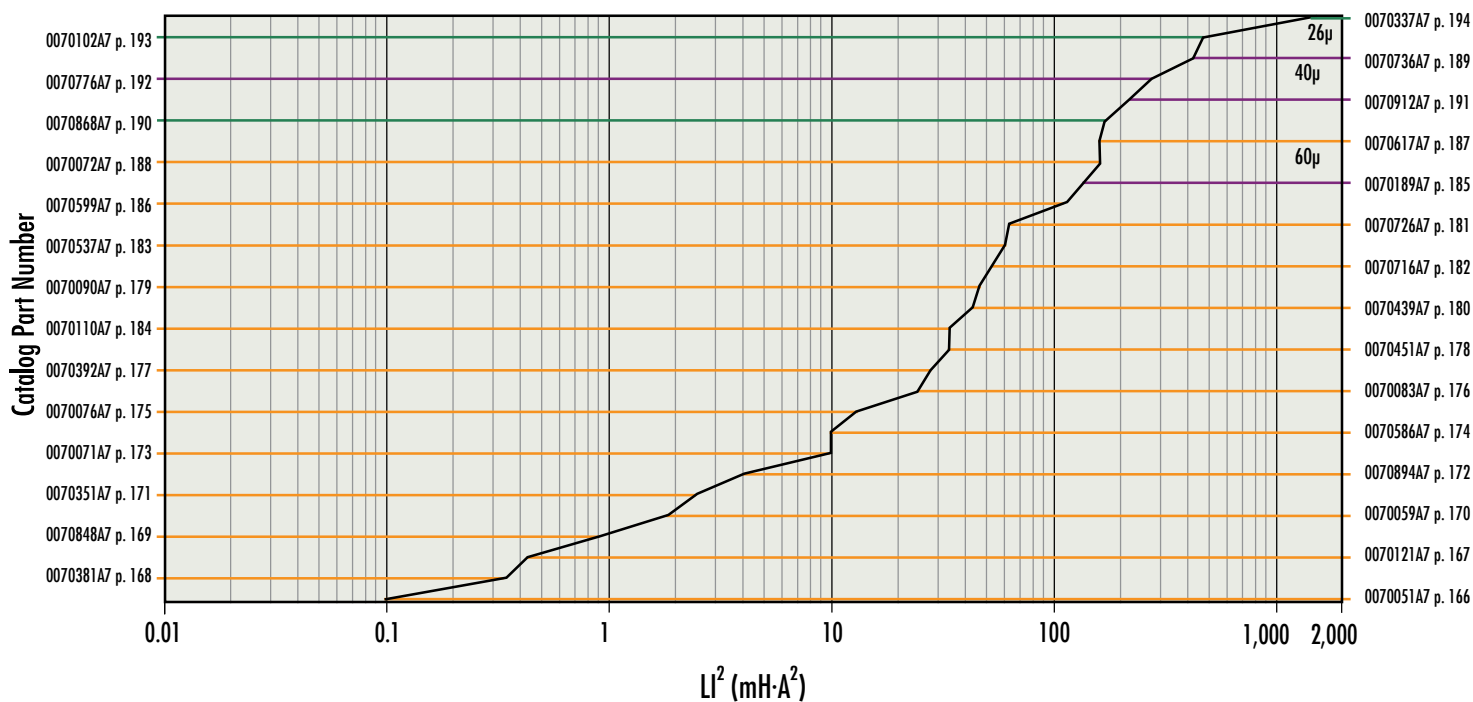
## Kool M $\mu$ <sup>®</sup> Toroids



## Kool M $\mu$ <sup>®</sup> MAX Toroids

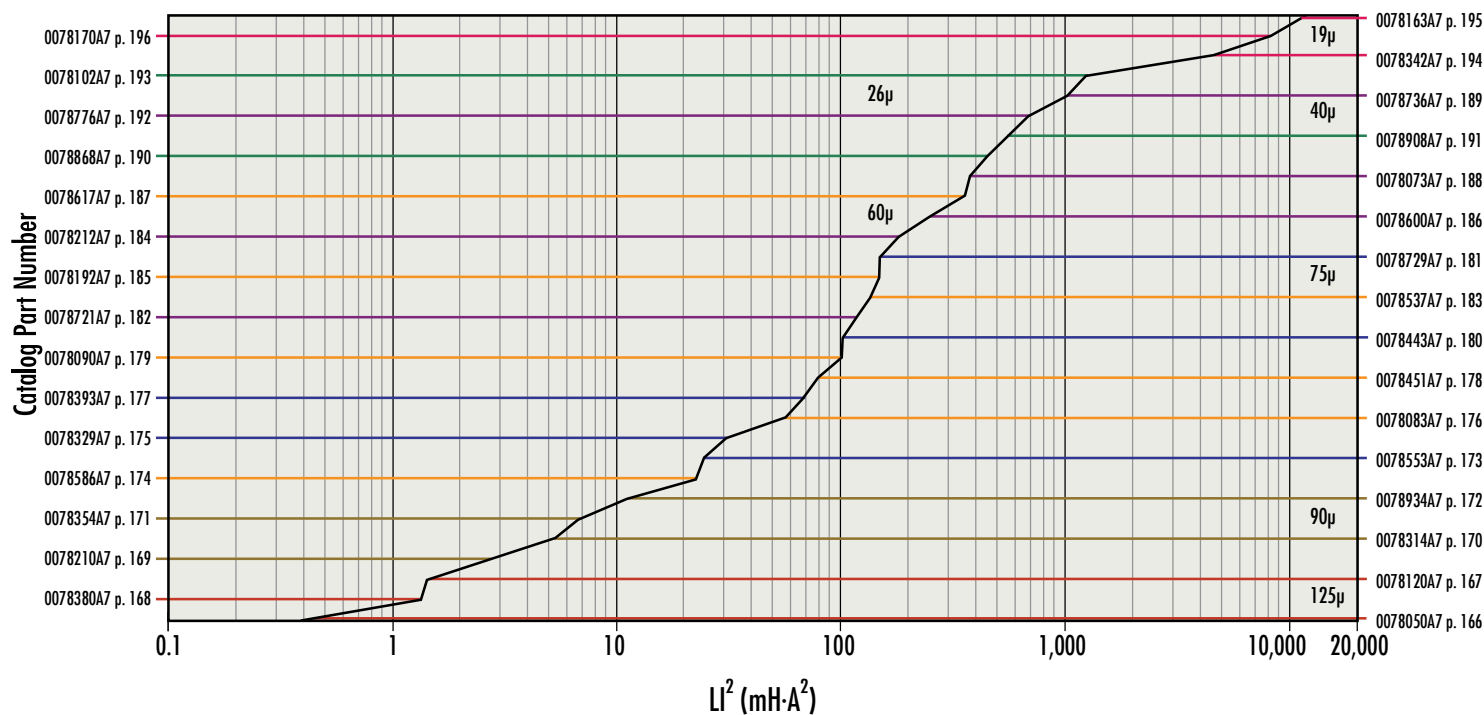


## Core Selector Charts

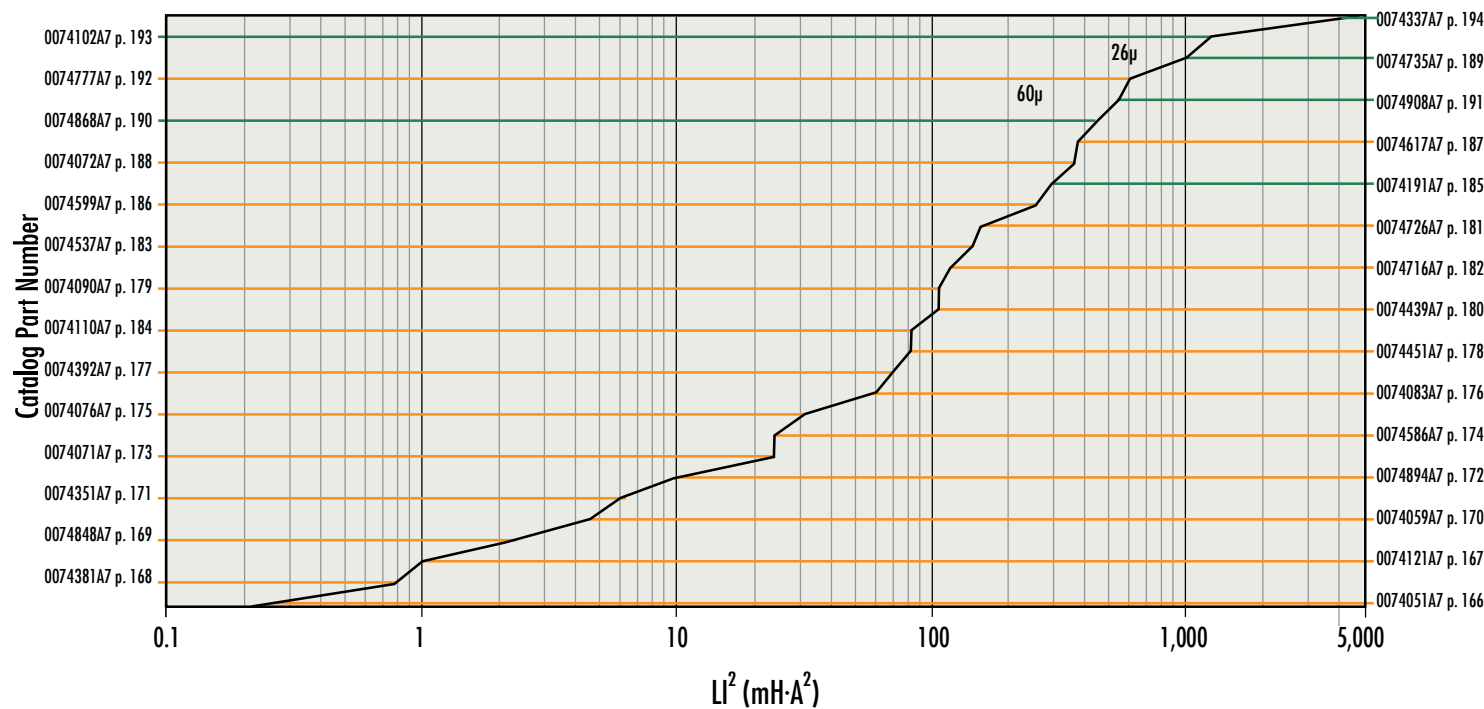
Kool M $\mu$ <sup>®</sup> Hf ToroidsKool M $\mu$ <sup>®</sup> Ultra Toroids

