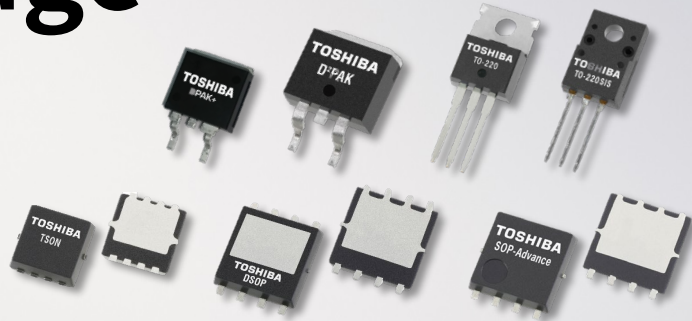


Low Voltage MOSFETs



Highest Efficiency at Light Loads

U-MOS VIII-H and IX are high-efficiency Low Voltage (LV) MOSFET series, specifically designed for use in the secondary side of AC-DC power supplies for adapters, servers etc. as well as DC-DC power supplies for communication equipment, servers and data center. U-MOS IX is also suitable for motor drives, UPS and machine tools. The U-MOS VIII-H and IX series provide higher efficiency at light loads while providing the same efficiency as competitors' devices at heavy loads. This technology is specified up to 175°C for use in higher temperature applications.

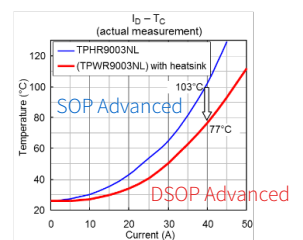
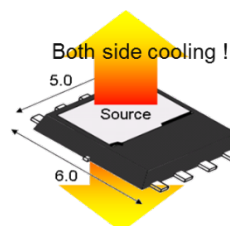
Applications

- Power Supplies
- Servers
- UPS
- Battery Packs
- Industry Automation
- Adapters
- Machine Tools
- Welding

| Features | Advantages | Benefits |
|--|--|--|
| <ul style="list-style-type: none"> Latest Gen-8 and Gen-9 trench MOS process Improved energy efficiency categories Dual side cooling Highest performance in on-resistance per die area ($R_{ON} \cdot A$) Wide range of V_{DSS} (30V-250V) and $R_{DS(ON)}$ values down to 0.6mΩ | <ul style="list-style-type: none"> Applicable in various power apps. Significantly better trade-offs between on-resistance ($R_{DS(ON)}$) and input capacitance (C_{iss}). High avalanche ruggedness. Reduced electromagnetic radiation. Same efficiency as competitors' devices at heavy loads and higher efficiency at light loads Reduction of thermal resistance by approx. 50% resulting in higher load capability and reliability Ideal for applications that require higher efficiency, smaller size etc. Meets the requirements of various applications | <p>Attractive cost effects</p> <ul style="list-style-type: none"> Lower system costs due to fast switching & smaller form factor Low service costs based on increased lifetime (cooler system) to reduce costs of operation failures Flexible system costs by cost variations related to product construction (topology) <p>Smart performance increases</p> <ul style="list-style-type: none"> Improved end product quality Improved end product reliability Increased demand and market share |

Dual side cooling

Using the new DSOP dual-side cooling package shows the same footprint as the SOP-Advanced. Due to the strongly reduced thermal resistance, the maximum load can be increased considerably. Alternatively the MOSFET temperature can be reduced to increase long term reliability.



