



New Product Announcement

AP22654 AP22655

Adjustable, 3.5A, Current-Limited Power Switches Improve Durability of USB 3.2 and USB-C Ports

The AP22654 and AP22655 are single-channel, adjustable, current-limited switches optimized for applications that require precision current limiting.

Their programmable current-limit threshold adjusts between 400mA and 3500mA (typical) via an external resistor, enabling the parts to support continuous load currents up to 3.1A.

Both devices feature a low 50mΩ $R_{DS(on)}$ high-side MOSFET, which offers lower power dissipation and lower inline-voltage drops.

Their controlled output rise and fall times help minimize current surges when turning on/off, enabling use in applications subject to heavy capacitive loads.

The AP22654 and AP22655 have a comprehensive suite of protection features including reverse-current blocking and limiting, overcurrent, overtemperature, and short-circuit protection, as well as undervoltage lockout functionality.

Their open-drain fault flag has a 6ms deglitch time, which prevents false overcurrent reporting.

Both devices are available in the TSOT26 (Type A1) package.



The DIODES Advantage

The AP22654 and AP22655, with their 3.5A adjustable current limit, provide robust USB 3.2 and USB-C® port protection.

- **Tight Tolerance, Adjustable Current Limit from 0.4A to 3.5A**
Single device used across platforms with one resistor change; allows closer matching of current limits to system requirements
- **50mΩ $R_{DS(ON)}$ High-Side MOSFET**
Provides lower power-dissipation and lower inline-voltage drops
- **Fast Short-Circuit Response Time: 5µs**
Prevents unnecessary system shutdowns or restarts, which improves system robustness
- **Reverse-Current Protection: Blocking During Shutdown and Current Limiting While Enabled**
Protects system from reverse currents when peripherals are externally powered
- **Robust Protection Features Set with Fault Reporting Overcurrent (Limiting), Reverse Output Overvoltage, and Thermal Shutdown**
Improved robustness of USB ports

Applications

- Notebook PCs/laptops
- Desktops
- Residential gateways
- LCD TVs/monitors
- Docking stations
- USB hubs
- Set-top boxes
- Servers

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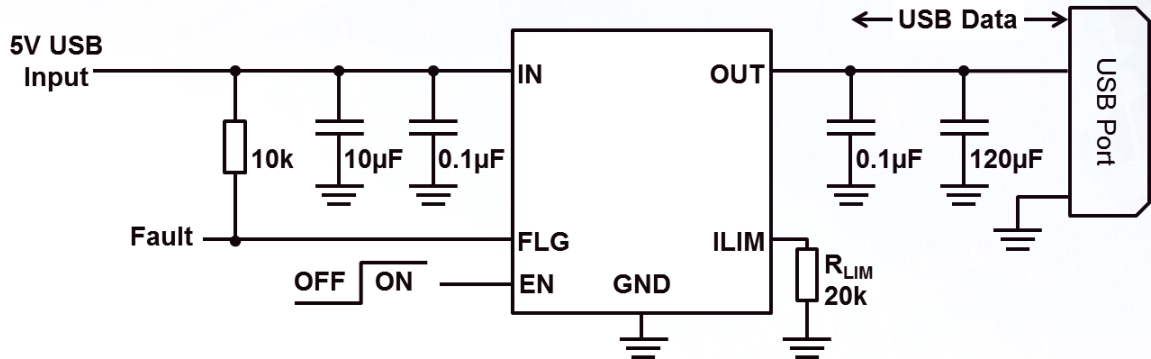
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Typical Application



Product Portfolio

Part Number	Enable Logic (Active)	Latches Off After Fault	Max Continuous Output Current	Max Current Limit	Min / Max Operating Voltage	Quiescent Current @ 5.0V	$R_{DS(ON)}$ @ $V_{IN} = 5.0V$	Output Discharge FET On-Resistance	Reverse Voltage (RVP)	Reverse Current (RCP)	Overcurrent (OCP)	Over Temp. (OTP)	Package Outline
			A	A	V	μA	m Ω	m Ω	Protections				
AP22654	Low	No	3.1	3.56	3 / 5.5	120	50	500	Yes	Yes	Yes	Yes	TSOT26 (Type A1)
AP22655	High	No											

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
AP22654WU-7	Standard	TSOT26 (Type A1)	MSL1	3,000	7" Tape & Reel
AP22655WU-7	Standard				