# Core Selector Charts

## XFlux® Toroids

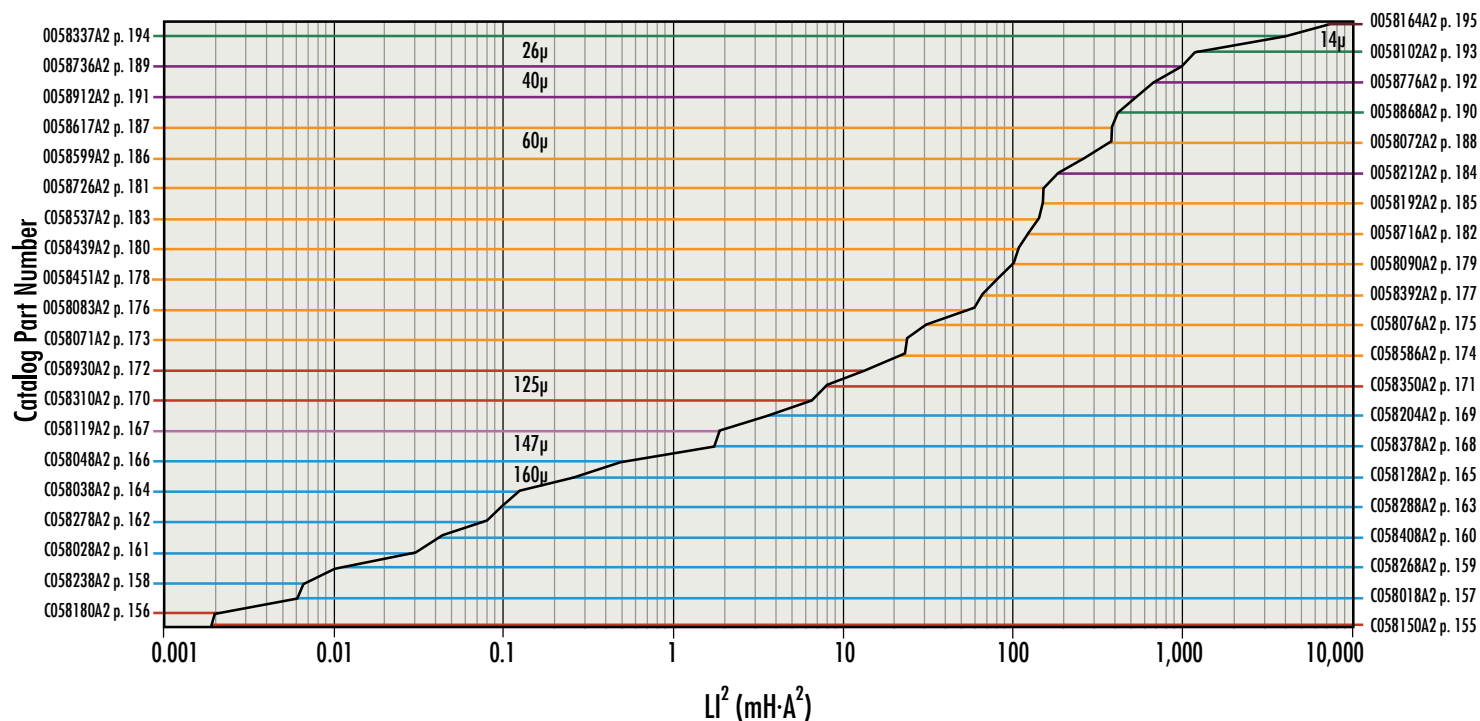


## XFlux® Ultra Toroids

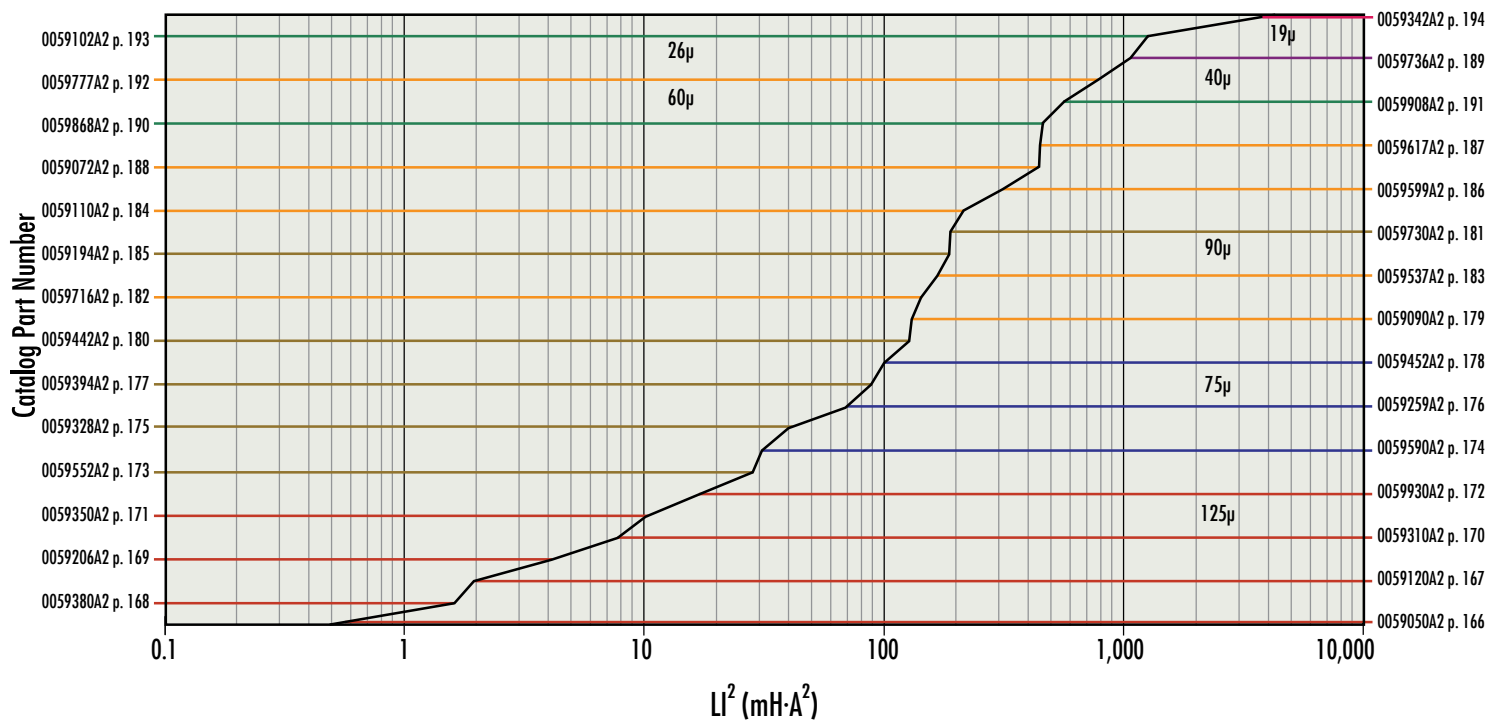


# Core Selector Charts

## High Flux Toroids

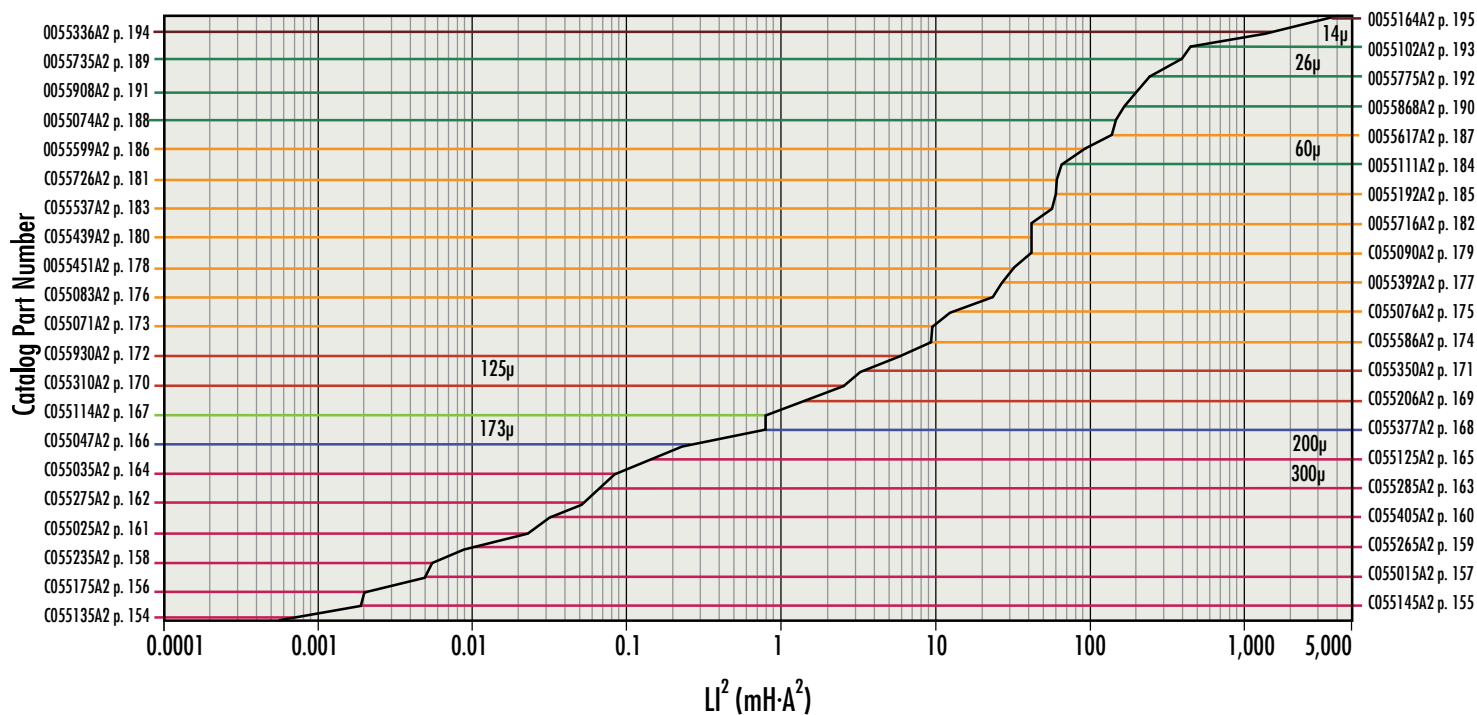


## Edge® Toroids

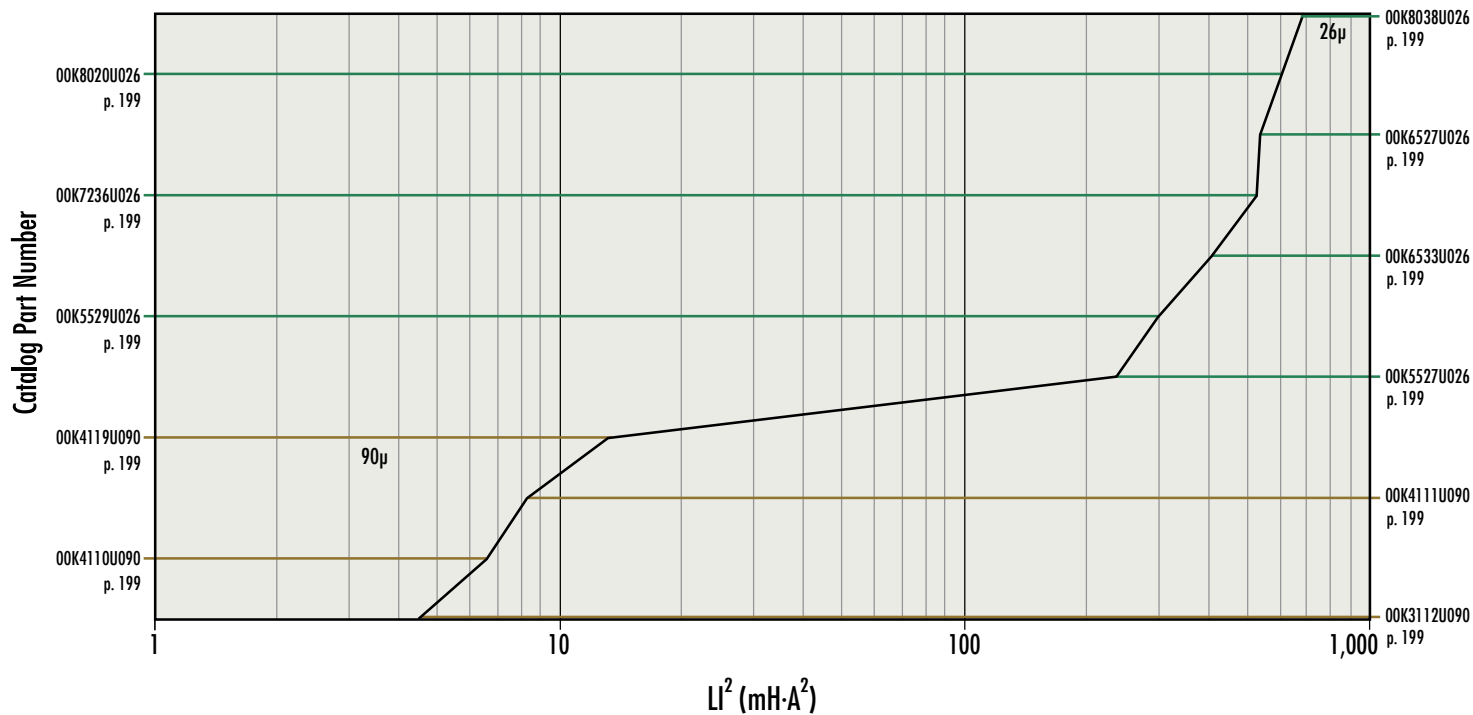


