

300-1200 V MDmesh™

The most complete SJ MOSFETs offer for (H)EV power solutions



Enhanced power handling for AEC-Q101 Electro Mobility solutions thanks to ST's MDmesh™ Super Junction technology

With a broad range of breakdown voltages from 300 to 1200 V, ST's Automotive-grade Power MOSFET portfolio offers more efficient and less expensive power electronics solutions. Thanks to a very low gate charge and low on-resistance combined with state-of-the-art packaging, ST's MDmesh™ technology ensures an enhanced power handling capability, resulting in the ideal choice for all Automotive applications targeting very high efficiency and very impressive power density for super robust power conversion topologies.

KEY FEATURES

- Fast recovery body diode
- Extremely high dV/dt ruggedness
- Low gate charge
- Widest portfolio 300 to 1200 V

KEY BENEFITS

- Higher efficiency with lower design complexity
- Especially targeted for Resonant Converter and ZVS topologies
- The only one-stop shop, including very high voltage AEC-Q101 rev. D1 qualified Power MOSFETs

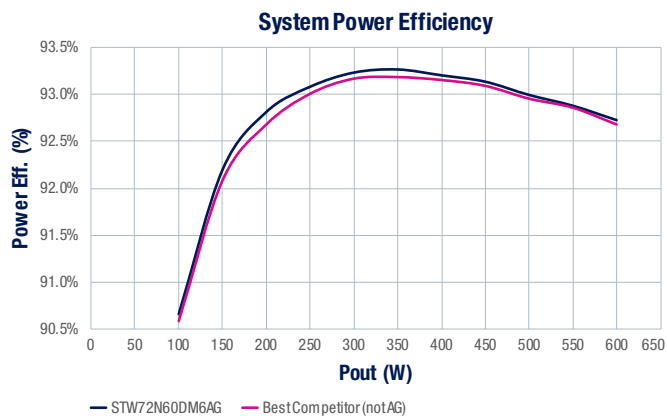
KEY APPLICATIONS

- On-Board Chargers
- DC to DC Converters
- Battery Management Systems

MDmesh™ DM6 BENCHMARK

Optimized for full-bridge phase-shifted ZVS topologies, ST's MDmesh™ DM6 super-junction power MOSFETs combine an optimized capacitance profile and lifetime killing process that results in a low gate charge (Q_g), very low recovery charge (Q_{rr}), low recovery time (t_{rr}) and an excellent improvement in $R_{DS(on)}$ per area.

Thanks to their optimized output capacitance profile and lower Q_g , ST's Automotive-grade MDmesh™ DM6 Power MOSFETs show a Total System Efficiency aligned or even better than the best competitor (not Automotive Graded).



AEC-Q101 300 V-1200 V MDmesh™ SJ MOSFETs

Part number	Marketing Status	Package	Grade	V_{DSS} (V)	$R_{DS(on)}$ (Ω) (@ $V_{GS}=10$ V) max	Drain Current (Dc) (A) max	P_{TOT} (W) max	Q_g (nC) typ
STB46N30M5	Active	D2PAK	AEC-Q101	300	0.04	53	250	95
STB45N40DM2AG	Active	D2PAK	AEC-Q101	400	0.072	38	250	56
STD13N50DM2AG	Active	DPAK	AEC-Q101	500	0.36	11	110	11.7
STWA72N60DM2AG	Active	TO-247 long leads	AEC-Q101	600	0.042	66	446	121
STH47N60DM6-2AG	Active	H2PAK-2	AEC-Q101	600	0.08	36	250	55
STB43N65M5	Active	D2PAK	AEC-Q101	650	0.063	42	250	100
STW78N65M5	Active	TO-247	AEC-Q101	650	0.032	69	450	203
STB30N65M2AG	Active	D2PAK	AEC-Q101	650	0.18	20	180	30.8
STWA30N65DM6AG	Active	TO-247 long leads	AEC-Q101 rev.D	650	0.11	30	250	47
STL7LN65K5AG	Active	PowerFLAT 5x6 VHV	AEC-Q101 rev.D	650	1.15	5	42	12
STW22N95K5	Active	TO-247	AEC-Q101	950	0.33	17.5	250	48
STH13N120K5-2AG	Active	H2PAK-2	AEC-Q101	1200	0.69	12	219	41.1



To explore the complete MDmesh™ product portfolio, visit www.st.com or use our ST-MOSFET-Finder mobile app for Android and iOS.

