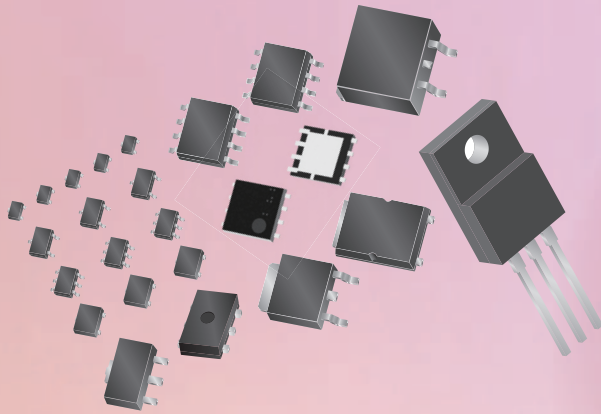


Product Catalog



MOSFETs

Discrete Semiconductors

2007-Dec.

Excellence in Electronics



www.rohm.com

ROHM MOSFETs

In the society these days, MOSFET is getting rapidly popular as a key-device in many applications, such as mobile phones and automotive electronics.

ROHM will keep developing new devices exactly following the market needs, paying attention to “Downsizing, Energy-saving and High-power” as keywords.

NEW

●Low Voltage 1.5V Drive MOSFETs **ECOMOS™series**

Compact switches are increasingly moving towards low voltage drive. This series responds to those needs.



P.5

●Complex MOSFETs for Mobile Device Power

These MOSFETs combine a low ON-resistance MOSFET with a Schottky barrier diode in a single compact, thin package, reducing the amount of space required.



P.6

NEW

●MPT6 Package Dual MOSFETs

This high-power series features the same package power as conventional SOP8 units, but in a package 40% smaller.



P.7

●MOSFETs for High Efficiency DC/DC Converters

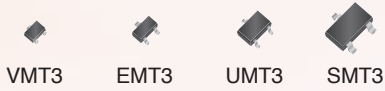
This high performance series uses the latest in element / packaging technology to provide high power supply efficiency to DC/DC converters.



P.8

●Small Signal MOSFETs

This series is optimized for compact (1208 to 2916 size), small current (up to 0.5A) applications.



P.11

●Middle Power MOSFETs

This versatile series meets the demand for reduced mounting space while maintaining a certain current level.



P.12

●Power MOSFETs

This series is ideal for large current applications (up to 15A) requiring high voltage resistance (600V max.).



P.13,14

NEW

●High-speed Switching High Voltage Resistance MOSFETs

This high performance, high speed switching series reduces switching loss by 30% compared to conventional products. (500 to 600V)



P.10

NEW

●TCPT Package MOSFETs

High-power series ;
The same mounting space as the one for conventional CPT3 package : yet more current is applicable.



P.9

Highlight

MOSFET Lineup

Low Voltage 1.5V Drive MOSFETs

Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)			Page
						Vgs=1.5V	Vgs=2.5V	Vgs=4.5V	
VMT3	0.15	Nch	New RUM003N02	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	P.5
EMT3	0.15	Nch	New RUE003N02	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	
EMT6	0.15	Nch+Nch	New EM6K6	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	
TUMT3	0.8	Nch	New RUF015N02	20	1.5	220 ^{*1}	170	130	
			New RUF025N02	20	2.5	80	49	39	
TUMT6	1	Pch	☆ RZF030P01	-12	-3	72	39	28	
		Nch	New RUL035N02	20	3.5	66	38	31	
		Pch	☆ RZL035P01	-12	-3.5	66	36	26	
TSMT3	1	Nch+Nch	New US6K4	20	1.5	220 ^{*1}	170	130	
		Nch	New RUR040N02	20	4	55	33	25	
TSMT6	1.25	Pch	☆ RZR040P01	-12	-4	55	30	22	
		Nch	New RUQ050N02	20	5	40	27	22	
		Pch	☆ RZQ050P01	-12	-5	44	26	19	

