

Introduction of Semi-power & small-size low RON MOSFET

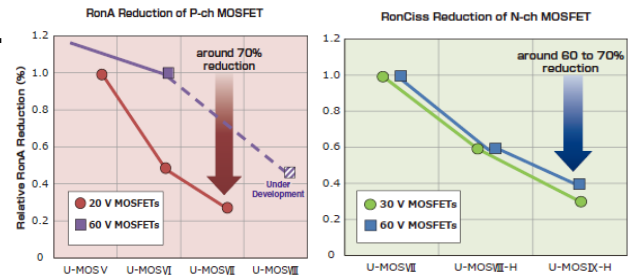
Expanding lineup of semi-power and small-size MOSFET with low RON

Toshiba uses cutting-edge technology to achieve low RON characteristics, and packages are available in industry standard 2x2 mm and 2.9x2.4 mm sizes.

It contributes to the low power consumption and downsizing required for battery-powered devices such as smartphones and wearable devices.

The low RON characteristic contributes to reducing the burden on heat dissipation design.

Toshiba uses advanced trench process technology to miniaturize its cell structure to achieve a low RON characteristic. The latest-generation trench processes U-MOS VII and U-MOS IX succeeded in reducing on-resistance per unit area by up to 70 % compared to the previous-generation processes. This improvement is effective in reducing conduction loss.



Contributing to energy savings in low loss load switch applications

Low loss and compact semiconductor devices are essential in order to reduce power consumption of power supply system such as rapid charge and USB PD as typified by mobile devices and power supply systems in the sets themselves. SSM6K513NU, a MOSFET using Toshiba's U-MOS IX process, achieves excellent low on-resistance characteristics and helps reduce temperature rise due to conduction loss.

Features

- Low on-resistance: 12 ~ 198 mΩ @4.5 V
- Wide voltage rating Lineup: V_{DS} = -30 ~ 100 V

• MOSFET selection table

[N-Channel MOSFETs]

| Part number | Product summary | Package | V _{DS} (V) | V _{GSS} (V) | I _D (A) | RON max (mΩ) | | Ciss (pF) | Buy Online |
|----------------------------|------------------------------|----------------------|---------------------|----------------------|--------------------|--------------|----------------------|-----------|----------------------------|
| | | | | | | 1.8V | 4.5V | | |
| SSM6K513NU | MOSFET N-CH 30V/15A UDFN6B | UDFN6B (2.0x2.0mm) | 30 | ±20 | 15 | - | 12 | 1130 | Buy Online |
| SSM6K514NU | MOSFET N-CH 40V/12A UDFN6B | UDFN6B (2.0x2.0mm) | 40 | ±20 | 12 | - | 17.3 | 1110 | Buy Online |
| SSM6K341NU | MOSFET N-CH 60V/6A UDFN6B | UDFN6B (2.0x2.0mm) | 60 | ±20 | 6 | - | 51 | 550 | Buy Online |
| SSM6K361NU | MOSFET N-CH 100V/3.5A UDFN6B | UDFN6B (2.0x2.0mm) | 100 | ±20 | 3.5 | - | 92 | 430 | Buy Online |
| SSM6K387NU | MOSFET N-CH 100V/2A UDFN6B | UDFN6B (2.0x2.0mm) | 100 | ±20 | 2 | - | 198 | 242 | Buy Online |
| SSM6K517NU | MOSFET N-CH 30V/6A UDFN6B | UDFN6B (2.0x2.0mm) | 30 | +12/-8 | 6 | 82 | 39 | 310 | Buy Online |
| SSM6K518NU | MOSFET N-CH 20V/6A UDFN6B | UDFN6B (2.0x2.0mm) | 20 | +8/-6 | 6 | 74 | 33 | 410 | Buy Online |
| SSM6N67NU | MOSFET 2N-CH 30V/4A UDFN6 | UDFN6 (2.0x2.0mm) | 30 | +12/-8 | 4 | - | 39.1 | 310 | Buy Online |
| SSM3K333R | MOSFET N-CH 30V/6A SOT-23F | SOT-23F (2.9x2.4mm) | 30 | ±20 | 6 | - | 42 | 436 | Buy Online |
| SSM3K345R | MOSFET N-CH 20V/4A SOT-23F | SOT-23F (2.9x2.4mm) | 20 | ±8 | 4 | 74 | 33 | 410 | Buy Online |
| SSM3K389R | MOSFET N-CH 60V/2A SOT-23F | SOT-23F (2.9x2.4mm) | 60 | ±20 | 2 | - | 200 | 156 | Buy Online |
| SSM3K388R | MOSFET N-CH 60V/2A SOT-23F | SOT-23F (2.9x2.4mm) | 60 | ±20 | 2 | - | 99 | 315 | Buy Online |
| SSM10N961L | N-CH Common drain FET 30V/9A | TCSPAG (3.37x1.47mm) | 30 ^{(*)1} | ±20 | 9 | - | 17.6 ^{(*)2} | - | Buy Online |

(*1) Source – source voltage, (*2) Source – source on-resistance

[P-Channel MOSFETs]

| Part number | Product summary | Package | V _{DS} (V) | V _{GSS} (V) | I _D (A) | RON max (mΩ) | | Ciss (pF) | Buy Online |
|----------------------------|----------------------------|---------------------|---------------------|----------------------|--------------------|--------------|------|-----------|----------------------------|
| | | | | | | 1.5V | 4.5V | | |
| SSM6J511NU | MOSFET P-CH 12V/14A UDFN6B | UDFN6B (2.0x2.0mm) | -12 | ±10 | -14 | - | 10 | 3350 | Buy Online |
| SSM6J507NU | MOSFET P-CH 30V/10A UDFN6B | UDFN6B (2.0x2.0mm) | -30 | +20/-25 | -10 | - | 28 | 1150 | Buy Online |
| SSM6P69NU | MOSFET 2P-CH 20V/4A UDFN6 | UDFN6 (2.0x2.0mm) | -20 | +6/-12 | -4 | - | 56 | 480 | Buy Online |
| SSM3J374R | MOSFET P-CH 30V/4A SOT-23F | SOT-23F (2.9x2.4mm) | -30 | +10/-20 | -4 | - | 105 | 1400 | Buy Online |
| SSM3J378R | MOSFET P-CH 20V/6A SOT-23F | SOT-23F (2.9x2.4mm) | -20 | +6/-8 | -6 | 88.4 | 29.8 | 560 | Buy Online |



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