# Core Selector Charts

## MPP Toroids

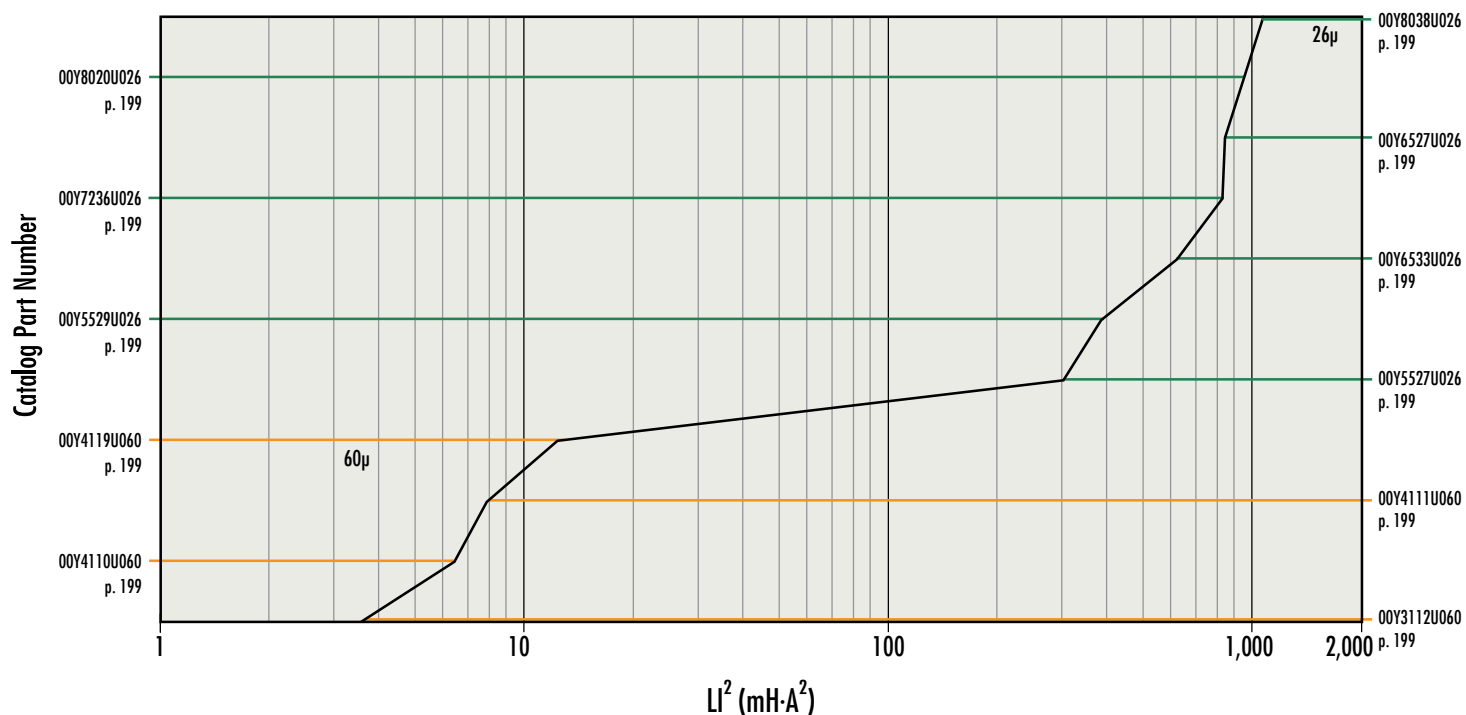


## Kool M $\mu$ ® U Cores

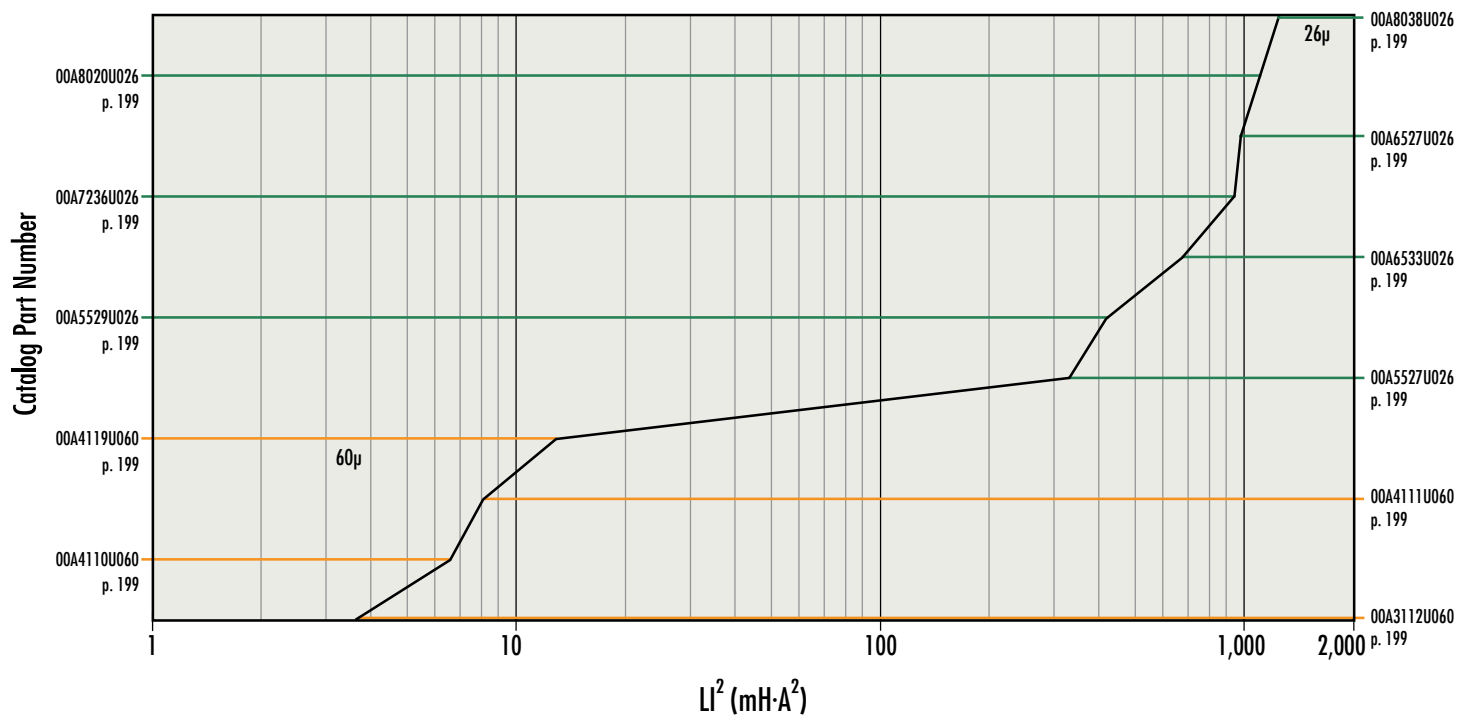


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> MAX U Cores

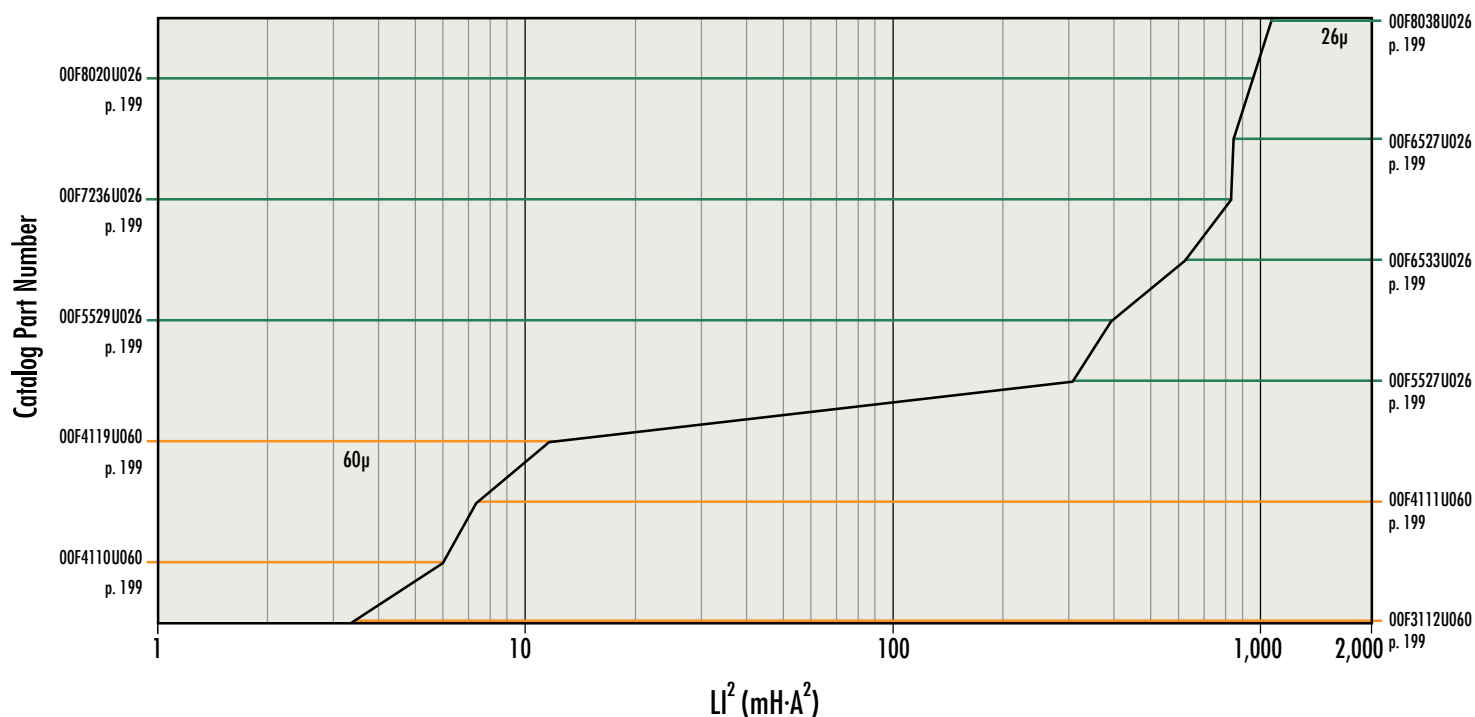


## Kool M $\mu$ <sup>®</sup> MAX High Performance U Cores

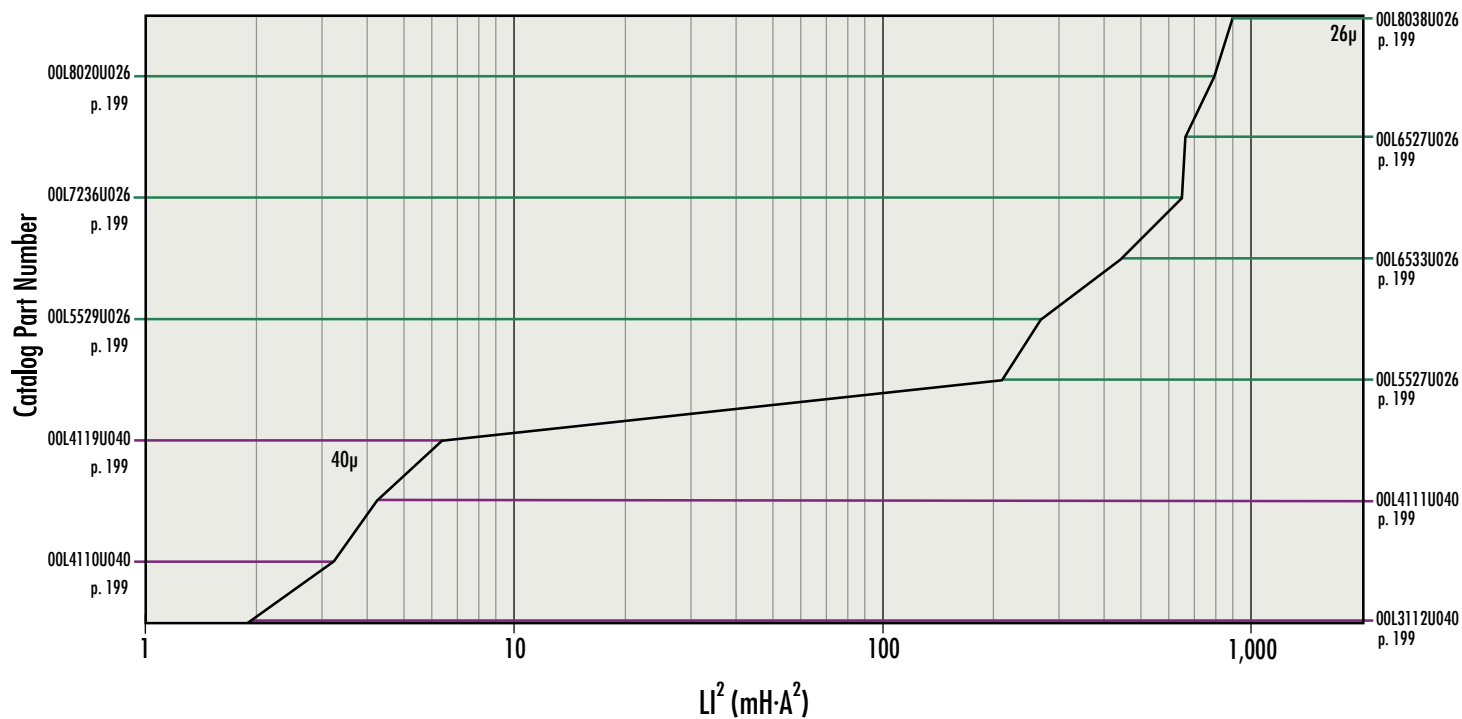