☆ : Under Development

*1 Vgs=1.8V

*2 Vgs=4V

Complex MOSFETs for Mobile Device Power

Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)						Qg(nC) Vgs=4.5V	Page
						Vgs=1.5V	Vgs=1.8V	Vgs=2.5V	Vgs=4V	Vgs=4.5V	Vgs=10V		
TSMT5	1.25	Nch+SBD(1A)	QS5U12	30	2	-	-	110	76	71	-	2.8	P.6
			QS5U17	30	2	-	-	110	76	71	-	2.8	
		Nch+SBD(0.5A)	QS5U13	30	2	-	-	110	76	71	-	2.8	
			QS5U16	30	2	-	-	110	76	71	-	2.8	
		Nch+SBD(0.7A)	New QS5U34	20	1.5	-	220	170	-	130	-	1.8	
			New QS5U36	20	2.5	120	95	74	-	58	-	3.5	
		Pch+SBD(1A)	QS5U21	-20	-1.5	-	-	260	180	160	-	4.2	
			QS5U27	-20	-1.5	-	-	260	180	160	-	4.2	
			QS5U28	-20	-2	-	-	175	97	90	-	4.8	
			New QS5U33	-30	-2	-	-	-	160	145	95	3.4 [*]	
		Pch+SBD(0.5A)	QS5U23	-20	-1.5	-	-	260	180	160	-	4.2	
			QS5U26	-20	-1.5	-	-	260	180	160	-	4.2	
TSMT6	1.25	Pch+SBD(0.5A)	QS6U22	-20	-1.5	-	-	310	170	155	-	3.0	
			QS6U24	-30	-1	-	-	-	600	500	300	1.7 [*]	
TUMT5	1	Nch+SBD(0.7A)	US5U3	30	1.5	-	-	240	180	170	-	1.6	
			US5U1	30	1.5	-	-	240	180	170	-	1.6	
		Nch+SBD(0.5A)	US5U2	30	1.4	-	-	-	270	250	170	1.4 [*]	
			US5U30	-20	-1	-	-	570	310	280	-	2.1	
		Pch+SBD(0.7A)	New US5U38	-20	-1	-	-	570	310	280	-	2.1	
		Pch+SBD(0.1A)	New US5U35	-45	-0.7	-	-	-	1000	900	600	1.7 [*]	
TUMT6	1	Nch+SBD(0.7A)	New US6U37	30	1.5	-	-	240	180	170	-	1.6	

*Vgs=5V

MPT6 Package Dual MOSFETs										
Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)			Qg(nC) VGS=5V	Page
						VGS=4V	VGS=4.5V	VGS=10V		
MPT6	2.0	Nch+Nch	New MP6K61	30	5	55	50	36	4.0	P.7
			New MP6K62	30	6	33	30	24	7.6	
			☆ MP6K65	30	3.5	105	95	73	2.0	
		Nch+Pch	New MP6M63	30	5	55	50	36	4.0	
				-30	-4.5	60	55	40	8.4	
			☆ MP6M62	30	3.5	105	95	73	2.0	
	-30	-3.5	115	103	73	4.6				

☆ : Under Development

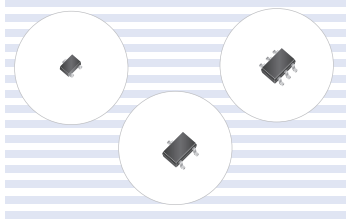
MOSFETs for High Efficiency DC/DC Converters												
Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)				Qg(nC) VGS=5V	Qgd (nC)	Page
						VGS=2.5V	VGS=4V	VGS=4.5V	VGS=10V			
PSOP8S	2.8	Nch	RQA130N03	30	13	-	13.2	12.2	9.0	12.6	3.7	P.8
			RQA180N03	30	18	-	5.8	5.5	4.1	30	6.4	
			RQA200N03	30	20	-	4.2	4.0	3.0	40	7.5	
PSOP8	3	Nch	RQW130N03	30	13	-	13.2	12.2	9.0	12.6	3.7	
			RQW180N03	30	18	-	5.8	5.5	4.1	30	6.4	
			RQW200N03	30	20	-	4.2	4.0	3.0	40	7.5	
	2.6	Nch	RTW060N03	30	6	38	27	25	-	8	2.6	