| V_{DSS} (V) | $R_{DS(ON)}$ In mΩ | TO-220SIS | TO-220 | D2-PAK (TO-263) | SOP Advance 5x6mm | NEW DSOP Advance 5x6mm | TSON Advance 3x3mm | DPAK |
|------------------|-----------------------|---|--|------------------------------|--|-------------------------------------|--|--------------|
| 30 | 10-20 | | | | TPH11003NL | | TPN11003NL | |
| | 5-10 | | | | TPH8R903NL TPH6R003NL | | TPN8R903NL TPN6R003NL TPN6R303NC TPN5R203PL** | |
| | 3-5 | | | | TPH4R003NL TPH3R203NL | | TPN4R203NC TPN4R303NL | |
| | 1-3 | | | | TPH3R003PL** TPH2R903PL** TPH2R003PL** TPH1R403NL | | TPN2R203NC TPN2R503NC TPN2R703NL TPN2R903PL** | |
| | <1 | | | | TPHR9003NL TPHR9203PL** TPHR6503PL** | TPWR8503NL TPWR6003PL** | TPN1R603PL** | |
| 40 | 5-10 | | | | TPH7R204PL** TPH6R004PL** | | TPN7R504PL** | |
| | 3-5 | TK3R1A04PL** | TK3R1E04PL** | | TPH3R704PL** | | TPN3R704PL** | TK3R1P04PL** |
| | <3 | | | TK1R5R04PB** TK1R4F04PB** | TPH2R104PL** TPH1R204PB** TPH1R204PL** | | TPN2R304PL** | |
| | <1 | | | TKR74F04PB** | TPHR8504PL** | TPWR8004PL** | | |
| 60 | 10-30 | TK30A06N1 TK40A06N1 | TK30E06N1 TK40E06N1 | | TPH14006NH TPH11006NL | | TPN22006NH TPN14006NH TPN11006NL TPN11006PL** | |
| | 6-10 | TK58A06N1 TK8R2A06PL** | TK58E06N1 TK8R2E06PL** | | TPH9R506PL** TPH7R506NH TPH7R006PL** | | TPN7R506NH TPN7R006PL** | TK6R7P06PL** |
| | 3-6 | TK5R3A06PL** TK4R3A06PL** | TK5R1E06PL** TK4R3E06PL** | | TPH5R906NH TPH3R506PL** | | TPN4R806PL** | TK4R4P06PL** |
| | 1-3 | TK100A06N1 TK3R3A06PL** | TK100E06N1 | | TPH2R306NH TPH2R506PL** TPH1R306PL** TPH1R306P1** | TPW1R306PL** | | |
| 75 | 1-3 | | | TPH2R608NH | TPW2R508NH | | | |
| 80 | 30-50 | | | | | | TPN30008NH | |
| | 10-20 | TK35A08N1 | TK35E08N1 | | TPH12008NH | | TPN13008NH | |
| | 5-10 | TK46A08N1 | TK46E08N1 | | TPH8R008NH | | | |
| | 3-5 | TK72A08N1 TK100A08N1 | TK72E08N1 TK100E08N1 | | TPH4R008NH | TPW4R008NH | | |
| 100 | 30-50 | | | | | | TPN3300ANH TPN1600ANH TPN1200APL** | TK110P10PL** |
| | 10-30 | TK22A10N1 TK110A10PL | TK22E10N1 TK110E10PL | | TPH1400ANH | | | |
| | 5-10 | TK34A10N1 TK40A10N1 TK7R4A10PL TK6R7A10PL | TK34E10N1 TK40E10N1 TK7R2E10PL TK6R4E10PL | TK60R10N1L | TPH8R80ANH TPH6R30ANL | | | TK7R7P10PL** |
| | 3-5 | TK65A10N1 TK4R1A10PL TK100A10N1 TK3R2A10PL | TK65E10N1 TK3R9E10PL TK100E10N1 | TK65G10N1 | TPH5R60APL** TPH4R50ANH TPH4R10ANL TPH3R70APL** | TPW4R50ANH TPW3R70APL** | | |
| | <3 | | TK2R9E10PL | TK160F10N1L* | | | | |
| 120 | 10-20 | TK32A12N1 | TK32E12N1 | | | | | |
| | 5-10 | TK42A12N1 TK56A12N1 | TK42E12N1 TK56E12N1 | | | | | |
| | 3-5 | TK72A12N1 | TK72E12N1 | | | | | |
| 150 | 50-100 | | | | TPH5900CNH | | TPN5900CNH | |
| | 20-50 | | | | TPH3300CNH | | | |
| | 10-20 | | | | TPH1500CNH | TPW1500CNH | | |
| 200 | 100-200 | | | | TPH1110ENH | | TPN1110ENH | |
| | 50-100 | | | | TPH6400ENH | | | |
| 250 | 20-50 | | | | TPH2900ENH | TPW2900ENH | | |
| | 200-300 | | | | TPH2010FNH | | TPN2010FNH | |
| | 100-200 | | | | TPH1110FNH | | | |
| | 50-100 | | | | TPH5200FNH | TPW5200FNH | | |