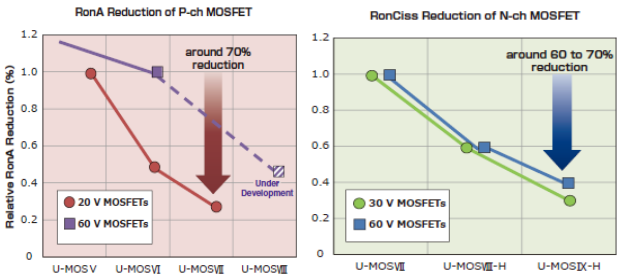
Introduction of Semi-power & small-size low RON MOSFET

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 Ⅷ 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: VDSS = -30 ~ 100 V

・MOSFET selection table

[N-Channel MOSFETs]

Part number	Product summary	Package	VDSS (V)	VGSS (V)	ID (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	
SSM6K514NU	MOSFET N-CH 40V/12A UDFN6B	UDFN6B (2.0x2.0mm)	40	±20	12	-	17.3	1110	
SSM6K341NU	MOSFET N-CH 60V/6A UDFN6B	UDFN6B (2.0x2.0mm)	60	±20	6	-	51	550	
SSM6K361NU	MOSFET N-CH 100V/3.5A UDFN6B	UDFN6B (2.0x2.0mm)	100	±20	3.5	-	92	430	
SSM6K387NU	MOSFET N-CH 100V/2A UDFN6B	UDFN6B (2.0x2.0mm)	100	±20	2	-	198	242	
SSM6K517NU	MOSFET N-CH 30V/6A UDFN6B	UDFN6B (2.0x2.0mm)	30	+12/-8	6	82	39	310	
SSM6K518NU	MOSFET N-CH 20V/6A UDFN6B	UDFN6B (2.0x2.0mm)	20	+8/-6	6	74	33	410	
SSM6N67NU	MOSFET 2N-CH 30V/4A UDFN6	UDFN6 (2.0x2.0mm)	30	+12/-8	4	-	39.1	310	
SSM3K333R	MOSFET N-CH 30V/6A SOT-23F	SOT-23F (2.9x2.4mm)	30	±20	6	-	42	436	
SSM3K345R	MOSFET N-CH 20V/4A SOT-23F	SOT-23F (2.9x2.4mm)	20	±8	4	74	33	410	
SSM10N961L	N-CH Common drain FET 30V/9A	TCSPAG (3.37x1.47mm)	30(*1)	±20	9	-	17.6(*2)	-	

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

[P-Channel MOSFETs]

Part number	Product summary	Package	VDSS (V)	VGSS (V)	ID (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	
SSM6J507NU	MOSFET P-CH 30V/10A UDFN6B	UDFN6B (2.0x2.0mm)	-30	+20/-25	-10	-	28	1150	
SSM6P69NU	MOSFET 2P-CH 20V/4A UDFN6	UDFN6 (2.0x2.0mm)	-20	+6/-12	-4	-	56	480	
SSM3J374R	MOSFET P-CH 30V/4A SOT-23F	SOT-23F (2.9x2.4mm)	-30	+10/-20	-4	-	105	1400	
SSM3J378R	MOSFET P-CH 20V/6A SOT-23F	SOT-23F (2.9x2.4mm)	-20	+6/-8	-6	88.4	29.8	560	

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