Features

- Output voltage up to 1.8V
- Maximum output current: Defined by selected device 1A=AmP8D1, 3A=AmP8D3, 6A=AmP8D6
- Adjustable soft-start slew rate to control inrush current
- Adjustable current limit protection
- Short-circuit protection (SCP)
- Additional capabilities – I750, P750
- Adjustable protection: Under-Voltage Lockout, (UVLO), Overcurrent (OCP), Overvoltage (OVP), and Over Temperature (OTP)
- Power-good flag output and Enable input
- Soft start/stop, sequencing
- 74-pin VQFN package
- –40°C to +125°C operating junction temperature
- One SIM element; integrate up to twelve C750 Power Components in one AmP platform

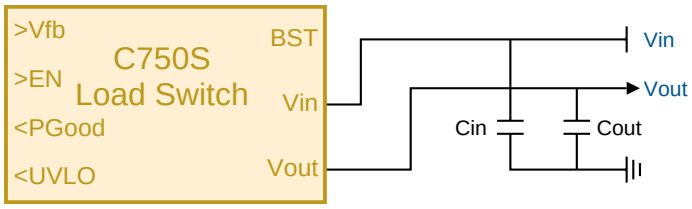
Applications

- Reverse-current protection
- Power isolation; reduce leakage current
- Protect circuits from inrush current or current spikes
- Reduce power and extend battery life; turn off power to unused circuits

Typical Application Circuit

Figure 1 provides a typical schematic for the C750 Power Component when integrated with other power rails in an AmP application.

Figure 1: C750 application schematic



Description

The C750 Power Component is a customizable Load Switch with adjustable current protection and adjustable slew-rate to control in-rush current. Combine the C750 component with other Power Components to create a highly-integrated, custom-defined, AnDAPT AmP™ on-demand power management device.

The integrated linear Scalable Integrated MOSFET (SIM) provides up to 6A, output current. The maximum current is defined by the AmP device selected. The integrated current sense provides over-current protection (OCP) and a programmable current limit.

The C750 has customizable control and status pins including an optional enable input, an optional power-good output, and an optional output flag to signal when the system triggers an undervoltage lockout (UVLO) condition. The threshold values, the soft-start and soft-stop slew rates, and ramp timing are specified by the power engineer using AnDAPT's cloud-based WebAmp™ development software.

Customizable Options

Table 1 lists the various customizable options available for the C750 Power Component. These options are set graphically in the WebAmp development software.

Table 1: C750 Customizable Options

Option	Units
Input voltage	V
Output voltage	V
Output Current	A
Enable OCP output to signal when overcurrent protection is triggered	On/Off
Overcurrent protection level	A
Enable OVP output to signal when overvoltage protection is triggered	On/Off
Overvoltage protection level	V
Enable input UVLO to signal when undervoltage lockout protection is triggered	On/Off
Undervoltage lockout sense level	V
UVLO sense	Ext/Int
Enable soft start	On/Off
Soft start current	A
Use optional PGood output to signal "power good"	On/Off
"Power good" threshold, percentage of output	%

Package Options

Table 2 lists the package options available for the C750 Power Component.

Table 2: Package Options for C750

Pins	Dimension	SIM Bonding	Package
74	8 x 8 mm	Single	QF74

Advanced Capabilities and Options

Table 3 lists derivatives of the C750 component with additional capabilities plus other similar components potentially suitable for this application.

Table 3: C750 Advanced Capabilities Options

Description	Part Number
Standard version (this component)	C750
Add external control via I^2C bus interface	I750
Add telemetry and dynamic voltage scaling via DVS interface	P750

System Characteristics

Table 4 lists the system characteristics for the C750 Power Component when implemented in an AnDAPT AmP device. “Prog” column specifies parameters that are user selectable.

Table 4: C750 System Characteristics

Parameters		Min	Typ	Max	Units	Prog
Input Drain Voltage (P_{VIN})		0.6		1.8*	V	
Output Voltage (V_{OUT})				PV_{IN}	V	√
Output Current (I_{OUT})	D6			6	A	√
	D3			3		
	D1			1		
Output MOSFET switch ($R_{DS(on)}$)			30		mΩ	
Current Limit – OCP		0		8.5	A	√
Overvoltage protection trip point (OVP)		0.8		2.25*	V	√

* Consult factory for higher voltages up to 5.5V.

For other device specifications, see the AnDAPT AmP Platform datasheet.

Additional Resources

- AnDAPT AmP Platform datasheet