



New Product Announcement

USB-C™ 24V/3.5A Power Switch

24V/3.5A Power Switch Optimized for the V_{BUS} Line of the Universal USB Type-C™ Connector

Diodes Incorporated announces the introduction of the DPS1035. This is a single-channel power switch designed to operate up to 24V and is optimized for USB Type-C™ & Power Delivery applications which are rapidly becoming universal in many market segments.

DPS1035 integrates two MOSFET switches with very low $R_{DS(ON)}$. The internal MOSFET switches are turned OFF to prevent damage to either the device or the end system when any of the following conditions becomes valid: a) the voltage level at the input port is below 3.7V (typical); b) the voltage level at the output port becomes higher than that of the input port by 40mV; c) the internal junction temperature exceeds 155°C (typical). The output and input ports of the DPS1035 can be discharged by having the corresponding active-high DISCx pin asserted. The discharge path is through an internal 82Ω resistor.

DPS1035 is packaged in a lead, halogen and antimony free QFN package which is fully RoHS-compliant. The 0.8mm low-profile height and 4x4mm footprint allow the device to be easily incorporated into end systems such as mobile and desktop computers, handheld game consoles, portable battery banks, PC monitors, etc.



The Diodes Advantage

Low ON-state Resistance

The low on-state resistance ($R_{DS(ON), TYP} = 30m\Omega @ V_{IN} = 5\sim 20V$) enables maximum continuous current up to 3.5A.

Adjustable Overvoltage Limit and Output Ramp-up Speed

When the V_{BUS} line of the USB-C™ connector level exceeds the value (6~24V typical) set by an external resistor, the internal MOSFET switches are turned OFF to prevent any possible damage. Ramp-up speed of the output voltage is adjusted via an external resistor to minimize the in-rush current.

Undervoltage, Reverse Voltage and Over-temperature Protection

The internal MOSFET switches are turned OFF to prevent damage to either the device or the end system for the following condition: a) the voltage level at the input port is below 3.7V (typical); b) the voltage level at the output port becomes higher than that at the input port by 40mV; c) the internal junction temperature exceeds 155°C (typical).

Discharge of Input and Output Ports

The output and input ports of the DPS1035 can be discharged by having the corresponding active-high DISCx pin asserted. The discharge path is through an internal 80Ω resistor.

Circuit Functions

- Gating Power into Sub-system
- Intelligent Protection of Power Path

Target Markets

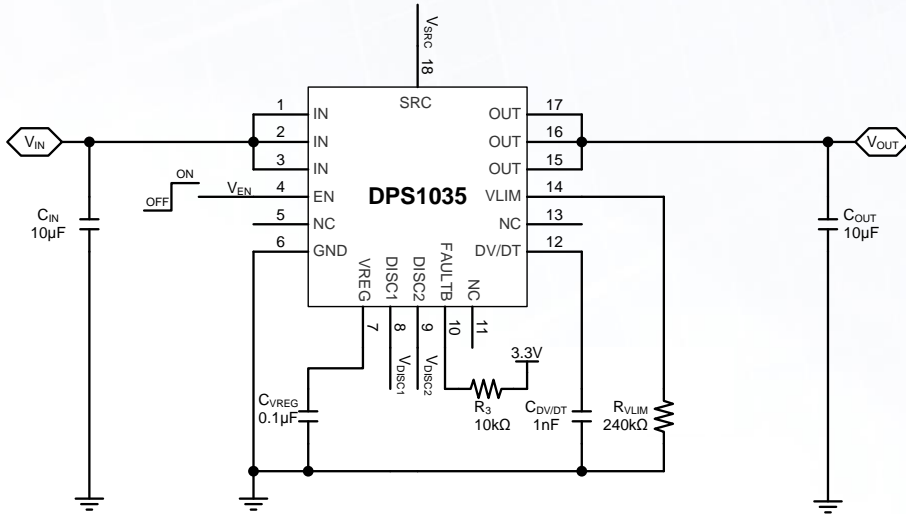
- Mobile Computers
- Handheld Game Consoles
- PC Monitors
- Portable Battery Banks



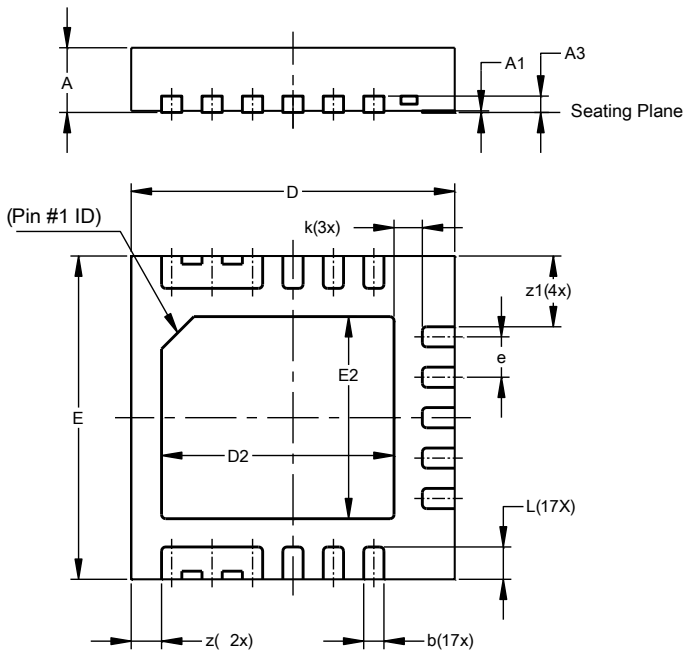
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Typical Application Circuit



Package Outline Dimension



V-QFN4040-17			
Dim	Min	Max	Typ
A	0.75	0.85	0.80
A1	0.00	0.05	0.02
A3	-	-	0.203
b	0.20	0.30	0.25
D	3.95	4.05	4.00
D2	2.775	2.975	2.875
E	3.95	4.05	4.00
E2	2.40	2.60	2.50
e	0.50 BSC		
k	-	-	0.35
L1	-	-	0.10
L	0.35	0.45	0.40
z	-	-	0.38
z1	-	-	0.88
All Dimensions in mm			