TCPT Package MOSFETs										
Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)			Qg(nC) VGS=5V	Page
						VGS=4V	VGS=4.5V	VGS=10V		
TCPT	20	Nch	☆ RSY200N05	45	20	28	25	20	12	P.9
			☆ RSY300N05	45	30	15	13	10	24	
		Pch	☆ RSY160P05	-45	-16	50	45	35	17	

☆ : Under Development

High-speed Switching High Voltage Resistance MOSFETs									
Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(Ω) VGS=10V	Qg(nC) VGS=10V	Page	
TO-220FM	40	Nch	New R5007ANX	500	7	0.8	13	P.10	
	50	Nch	New R5009ANX	500	9	0.55	21		
			New R5013ANX	500	13	0.29	35		
			New R5016ANX	500	16	0.21	50		
			New R6008ANX	600	8	0.6	21		
LPTS	40	Nch	New R5007ANJ	500	7	0.8	13	P.10	
	50	Nch	New R5009ANJ	500	9	0.55	21		
	100	Nch	New R5016ANJ	500	16	0.21	50		

ECOMOS™ Low Voltage 1.5V Drive MOSFETs



Features

Energy saving

Summary

The development of a new low voltage drive process has enabled operation at $V_{GS} = 1.5V$

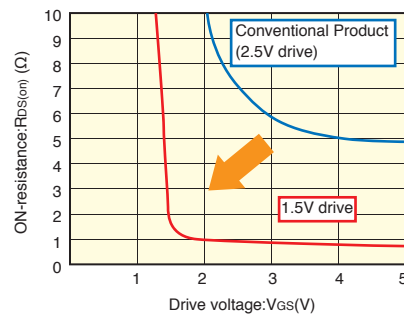
Applications

General load switch drives, LED lamp drives, Muting circuits, DC/DC converters, Switch for charger control, and the like.

Stable low voltage drive

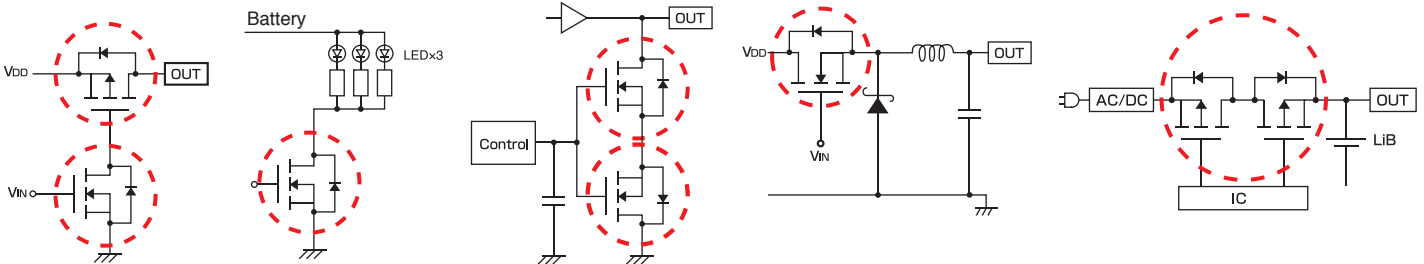
A new low-voltage drive process ensures stable operation at $V_{GS} = 1.5V$. ON-resistance is also significantly reduced compared to conventional 2.5V products, resulting in 20 to 85% less power consumption when ON.

