

PerFET™ POWER MOSFET 40V Family

Taiwan Semiconductor introduces PerFET™ (NH Series), a family of products built on proprietary device structures and processes that enable exceptionally low on-state resistance and switching figure-of-merit (FOM - R*Q). The achievement of 50% RDS(on) and 40% FOM reduction compared to our previous technology (NB Series) puts this portfolio at the industry leading edge of performance. The value of RDS(on) at temperatures of -50°C to 175°C presented less variation due to its lower temperature coefficient (K). This initial 40V N-channel platform includes options for both standard (10V) and logic level (5V) gate-drive requirements while preserving rugged safe-operating resistance to switching voltage transients and avalanche concerns in switching applications.

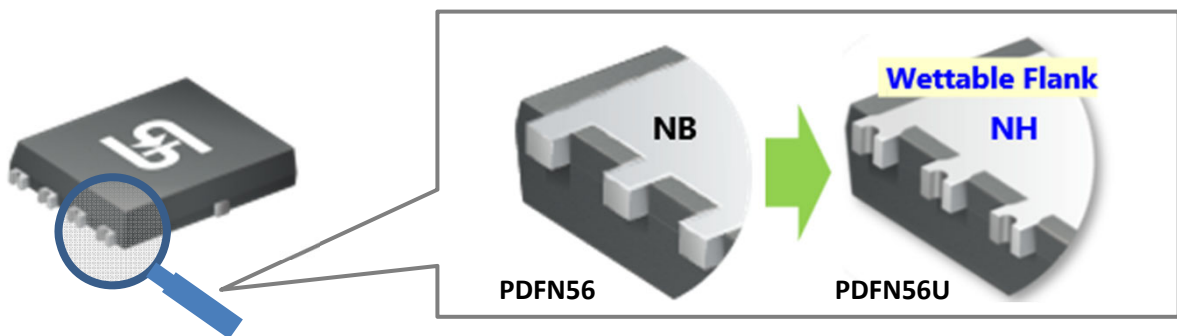
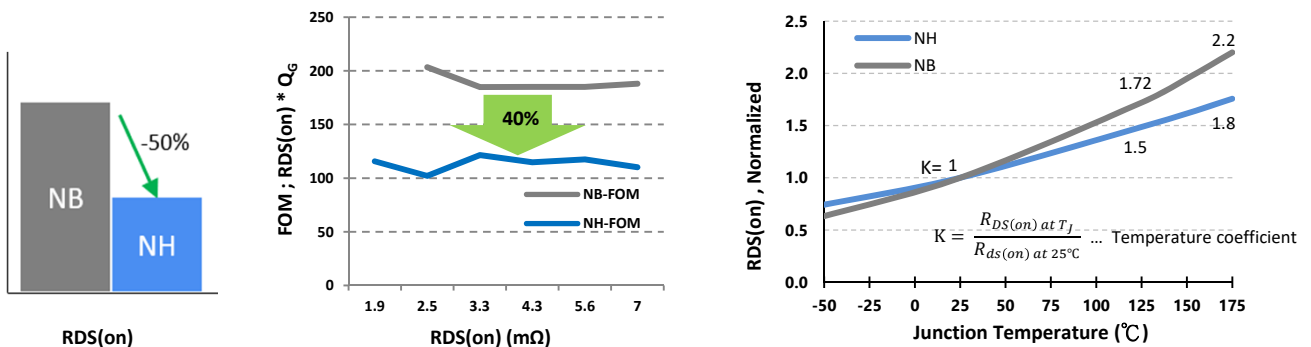
New PDFN56U package is compatible with conventional SOP8 packages. Its Wettable Flank leads improve solder joint reliability and AOI's accuracy during PCB assembly process.

