VIPower™ M0-5*Enhanced* family

Automotive dedicated smart power switches

VIPower™ M0-5*Enhanced* semiconductors complement the **M0-5** product portfolio. They offer the same features and protection strategy, but with an enriched diagnostic, ensuring a wider load compatibility obtained by an increase in the current limitation.

The diagnostic reacts as soon as power limitation is reached, avoiding any ambiguity at turn-on between open-load and overload or misdetection of intermittent short circuit.

Moreover, all the options with digital or analog feedback, are equipped with off-state detection of open-load or short to V_{cc} conditions.

Key features

- In-rush current active management by power limitation (self limiting of fast thermal transient)
- Very low standby current
- 3.0 V CMOS compatible inputs
- Optimized electromagnetic emission
- Very low electromagnetic susceptibility
- Under voltage shut-down
- Over voltage clamp
- Load current limitation
- Protection against loss of ground and loss of V_{cc}
- Thermal shut-down protection and diagnostic
- Off-state open-load or stuck to V_{cc} detection
- Reverse battery protection
- Electrostatic discharge protection

Diagnostic options:

- Analogue current sense
- Digital status

Main applications

- Lighting (bulbs, LEDs)
- Door systems
- ABS
- Dome
- Seat heating
- Power management
- Diesel glow plugs
- Climate control
- All types of resistive, inductive and capacitive loads

M0-5 *Enhanced*: What's new?

- Wider variety of load compatibility through current limitation range optimization
- Immediate diagnostic reaction over short-to-ground or overload conditions when power limitation is detected
- Open-load/short to V_{CC} detection in off-state for analog current sense option as well

Product portfolio

Part Number	Package	Channels	Operating voltage range V_{CC} [V]	Max supply voltage V_{CC} (max) [V]	Max on-state resistance $R_{DS(on)}$ (max) [mΩ]	Current limitation I_{LIMH} (typ) [A]	Digital status	Analog current sense
VN5E160S	SO-8	1	4.5 ÷ 28	41	160	10	x	
VN5E050J	PowerSSO-12	1	4.5 ÷ 28	41	50	27	x	
VN5E050AJ	PowerSSO-12	1	4.5 ÷ 28	41	50	27		x
VN5E025AJ	PowerSSO-12	1	4.5 ÷ 28	41	25	60		x
VND5E160J	PowerSSO-12	2	4.5 ÷ 28	41	160	10	x	
VND5E160AJ	PowerSSO-12	2	4.5 ÷ 28	41	160	10		x
VND5E050J	PowerSSO-12	2	4.5 ÷ 28	41	50	27	x	
VND5E050AJ	PowerSSO-12	2	4.5 ÷ 28	41	50	27		x
VND5E050K	PowerSSO-24	2	4.5 ÷ 28	41	50	27	x	
VND5E050AK	PowerSSO-24	2	4.5 ÷ 28	41	50	27		x
VND5E025AK	PowerSSO-24	2	4.5 ÷ 28	41	25	60		x
VNQ5E160K	PowerSSO-24	4	4.5 ÷ 28	41	160	10	x	
VNQ5E050K	PowerSSO-24	4	4.5 ÷ 28	41	50	27	x	
VNQ5E050AK	PowerSSO-24	4	4.5 ÷ 28	41	50	27		x
Coming soon								
VN5E016AH	HPAK	1	4.5 ÷ 28	41	16	73		x
VN5E010AH	HPAK	1	4.5 ÷ 28	41	10	85		x
VND5E012AY	PowerSSO-36D	2	4.5 ÷ 28	41	12	74		x
VND5E008AY	PowerSSO-36D	2	4.5 ÷ 28	41	8	85		x
VND5E006ASP	PowerSO-16	2	4.5 ÷ 28	41	6	100		x
VNQ5E250AJ	PowerSSO-16	4	4.5 ÷ 28	41	250	5		x
VNQ5E160AK	PowerSSO-24	4	4.5 ÷ 28	41	160	10		x

SO-8 *PowerSSO-12* *PowerSSO-24* *HPAK* *PowerSSO-36* *PowerSO-16*

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