ON-resistance comparison



Circuit example

- Load switch drive
- LED lamp driver
- Muting circuit
- DC/DC Converters
- Switch for charger control



Lineup

☆ : Under Development

Package	Pd(W)	Polarity	Part No.	Vbss(V)	Id(A)	Rds(on) Typ.(mΩ)			Internal Circuitry
						Vgs=1.5V	Vgs=2.5V	Vgs=4.5V	
VMT3	0.15	Nch	New RUM003N02	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	—
EMT3	0.15	Nch	New RUE003N02	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	—
EMT6	0.15	Nch+Nch	New EM6K6	20	0.3	1Ω ^{*1}	0.8Ω	0.7Ω ^{*2}	⑦
TUMT3	0.8	Nch	New RUF015N02	20	1.5	220 ^{*1}	170	130	—
			New RUF025N02	20	2.5	80	49	39	—
TUMT6	1	Nch	☆ RZF030P01	-12	-3	72	39	28	—
			New RUL035N02	20	3.5	66	38	31	—
		Nch+Nch	New US6K4	20	1.5	220 ^{*1}	170	130	⑦
TSMT3	1	Nch	New RUR040N02	20	4	55	33	23	—
		Pch	☆ RZR040P01	-12	-4	55	30	22	—
TSMT6	1.25	Nch	New RUQ050N02	20	5	40	27	22	—
		Pch	☆ RZQ050P01	-12	-5	44	26	19	—

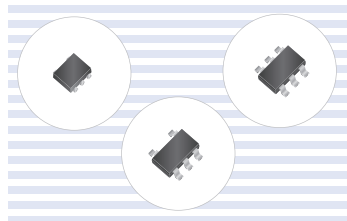
Note) Please see p.17 for the internal circuitry

*1 VGS=1.8V

*2 VGS=4V

Complex MOSFETs for Mobile Device Power

QS5U, QS6U, US5U series



Features

Space saving

Summary

Delivers high power: 1.25W and 1.0W in mounting areas of 2.9 × 2.8 mm (QS5U, QS6U) and 2.0 × 2.1 mm (US5U), respectively.

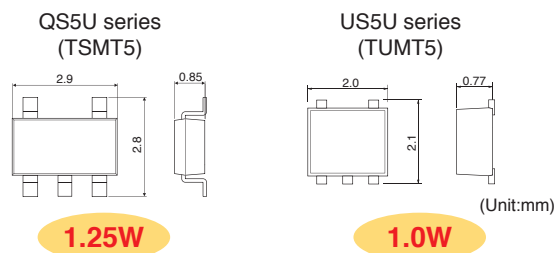
A low ON-resistance MOSFET and a Schottky barrier diode are integrated into a single package, reducing mounting area.

Applications

Mobile device
Power supplies

Excellent thermal conductivity

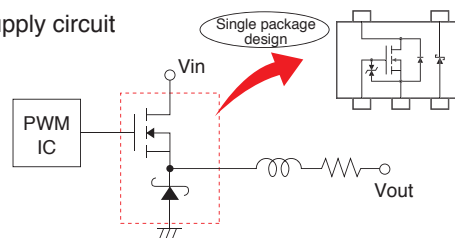
The frame shape and materials were modified to create a thin, compact package with excellent thermal conductivity (package power). The QS5U and QS6U series features a package power of 1.25W, while the US5U series delivers a power rating of 1.0W.



Reduces mounting space

Combining a low ON-resistance MOSFET with a Schottky barrier diode in one package reduces the number of parts in the mobile device power supply block, contributing to end-product miniaturization.

