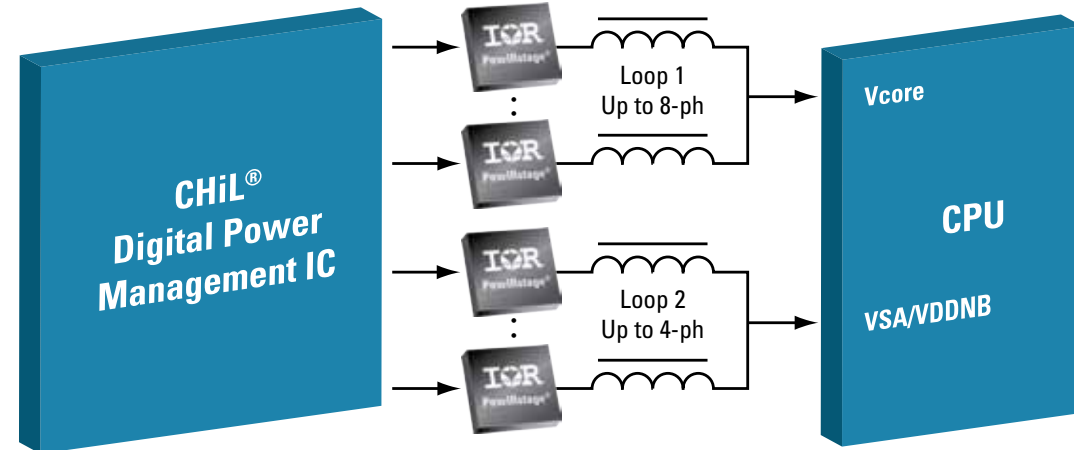


Product Line	Applications	Key Products
 <p><b>Energy Saving Products</b> Integrated design platforms that enable customers to add energy-conserving features that achieve lower operating energy costs and manufacturing Bill of Material (BOM) costs.</p>	<ul style="list-style-type: none"> <li>• Appliances</li> <li>• Audio</li> <li>• Display</li> <li>• Industrial</li> <li>• Lighting</li> <li>• SMPS</li> </ul>	<ul style="list-style-type: none"> <li>• Digital Control ICs</li> <li>• High-Voltage ICs</li> <li>• IGBTs</li> <li>• IRAM Integrated Power Modules</li> <li>• MERs</li> </ul>
 <p><b>Enterprise Power</b> Optimized power management system solutions that deliver benchmark power density, efficiency and performance in enterprise power.</p>	<ul style="list-style-type: none"> <li>• Servers</li> <li>• Storage Networks</li> <li>• Switchers &amp; Routers</li> <li>• Workstations</li> <li>• Notebooks</li> <li>• Game Stations</li> <li>• Set-Top Box</li> </ul>	<ul style="list-style-type: none"> <li>• DirectFET<sup>®plus</sup></li> <li>• Low-Voltage ICs</li> <li>• SupIRBuck<sup>®</sup></li> <li>• iPOWIR<sup>®</sup></li> <li>• PowIRstage<sup>®</sup></li> <li>• CHiL Digital Controllers</li> </ul>
 <p><b>Automotive</b> Automotive grade power management solutions qualified to meet the needs of 12V, 24V and HEV/EV applications with a zero defect goal.</p>	<ul style="list-style-type: none"> <li>• AC and DC Motor Drives</li> <li>• Powertrain / Engine control</li> <li>• Body Electronics</li> <li>• Lighting</li> <li>• Class D Audio</li> <li>• Heavy Loads and Actuators</li> </ul>	<p>Automotive Qualified:</p> <ul style="list-style-type: none"> <li>• HEXFET<sup>®</sup> Power MOSFETs</li> <li>• Intelligent Power Switches</li> <li>• Driver ICs</li> <li>• IGBTs</li> <li>• DirectFET<sup>®2</sup></li> </ul>
 <p><b>Benchmark MOSFETs</b> IR continues to lead the industry by offering power MOSFETs with the lowest <math>R_{DS(on)}</math> and widest range of packages up to 250V for a diverse range of applications.</p>	<ul style="list-style-type: none"> <li>• Audio</li> <li>• Computing</li> <li>• Communications</li> <li>• Motor Control</li> <li>• Power Supply</li> <li>• Synchronous Rectification</li> </ul>	<ul style="list-style-type: none"> <li>• Discrete HEXFET<sup>®</sup> MOSFETs</li> <li>• Dual HEXFET<sup>®</sup> MOSFETs</li> <li>• FETKY<sup>®</sup></li> </ul>
 <p><b>HiRel</b> Our discrete components, complex hybrid power module assemblies and rugged DC-DC converters utilize leading-edge power technology which, together with demanding environmental specifications help engineers to meet their toughest design challenges.</p>	<ul style="list-style-type: none"> <li>• Space</li> <li>• Military</li> <li>• Commercial Aviation</li> <li>• Rugged Industrial</li> <li>• Medical</li> </ul>	<ul style="list-style-type: none"> <li>• RAD-Hard MOSFETs</li> <li>• Power Modules/Hybrid Solutions</li> <li>• Motor Control Solutions</li> <li>• DC-DC Converters</li> </ul>

## Multiphase DC-DC Product Selection Guide



CHiL® Digital power management combined with PowIRstage® provide the most efficient solutions for multiphase converters for processor and memory power



