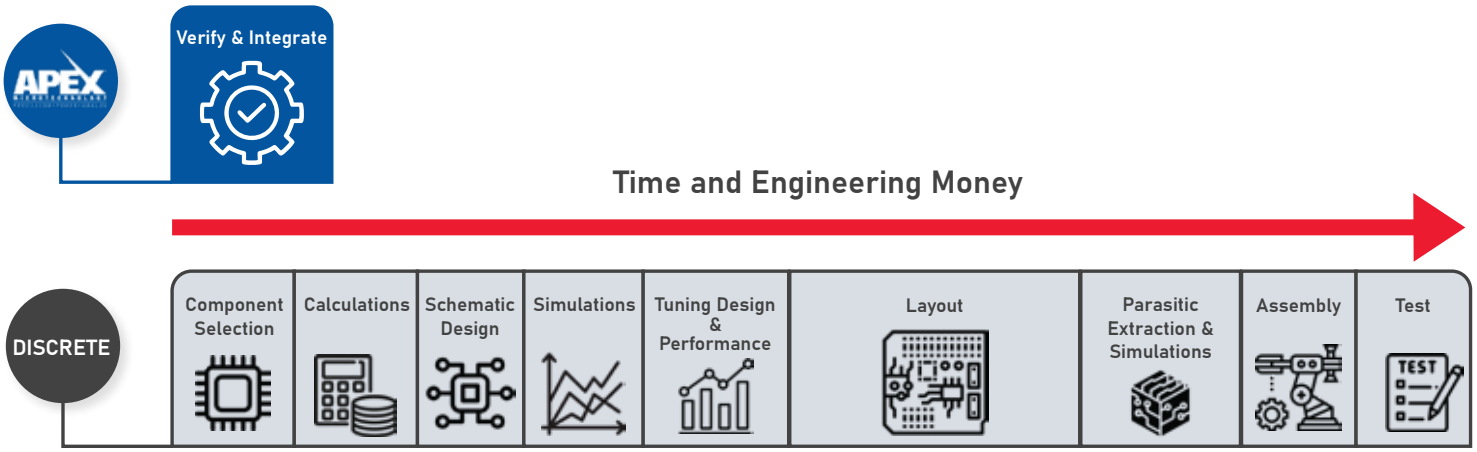
Why Choose Apex Modules Over Discrete Designs?

Let Apex do the hard work so you don't have to.

Designing a high-power solution from scratch takes time, expertise, and countless iterations. Apex hybrid power modules eliminate that burden by integrating precision-matched components, thermal optimization, and proven circuit topologies into a single device. Instead of spending weeks tuning a discrete design, you can verify, integrate, and move straight to system-level innovation.

APEX MODULES vs. DISCRETE DESIGN ENGINEERING RESOURCES

Simplify your design flow with one proven module and avoid the long list of tasks that drive up time and engineering cost.



SILICON CARBIDE INTEGRATED POWER MODULES

Apex power modules replace weeks of component selection, thermal modeling, layout iteration, and bench rework with a solution that is already optimized, tested, and production-ready. Beyond the hardware, Apex delivers expert applications support every step of the way. From schematic and layout reviews to in-house failure analysis, our engineers help reduce risk, accelerate validation, and ensure your design performs as intended.

NEW

Specification Parameter	MSA303	SA111	SA310	SA110
Output Current Continuous	40A	32A	30A	28A
Supply Voltage Operation	650V	650V	650V	400V
Internal Power Dissipation		56W	111W	89W
Output Architecture	3-Phase	Single-Phase	3-Phase	Single-Phase
Switching Frequency	1MHz	1MHz	400kHz	400kHz
Package Style	22-pin Vertical Mounting	52-pin QFP, Surface Mount	16-pin KR, Power DIP	12-pin DP, Power SIP

