

# STPOWER MOSFETs in the innovative TO-LL



## The latest evolution in SMD power packages



### The new space-saving and thermally efficient leadless package

The new STPOWER MOSFET Super-junction MDmesh<sup>(\*)</sup> M6 and MDmesh DM6 series in the space-saving and thermally efficient TO-LL leadless package allows more compact and space-saving power converters. Thanks to the additional Kelvin-source lead, designers can achieve better efficiency due to reduced turn-on / turn-off switching losses.



#### KEY FEATURES

- Reduced space on board
- Distributed heat sinks
- Additional Kelvin-source
- Reduced thickness (2.3 mm)
- High creepage (distance 2.7 mm)

#### KEY BENEFITS

- Increased power density
- Competitive thermal dissipation
- Improvement in Turn-on / Turn-off efficiency

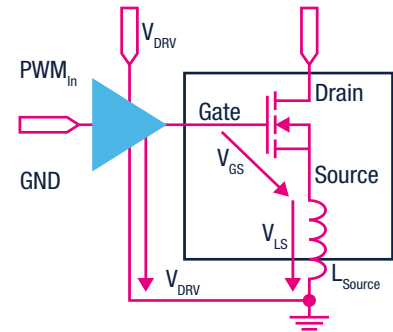
#### KEY APPLICATIONS

- Servers
- Telecom 5G SMPS
- Solar Microinverters

Note: \* is a registered and/or unregistered trademark of STMicroelectronics International NV or its affiliates in the EU and/or elsewhere

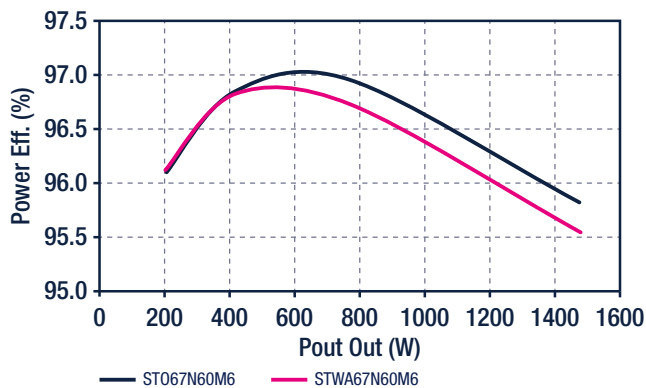
## TO-LL with STPOWER MOSFET MDmesh M6 and MDmesh DM6 series

The TO-Leadless (TO-LL) package solution was tested against the TO-247 in the PFC and LLC sections of a 1.5 kW SMPS to compare their respective thermal performance and efficiency. The additional Kelvin-source lead generates significant efficiency gains in the PFC section at full load with high current levels, thanks to the reduction of the inductive effect on the turn-on commutation. The efficiency in the LLC section remains identical for both packages.



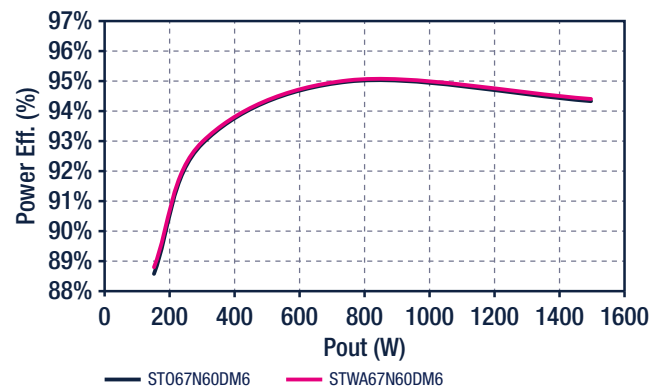
### Power efficiency in PFC section

#### System Power Efficiency



### Power efficiency in LLC section

#### System Power Efficiency



## Product portfolio in TO-LL package

$B_{VDS}$ (V)	$R_{DS(on)}$ ( $\Omega$ )	$I_o$ (A)	$Q_o$ (nC)	Sales Type	Package	Technology
600	0.190	17	23	ST024N60M6	TO-LL	MDmesh M6
	0.125	25	33	ST033N60M6		
	0.099	30	44	ST036N60M6		
	0.080	36	52	ST047N60M6		
	0.054	34	72	ST067N60M6		MDmesh DM6
	0.078	TBD	52	ST052N60DM6*		
	0.076	46	65	ST065N60DM6		
650	0.065	55	80	ST068N65DM6		

Note: \* Under development



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