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> Hf U Cores

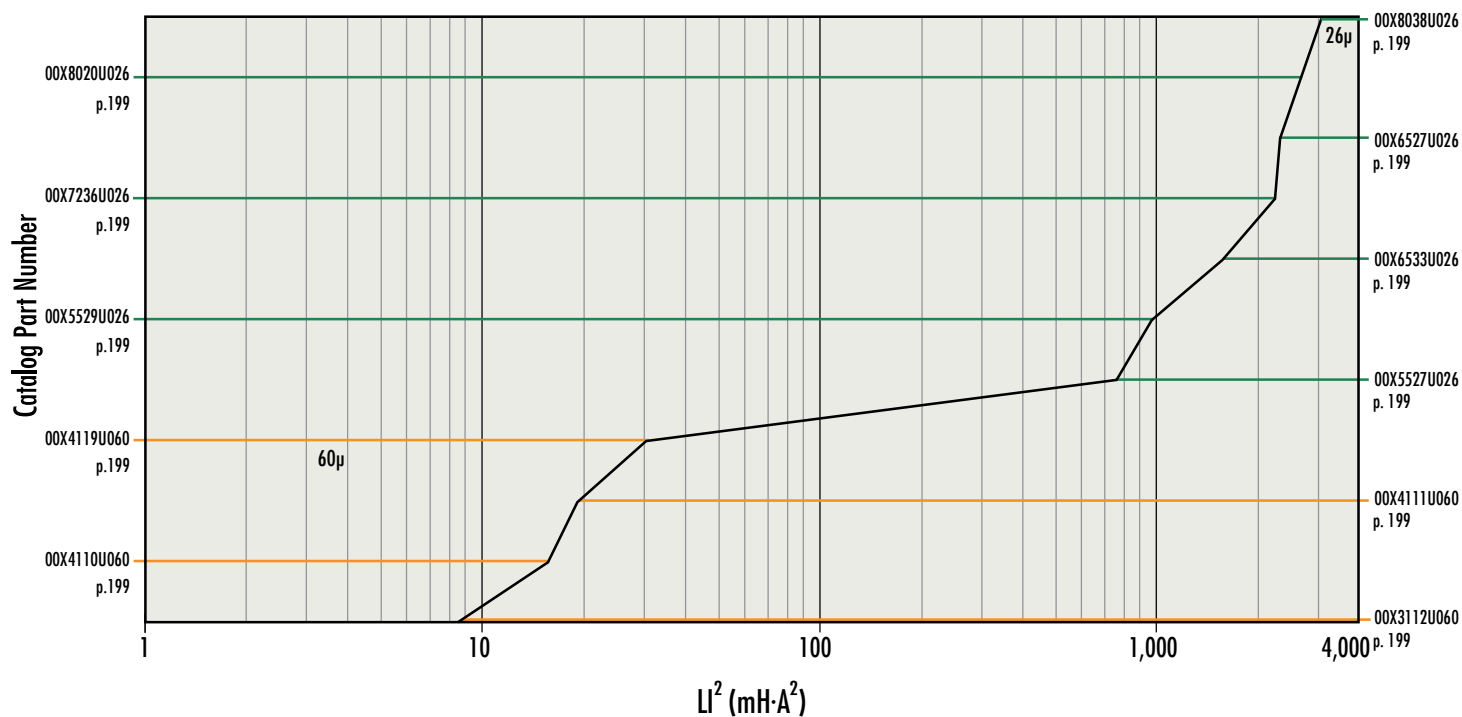


## Kool M $\mu$ <sup>®</sup> Ultra U Cores

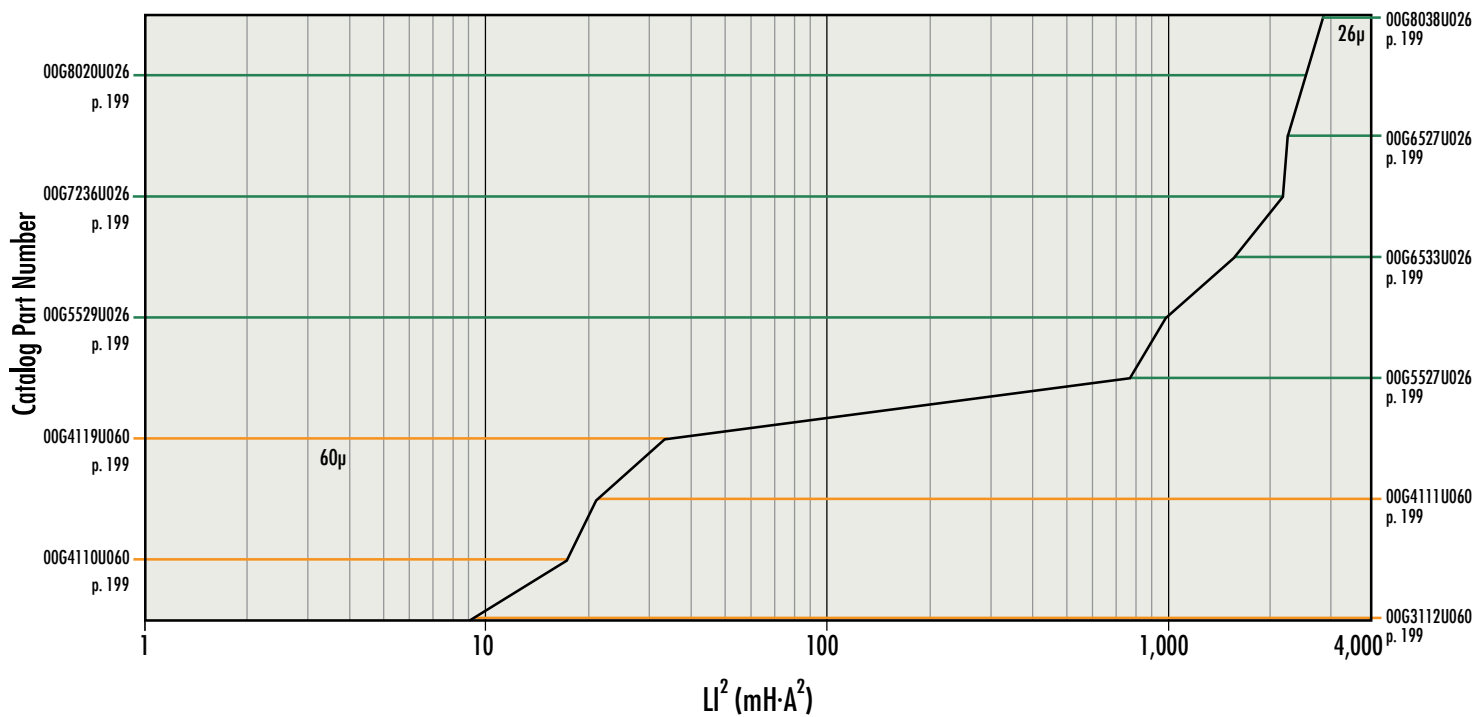


## Core Selector Charts

XFlux® U Cores

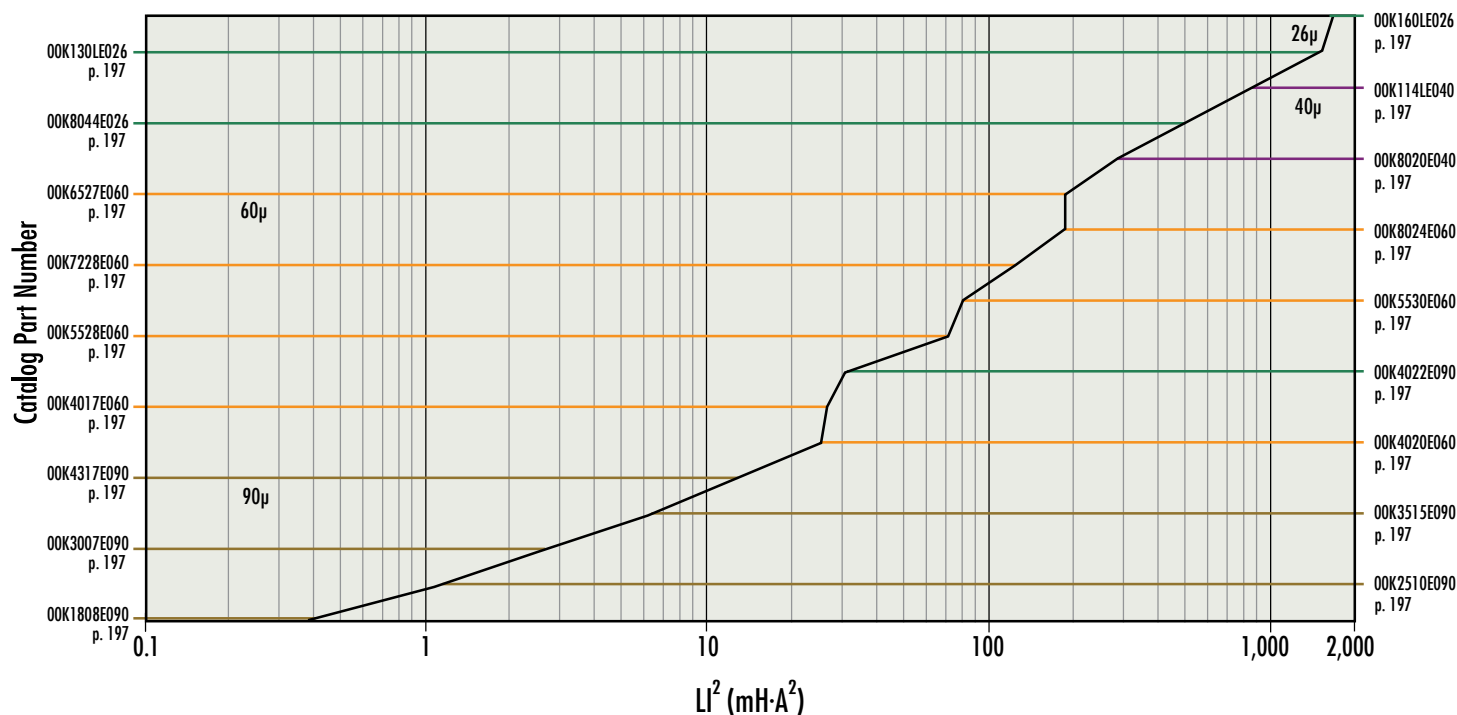


Edge® U Cores