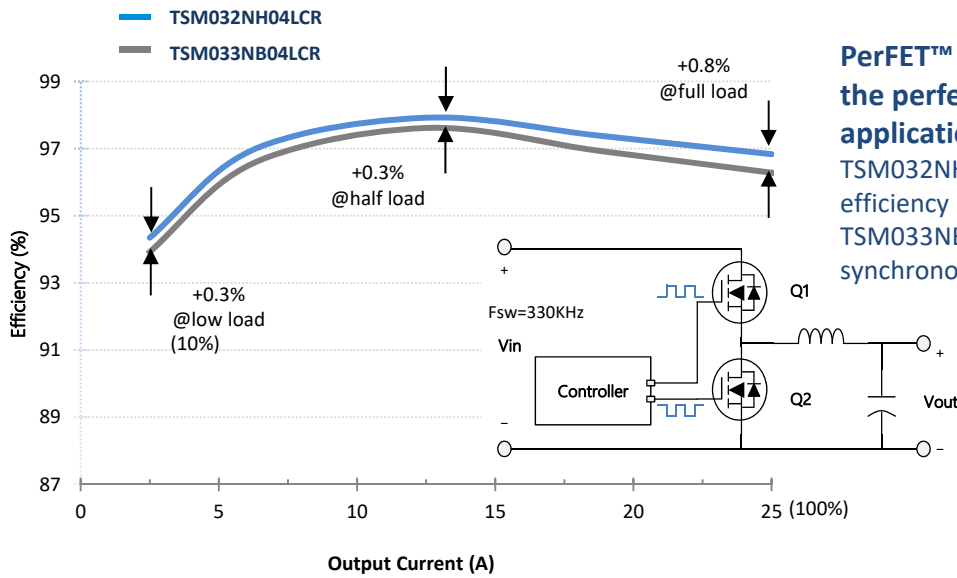
FEATURES

- Ultra-low On-resistance
- Wettable Flank leads for Enhanced AOI
- 100% UIS and Rg tested
- 175°C Operating Junction Temperature
- RoHS Compliant
- Halogen-Free according to IEC 61249-2-21

APPLICATIONS

- SMPS
- Server
- DC-DC Converters
- Telecom
- Motor Drivers
- Multicopter

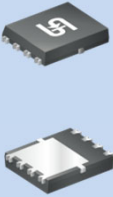
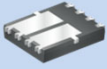




PerFET™ 40V power MOSFET is the perfect solution in SMPS applications.

TSM032NH04L achieves a much better efficiency performance compared to TSM033NB04L at 300W converter with synchronous rectification.

Product portfolio

Package	Part Number	BV_{DSS} (V)	$R_{DS(ON)}$ max. 10V (m Ω)	$R_{DS(ON)}$ max. 4.5V (m Ω)	I_D $T_c=25^\circ C$ (A)	V_{GSTH} (V)	Q_G typ $V_{GS}=10V$ (nC)
	TSM019NH04LCR	40	1.9	2.7	100	1.4 ~ 2.2	104
	TSM019NH04CR	40	1.9	-	100	2.4 ~ 3.6	89
	TSM025NH04LCR	40	2.5	3.5	100	1.4 ~ 2.2	63.3
	TSM025NH04CR	40	2.5	-	100	2.4 ~ 3.6	53.7
	TSM032NH04LCR	40	3.2	4.5	81	1.4 ~ 2.2	50
	TSM032NH04CR	40	3.2	-	81	2.4 ~ 3.6	45
	TSM043NH04LCR	40	4.3	6	54	1.4 ~ 2.2	42
	TSM043NH04CR	40	4.3	-	54	2.4 ~ 3.6	37
	TSM056NH04LCR	40	5.6	7.8	54	1.4 ~ 2.2	30
	TSM056NH04CR	40	5.6	-	54	2.4 ~ 3.6	27.3
	TSM070NH04LCR	40	7	9.8	54	1.4 ~ 2.2	23
	TSM070NH04CR	40	7	-	54	2.4 ~ 3.6	19
	TSM076NH04LDCR	40	7.6	10.6	34	1.4 ~ 2.2	22.4
	TSM076NH04DCR	40	7.6	-	34	2.4 ~ 3.6	19