MIL-PRF-38534 ISO9001

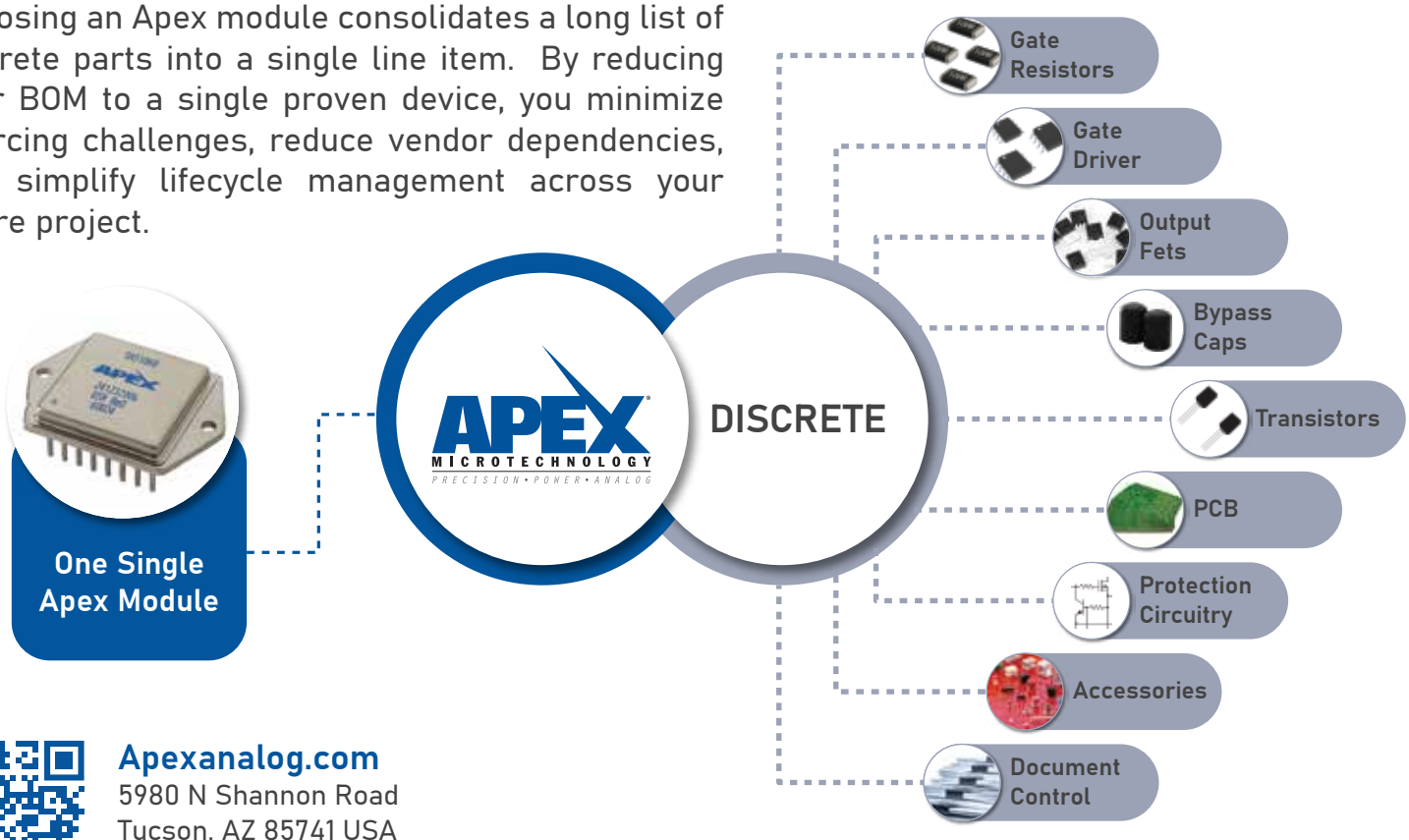
TRADEOFFS AT A GLANCE

This table summarizes the key performance and design considerations engineers face when selecting between a discrete power stage and a fully integrated Apex module.

Factor	Apex Module	Discrete Design
Design Time	Days	Months to Years
BOM Size	1 Part	15-50 Components
PCB Area	Compact	Large
Validation Effort	Minimal	Extensive
Design Risk	Low	Medium to High
Lifecycle Support	Managed by Apex	Multiple Vendors
Thermal Performance	Optimized	Dependent on Layout
System Reliability	Proven & Tested	Variable

APEX MODULES vs. DISCRETE DESIGN BILL OF MATERIALS (BOM) COMPARISON

Choosing an Apex module consolidates a long list of discrete parts into a single line item. By reducing your BOM to a single proven device, you minimize sourcing challenges, reduce vendor dependencies, and simplify lifecycle management across your entire project.



Apexanalog.com
5980 N Shannon Road
Tucson, AZ 85741 USA
Phone: +1 (520) 690-8600

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