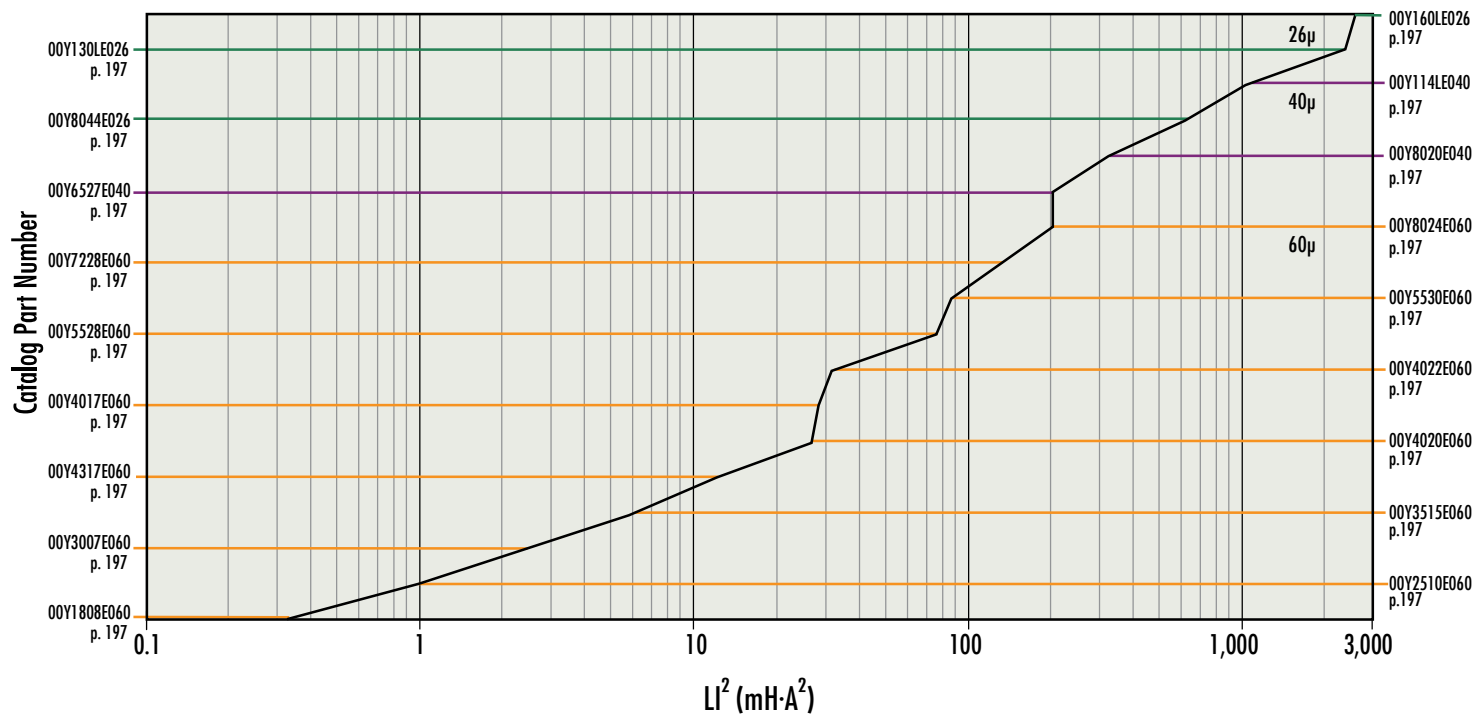


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> E Cores

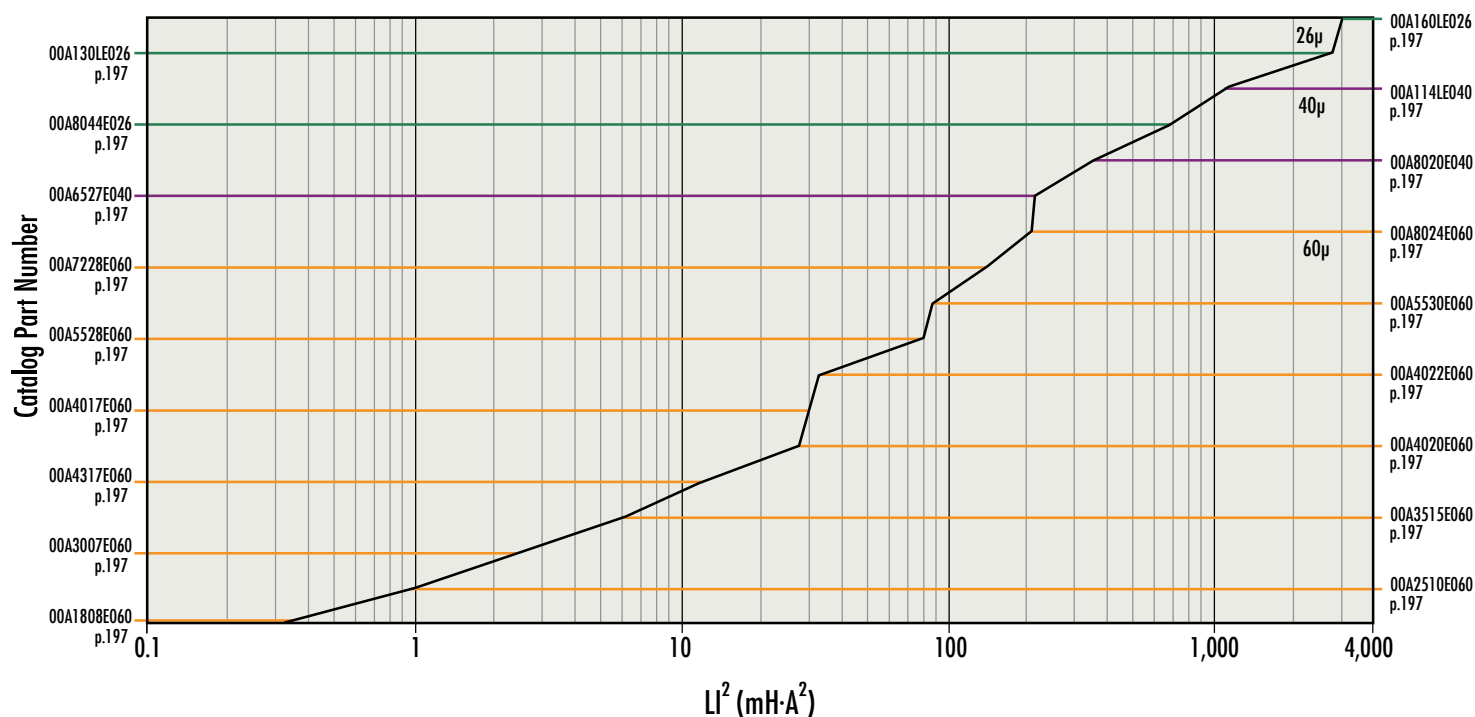


## Kool M $\mu$ <sup>®</sup> MAX E Cores

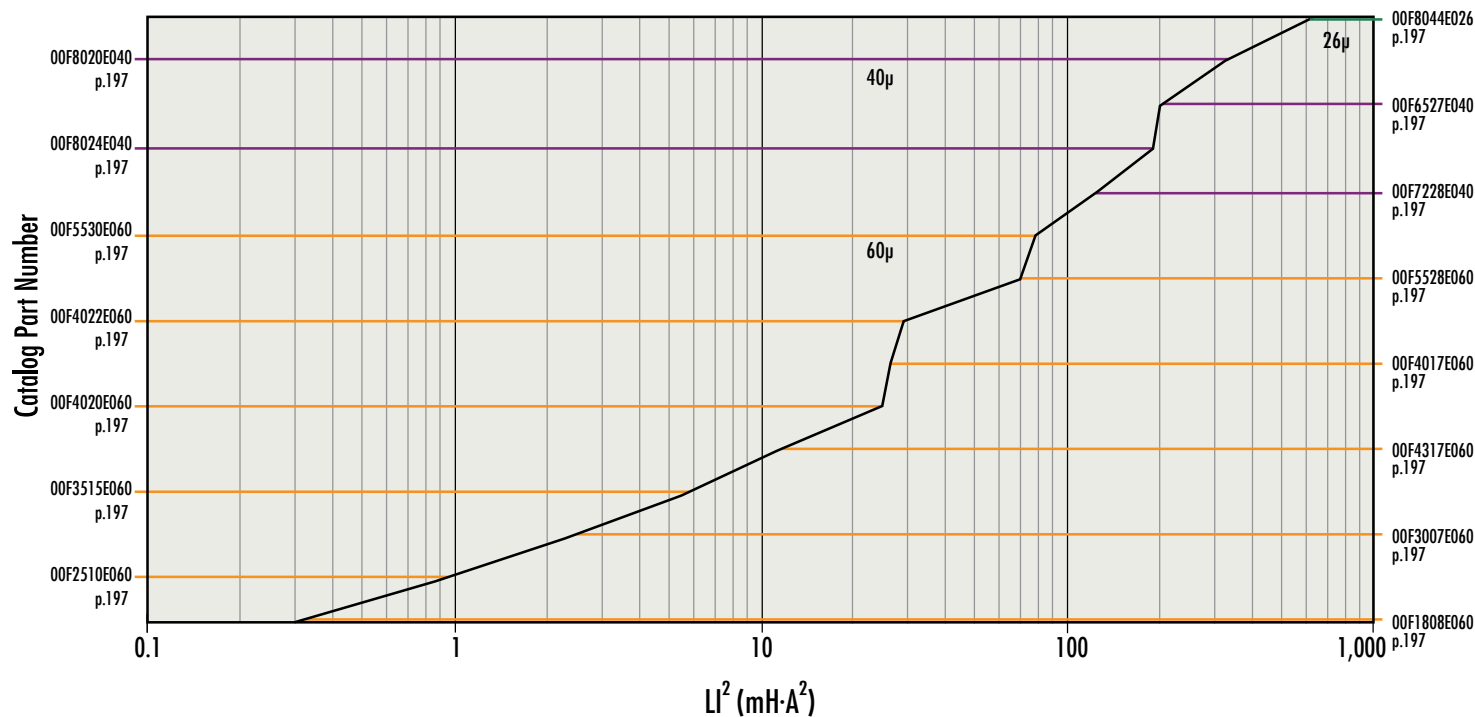


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> MAX High Performance E Cores

