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APPLICATION NOTE 6760

HOW TO CHOOSE A POWER PATH SELECTOR

Abstract: Maxim has several power path selectors. Some have integrated overvoltage protection, and some have manual reset inputs. The path selectors can auto select the switch depending on the input voltage or the user can enable the switch path manually.

This application note gives an overview of our power path selectors to help customers choose the power path selector that suits their application.

The [MAX14713/MAX14714](#) compact 6A smart power path selectors auto-select the higher voltage input to source output. The comparator threshold is the voltage difference needed between both inputs (IN1, IN2) to switch to the higher input supply voltage. When the device selects the input, the switch is on for at least the latch-off time. The switches can be manually controlled instead of auto-selected with the enable inputs.

The [MAX14727/MAX14728/MAX14731](#) are path selectors with an overvoltage protection feature. The overvoltage threshold can be externally set with a voltage divider or the internal OVLO can be used. Between the two inputs, INA has priority. INB takes over INA either when INB is the only present input or when INB is valid (above 4.1V, typical) and INA is invalid (below 4.1V, typical). The devices also have an OTG feature so output can supply input(s).

The [MAX14740/MAX14741/MAX14742/MAX20320](#) power path selectors auto-select the higher input voltage and also have manual reset inputs (MR) to reset, disconnect, or connect the switches. The MAX14740 has an I²C interface and most of the parameters are programmable. The MAX14741/MAX14742/MAX20320 have a GPIO interface, and there are two comparator thresholds available to be chosen. The switches can still be manually controlled instead of auto-selected with the enable inputs, and both switches can be manually turned on at the same time.

	Soft Start Output Limit	Automatic
Input		

Device	Comparator Threshold	Absolute Max	Internal OVLO	(100µF Load)	Switch Latch-Off	Communication
MAX14713	200mV	6V	-	15mV/µs	Yes (85ms typical)	GPIO
MAX14714	500mV	6V	-	60mV/µs	No	GPIO
MAX14727	-	30V	13.75V	10mV/µs	No	GPIO
MAX14728	-	30V	10V	10mV/µs	No	GPIO
MAX14731	-	30V	5.92V	10mV/µs	No	GPIO
MAX14740	Programmable	6V	-	20mV/µs or 60mV/µs	Yes (programmable)	I ² C
MAX14741	300mV/500mV	6V	-	60mV/µs	No	GPIO
MAX14742	200mV/400mV	6V	-	60mV/µs	No	GPIO
MAX20320	200mV/400mV	6V	-	60mV/µs	No	GPIO

Related Parts

MAX14713	Compact 6A Smart Power Path Selector	Samples
MAX14714	Compact 6A Smart Power Path Selector	Samples
MAX14727	Dual-Input, Bidirectional Overvoltage Protector with Automatic Path Control	Samples
MAX14728	Dual-Input, Bidirectional Overvoltage Protector with Automatic Path Control	Samples
MAX14731	Dual-Input, Bidirectional Overvoltage Protector with Automatic Path Control	Samples
MAX14740	Smart, Compact, 6A, Power-Path Selector with Reset Control	Samples
MAX14741	Smart, Compact, 6A, Power-Path Selector with Reset Control	Samples
MAX14742	Smart, Compact, 6A, Power-Path Selector with Reset Control	Samples

More Information

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