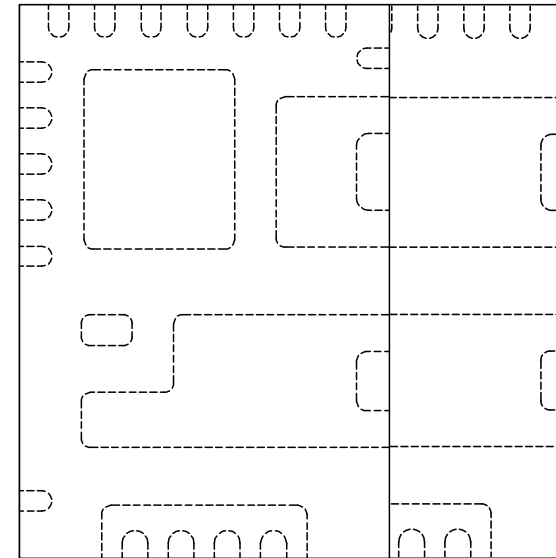
### Multiphase Digital Controller Selector Guide

Controller Selector Guide	CPU & MEMORY								GPU & MEMORY									
	CHL8314	CHL8316	CHL8318	CHL8325A IR3541	CHL8325B	CHL8326 IR3536	CHL8328 IR3538	CHL8102	CHL8103	CHL8104	CHL8113	CHL8203	CHL8212	CHL8213	CHL8214	CHL8225	CHL8228	
Target Application	Desktop CPU				✓	✓		✓	✓	✓								
	Overclocking DT	✓	✓	✓	✓	✓	✓											
	Server CPU		✓	✓	✓	✓	✓			✓								
	Server DDR	✓			✓	✓		✓	✓	✓	✓							
	Performance GPU													✓	✓	✓	✓	
	Mainstream GPU												✓	✓	✓	✓	✓	
CPU GPU Support	GPU GDDR							✓	✓	✓	✓	✓	✓	✓				
	VR11.1	✓	✓	✓														
	VR12 SVID				✓	✓	✓	✓	✓	✓	✓							
	nV-VRI											✓	✓	✓	✓	✓	✓	
	SVI 1				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Efficiency	OverClocking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	PS2 - Diode Emulation	✗	✗	✗	DE	DE	DE	DE	DE	DE	DE	DE	DE	DE	DE	DE	DE	
	PS1 - 1 or 2 phases	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Auto-PSI / DPC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Variable Gate Drive	✓	✓	✓	✓	✗	✓	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓	
	Phase Shed / Add	L-M-H	L-M-H	L-M-H	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	0 by 0	
Regulated Loops	Phase Balance & Offset	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	# Regulated Loops	1	1	1	2	2	2	2	2	2	1	1	2	2	2	2	2	
	Loop 1 - # Phases	1 - 4	1 - 6	1 - 8	1 - 5	1 - 5	1 - 6	1 - 8	1 - 2	1 - 3	1 - 4	1 - 3	1 - 3	1 - 2	1 - 3	1 - 4	1 - 5	1 - 8
	Loop 2 - # Phases	✗	✗	✗	0 - 2	0 - 2	0 - 3	0 - 4	0 - 1	0 - 1	0 - 1	✗	✗	0 - 1	0 - 1	0 - 1	0 - 2	0 - 4
	Total # Phases	4	6	8	5	5	6	8	3	4	5	3	3	3	4	5	5	8
Package	Typical Configuration	40	60	80	40+10	40+10	50+10	70+10	20+10	30+10	40+10	30	30	20+10	30+10	40+10	40+10	60+20
	Package	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN	QFN
	Size	7x7	7x7	8x8	6x6	6x6	7x7	8x8	5x5	6x6	6x6	5x5	5x5	5x5	6x6	6x6	6x6	8x8
Comm's Protocol	Pins	48	48	56	40	40	48	56	28	40	40	28	28	28	40	40	40	56
	I2C	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SMBus	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Telemetry	PMBus	✗	✗	✗	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Input/Output Voltage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Output Current	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Input I, Power, Efficiency	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Input Rails	Temperature	✓	✓	3	1	2	2	2	✓	2	2	✓	✓	✗	2	2	✓	2
	IC Rail	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V	3.3V
	Multiple +12V GPU Support														2		3	

### PowIRstage® footprint compatibility allows for flexible design

IR3553  
4 x 6 mm - 40 A

IR3550  
6 x 6 mm - 60 A



### Key Features

- Output current capability up to 60A
- Peak efficiency up to 95% at 1.2V<sub>OUT</sub>
- Input voltage (V<sub>IN</sub>) range of 4.5V to 15V
- Output voltage (V<sub>OUT</sub>) range from 0.25V to 3.3V
- Operation up to 1MHz
- Integrated current sense amplifier
- Thermal flag
- Body-Braking™ load transient support
- Compliant with Intel DrMOS V4.0
- Efficient dual sided cooling
- Compact PQFN package
- Lead free RoHS compliant package

### DirectFET® plus Features

- Industry leading performance
  - Lowest R<sub>DS(on)</sub> and Rg
  - Lowest package resistance and inductance
  - Integrated Schottky
  - Best thermal performance
- Builds on DirectFET® superior reliability
  - Lowest defectivity rates in industry (<0.8PPM)
- Proven manufacturability



Part Number	Socket	BV <sub>DSS</sub> (V)	R <sub>DS(on)</sub> typ @10V (mOhms)	R <sub>DS(on)</sub> typ @4.5V (mOhms)	V <sub>GS</sub> max (V)	Q <sub>G</sub> typ @4.5V (nC)	Footprint	Schottky
IRF6811S	Control	25	2.8	4.1	+/-16	11	SQ	no
IRF6810S	Control	25	3.9	5.5	+/-16	7.7	S1	no
IRF6898M	Sync	25	0.8	1.2	+/-16	38	MX	yes
IRF6894M	Sync	25	0.9	1.3	+/-16	29	MX	yes