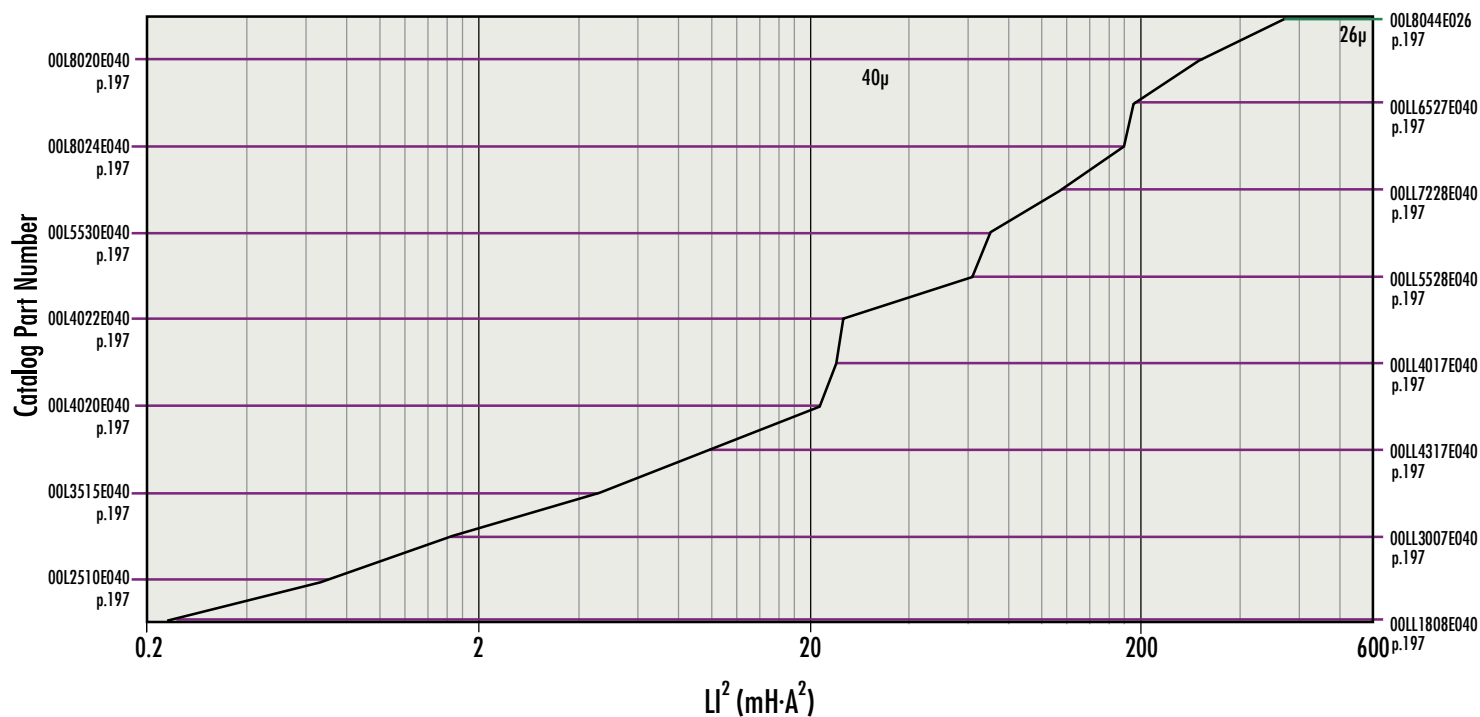


## Kool M $\mu$ <sup>®</sup> Hf E Cores

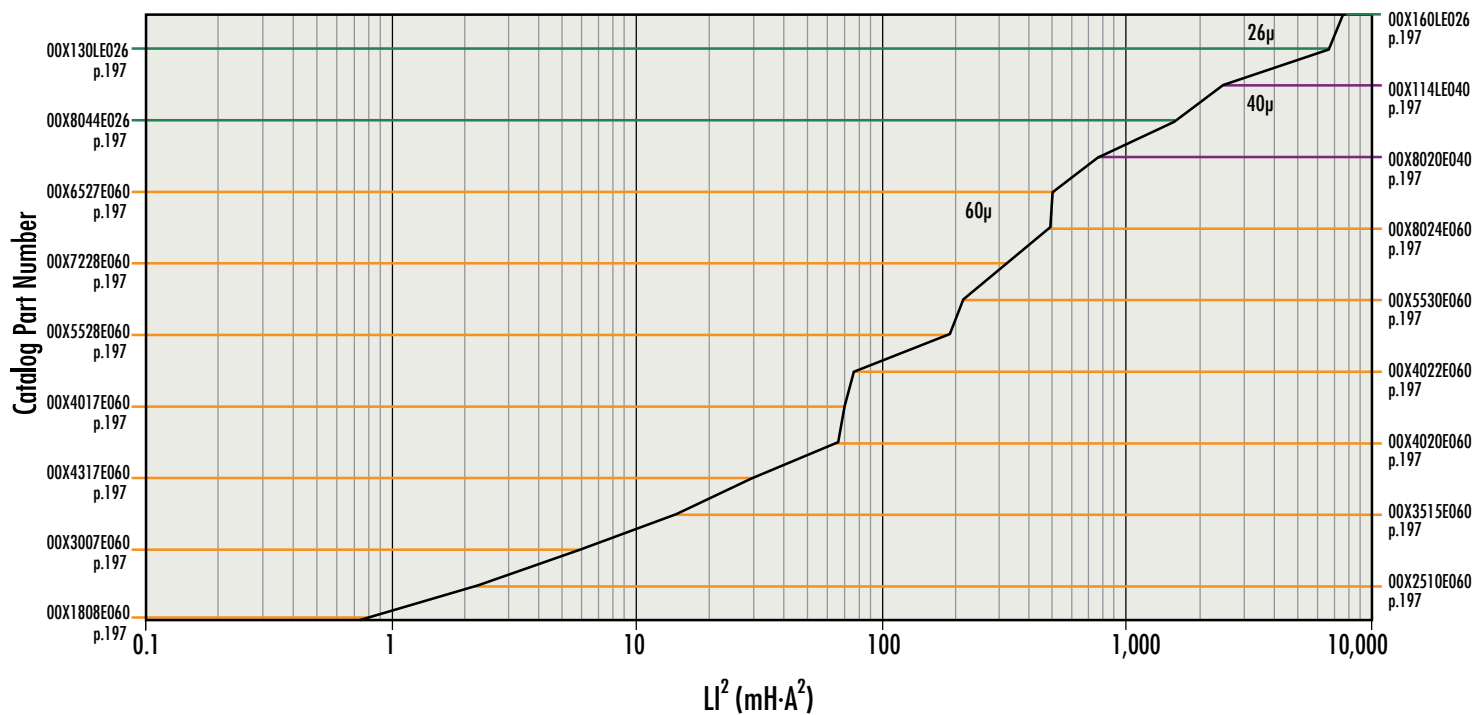


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> Ultra E Cores

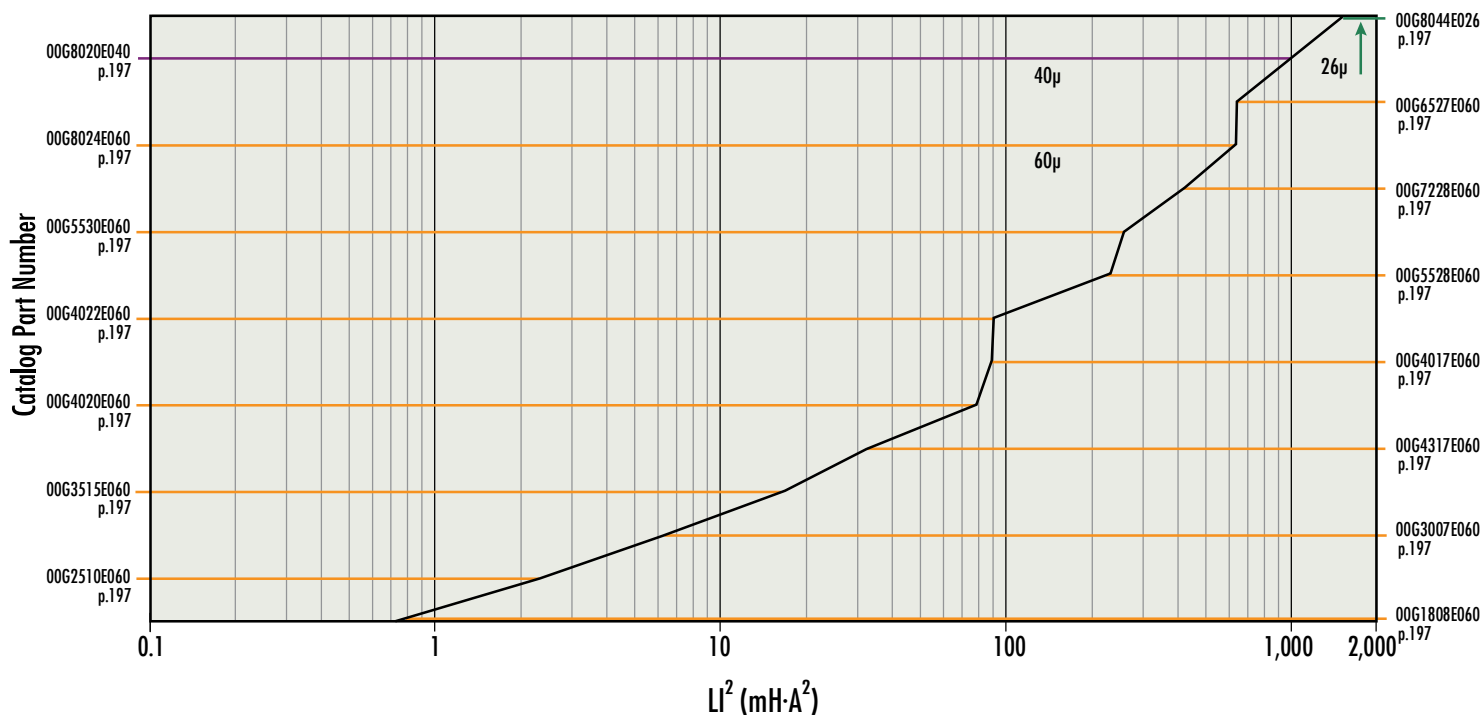


## XFlux<sup>®</sup> E Cores

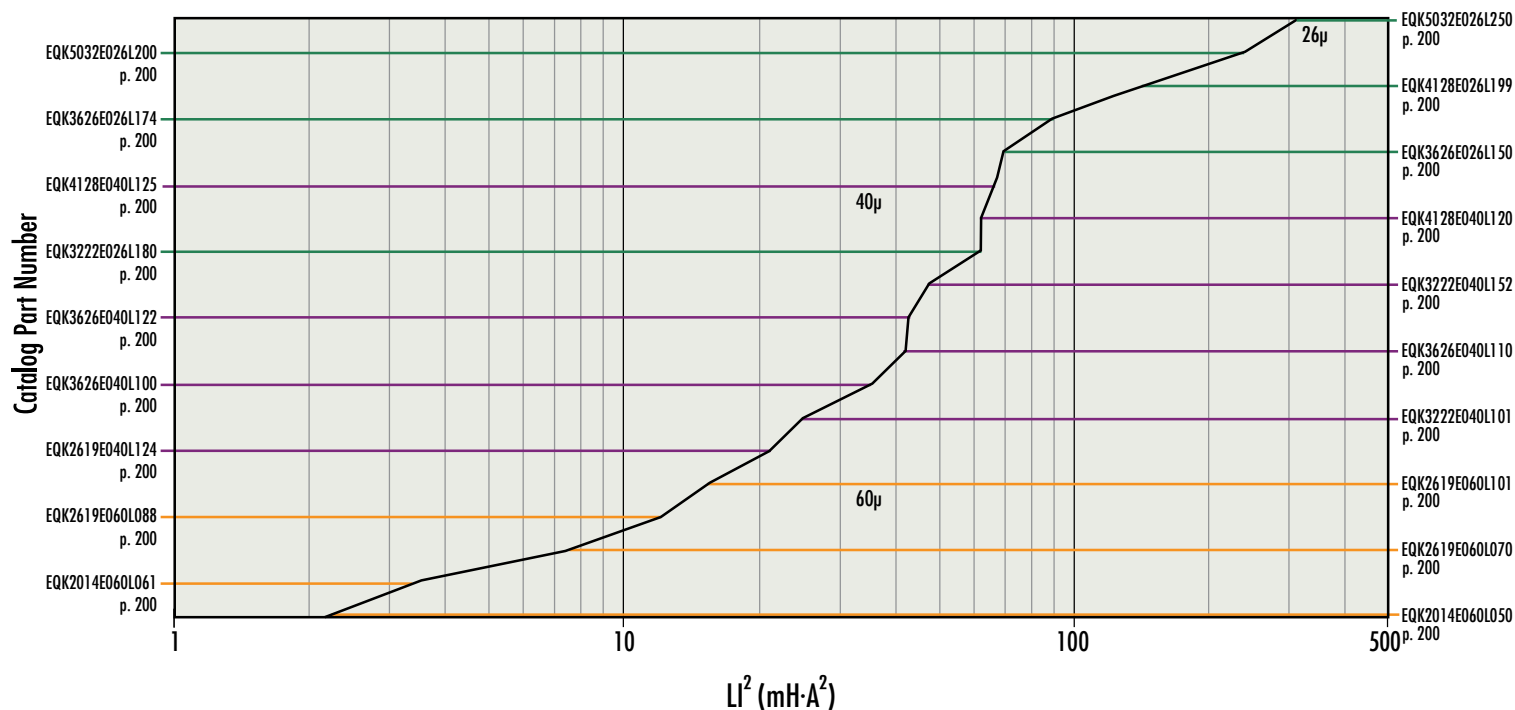


# Core Selector Charts

## Edge® E Cores

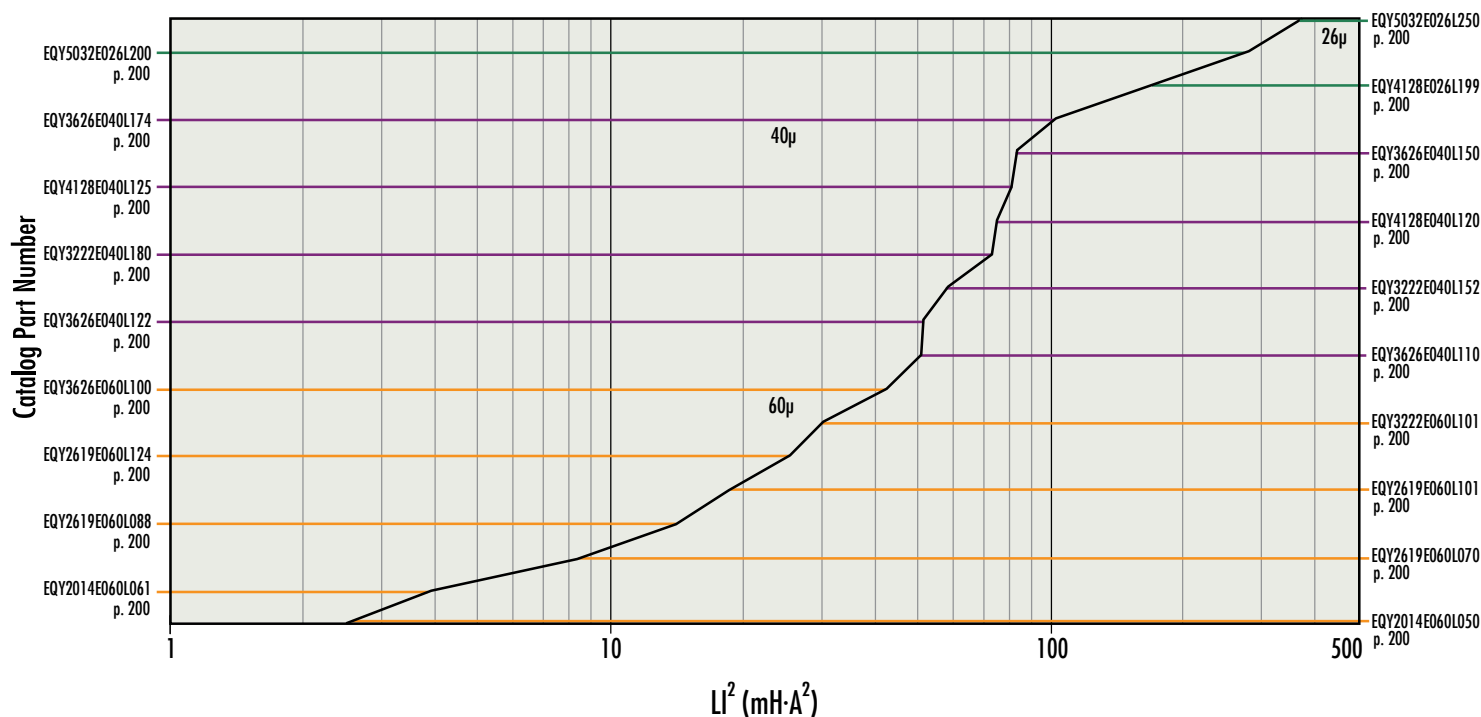


## Kool M $\mu$ ® EQ Cores

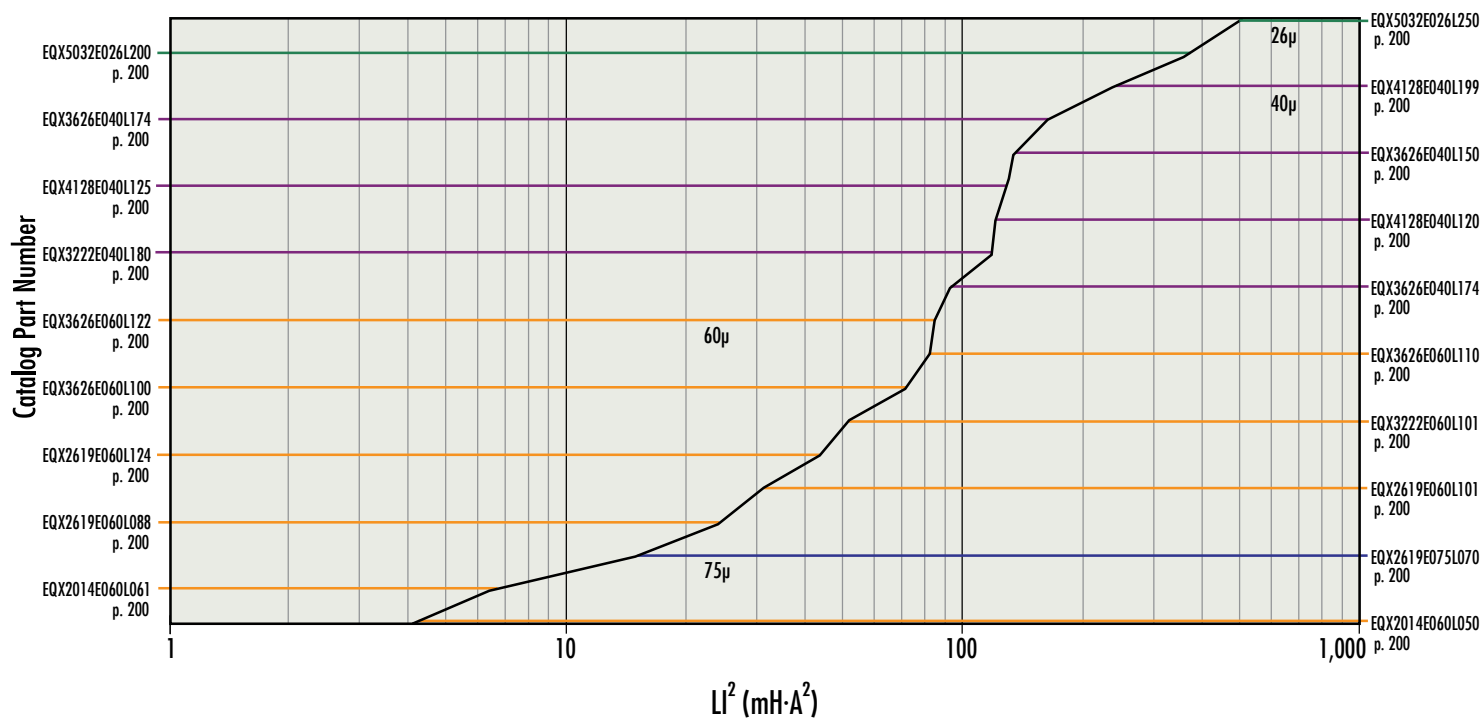


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> MAX EQ Cores

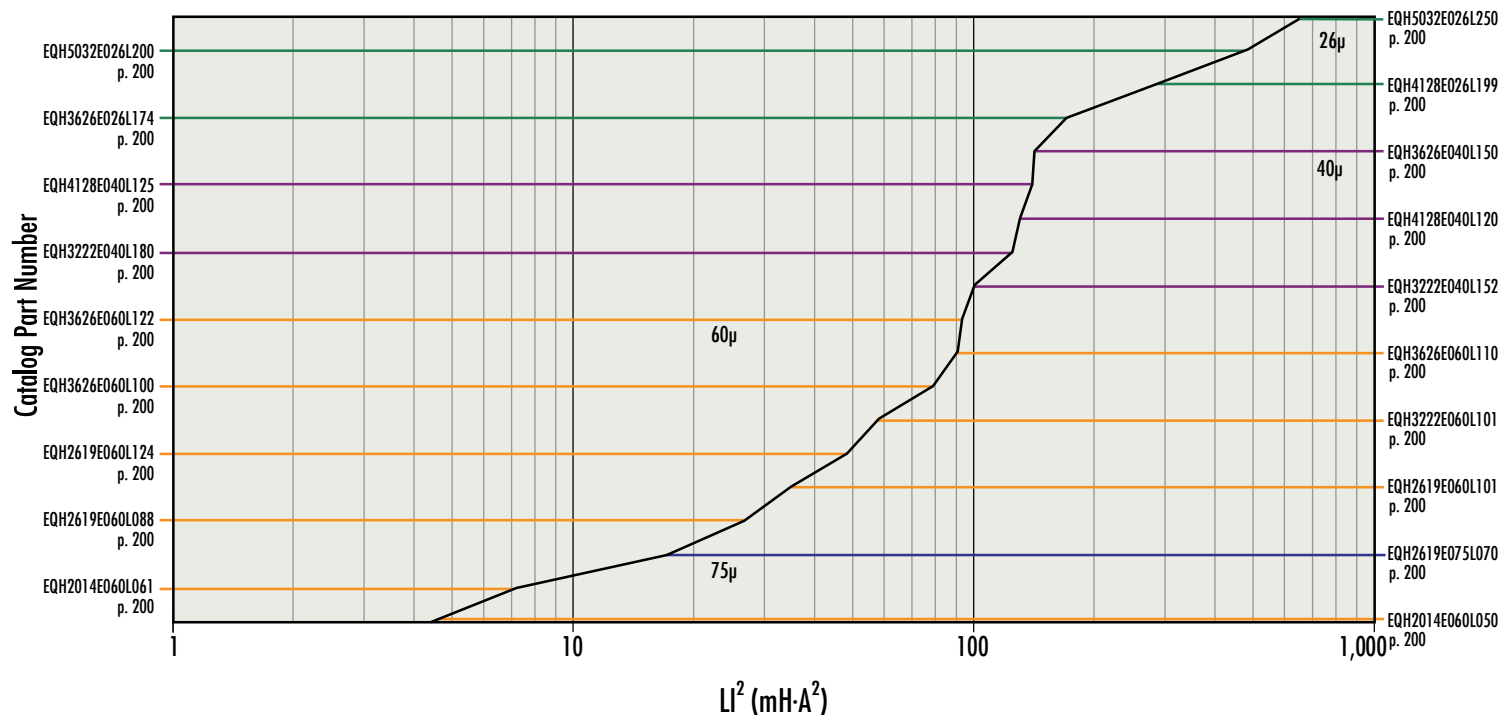


## XFlux<sup>®</sup> EQ Cores

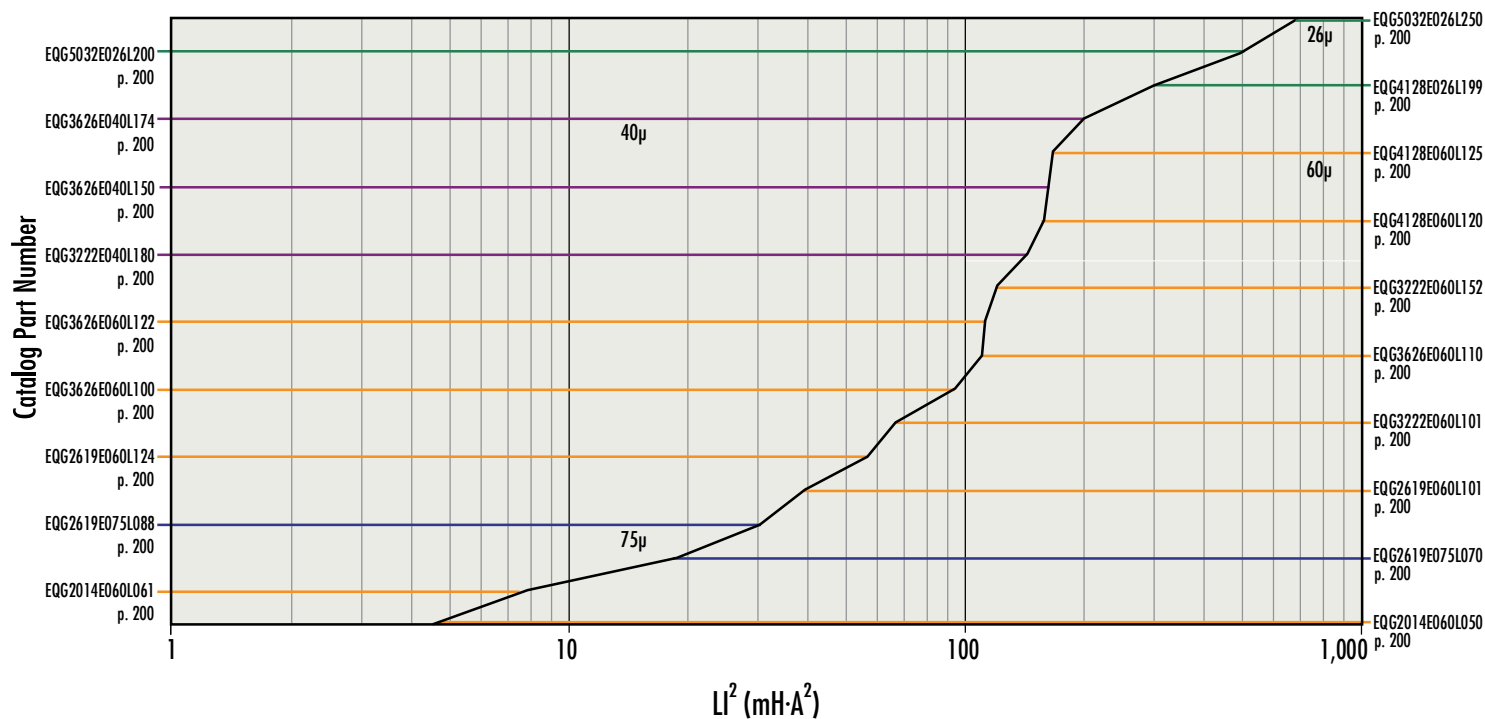


# Core Selector Charts

## High Flux EQ Cores

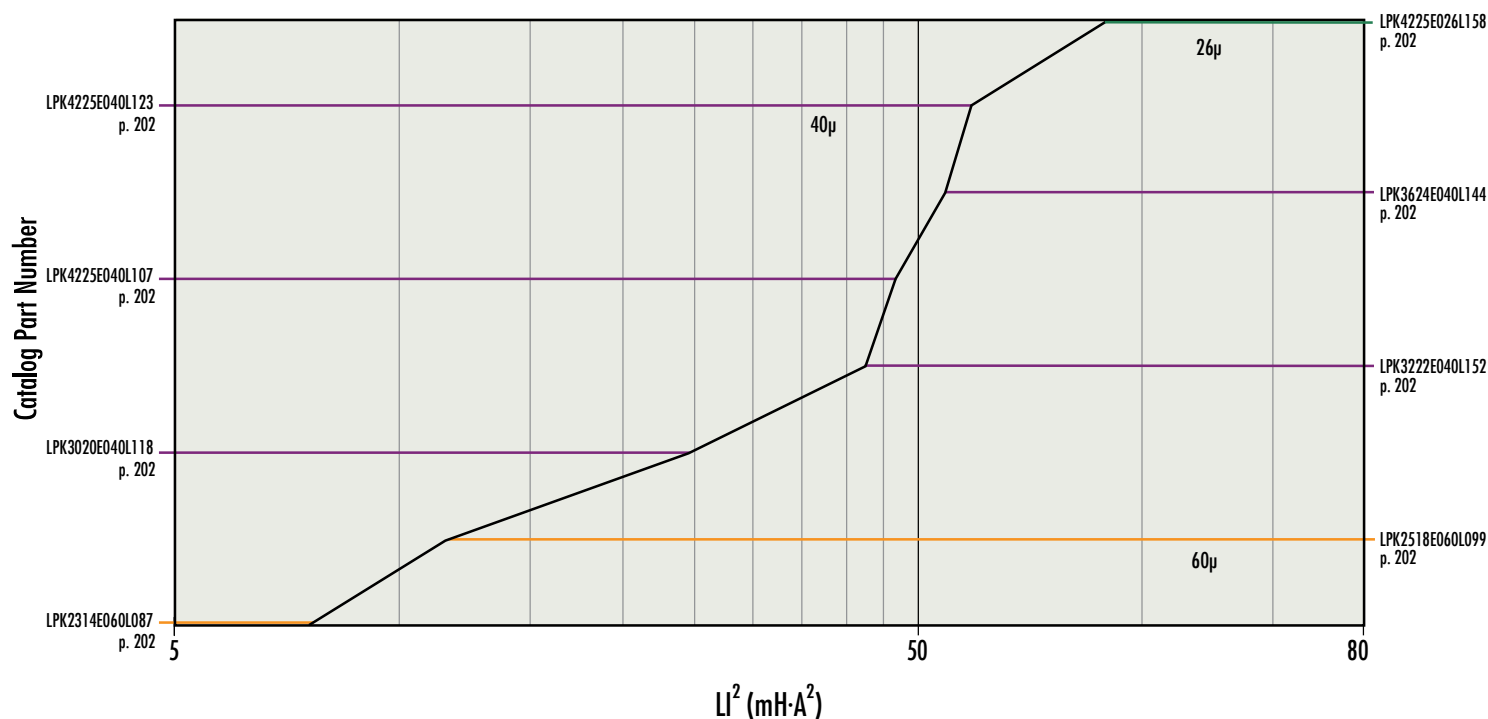


## Edge® EQ Cores

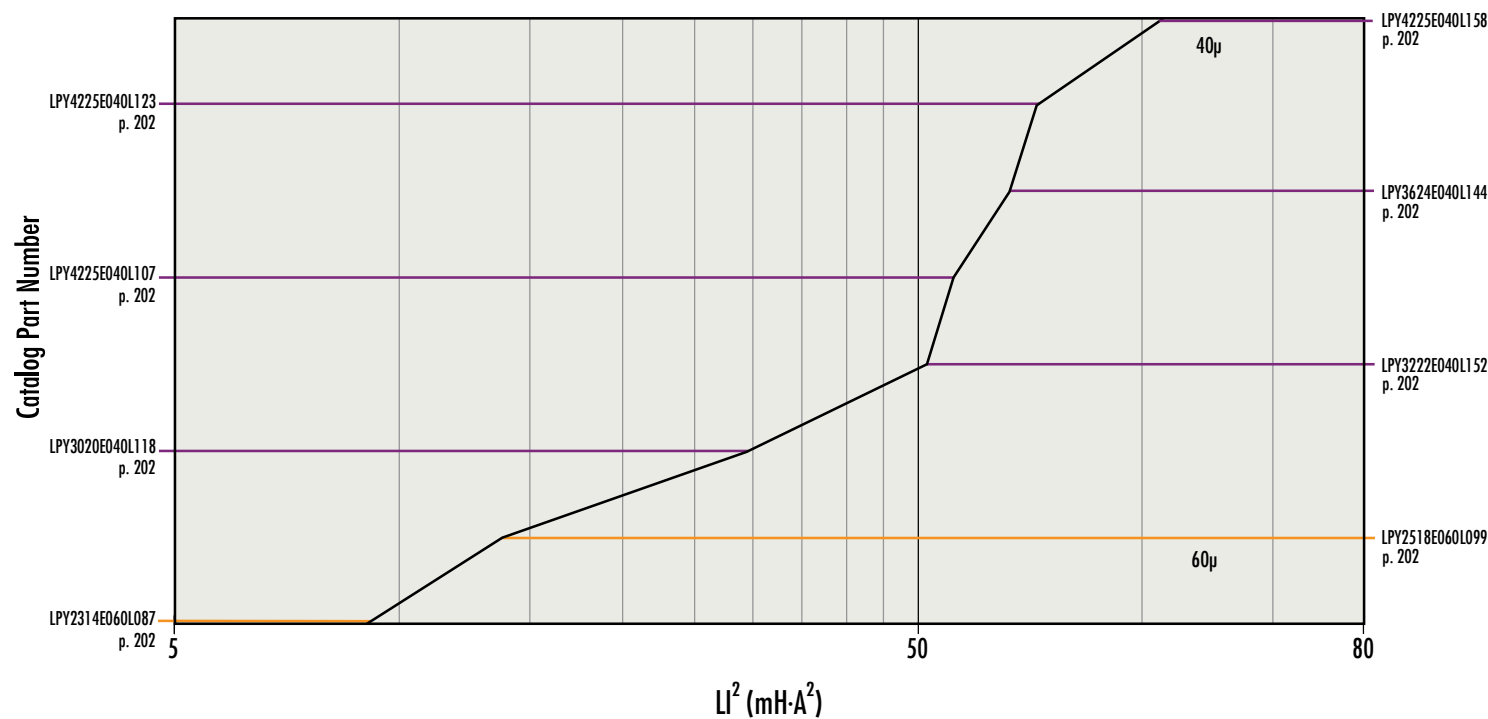


# Core Selector Charts

## Kool M $\mu$ <sup>®</sup> LP Cores

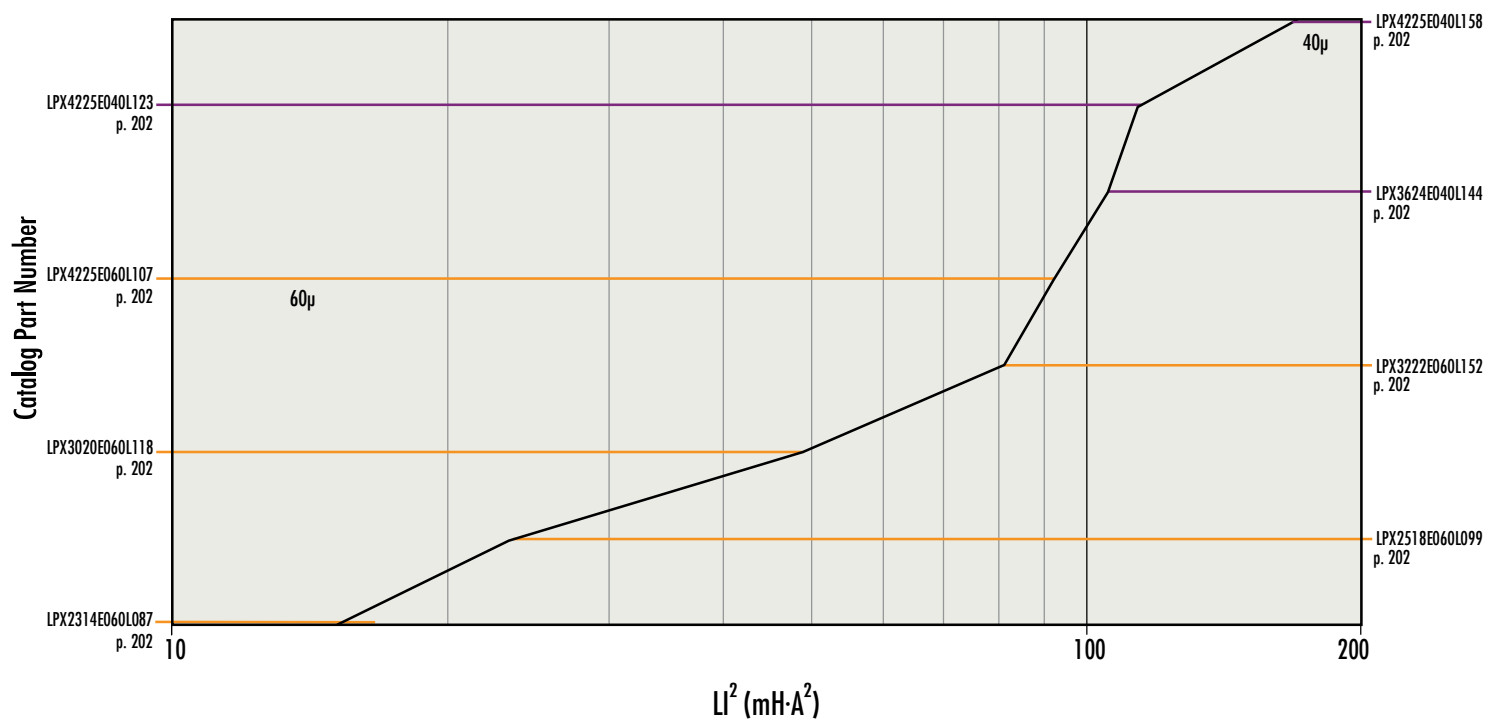


## Kool M $\mu$ <sup>®</sup> MAX LP Cores

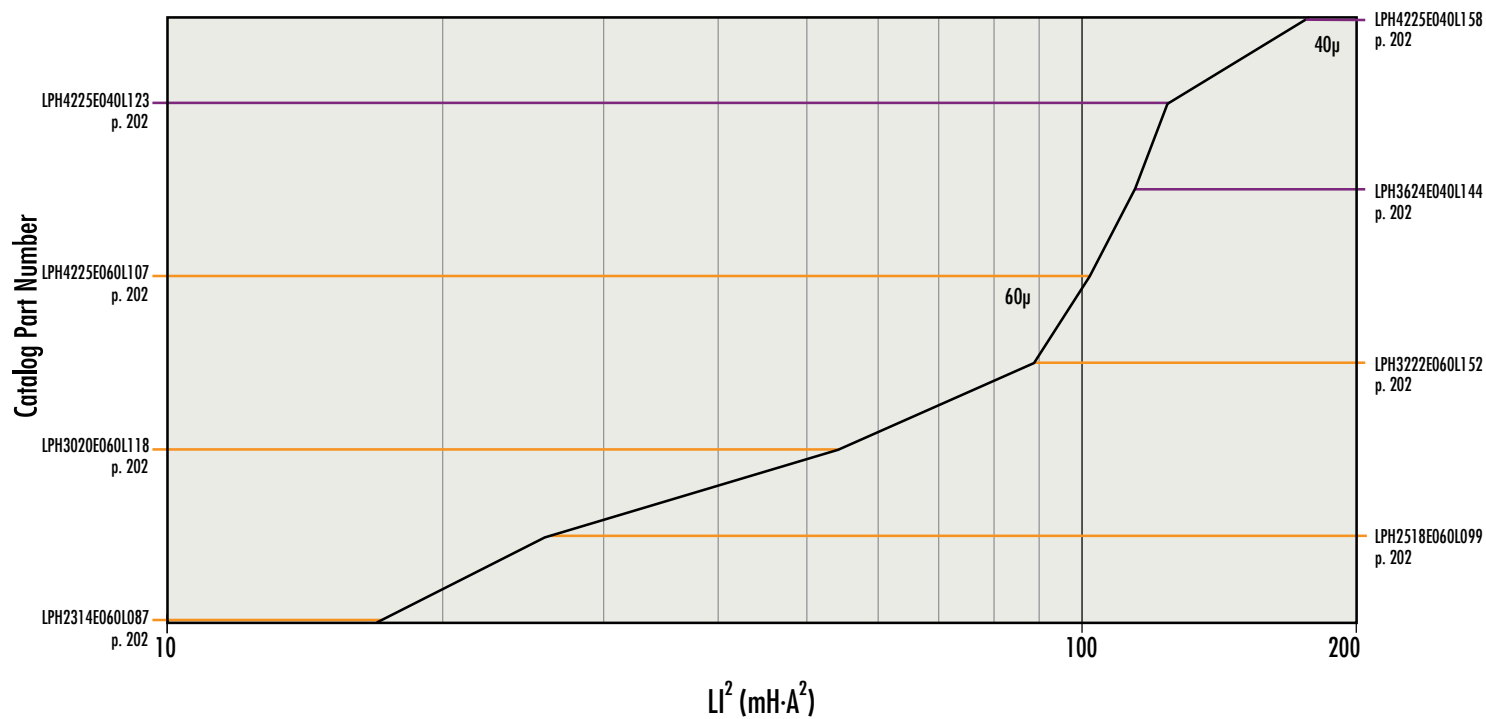


## Core Selector Charts

## XFlux® LP Cores



## High Flux® LP Cores



# Core Selector Charts

Edge® LP Cores