Power supply circuit



Lineup

Package	Pb(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{bs(on)} Typ.(mΩ)						Q _g (nC) V _{Gs} =4.5V	Internal Circuitry
						V _{Gs} =1.5V	V _{Gs} =1.8V	V _{Gs} =2.5V	V _{Gs} =4V	V _{Gs} =4.5V	V _{Gs} =10V		
TSMT5	1.25	Nch+SBD(1A)	QS5U12	30	2	-	-	110	76	71	-	2.8	①
			QS5U17	30	2	-	-	110	76	71	-	2.8	②
		Nch+SBD(0.5A)	QS5U13	30	2	-	-	110	76	71	-	2.8	①
			QS5U16	30	2	-	-	110	76	71	-	2.8	②
		Nch+SBD(0.7A)	New QS5U34	20	1.5	-	220	170	-	130	-	1.8	②
			New QS5U36	20	2.5	120	95	74	-	58	-	3.5	②
		Pch+SBD(1A)	QS5U21	-20	-1.5	-	-	260	180	160	-	4.2	④
			QS5U27	-20	-1.5	-	-	260	180	160	-	4.2	⑤
			QS5U28	-20	-2	-	-	175	97	90	-	4.8	⑤
			New QS5U33	-30	-2	-	-	-	160	145	95	3.4*	⑤
Pch+SBD(0.5A)	QS5U23	-20	-1.5	-	-	260	180	160	-	4.2	④		
	QS5U26	-20	-1.5	-	-	260	180	160	-	4.2	⑤		
TSMT6	1.25	Pch+SBD(0.5A)	QS6U22	-20	-1.5	-	-	310	170	155	-	3.0	⑥
			QS6U24	-30	-1	-	-	-	600	500	300	1.7*	⑥
TUMT5	1	Nch+SBD(0.7A)	US5U3	30	1.5	-	-	240	180	170	-	1.6	②
			US5U1	30	1.5	-	-	240	180	170	-	1.6	②
		Nch+SBD(0.5A)	US5U2	30	1.4	-	-	-	270	250	170	1.4*	②
			US5U30	-20	-1	-	-	570	310	280	-	2.1	⑤
		Pch+SBD(0.7A)	New US5U38	-20	-1	-	-	570	310	280	-	2.1	②
			New US5U35	-45	-0.7	-	-	-	1000	900	600	1.7*	②
TUMT6	1	Nch+SBD(0.7A)	New US6U37	30	1.5	-	-	240	180	170	-	1.6	③

Note) Please see p.17 for the internal circuitry.

*V_{Gs}=5V

MPT6 Package Dual MOSFETs

MP6K, MP6M series



Features

High power
Space saving
High performance

Summary

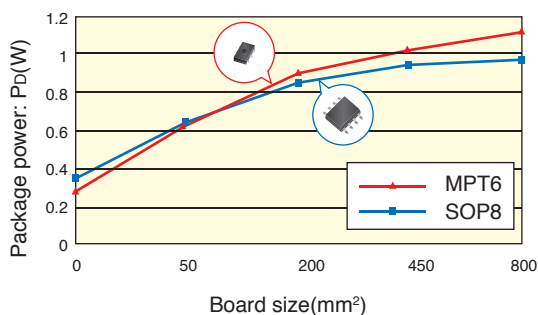
The frame pattern was optimized to create a compact package requiring 40% less mounting area while delivering the same package power as the conventional SOP8.

Applications

Power management circuit,
Motor drive circuit,
Amusement equipment

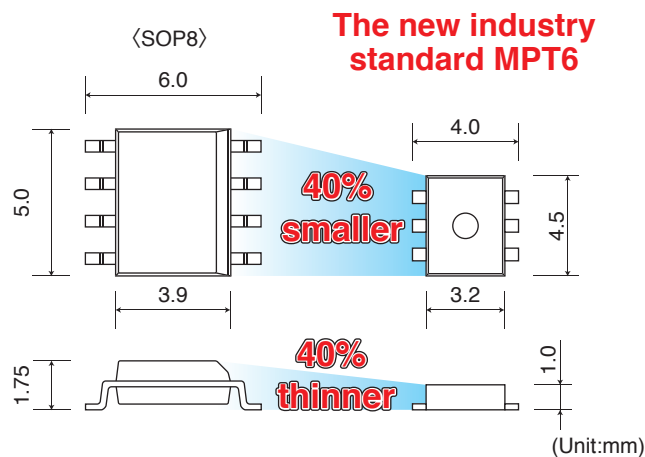
Excellent package power

Provides the same package power as the SOP8 (5060 size) in the 4540 size.

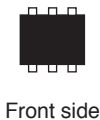


Space-saving, Thin, Low ON-resistance

Delivers the same low ON-resistance as the SOP8 (5060 size) in a package 40% smaller and 40% thinner.

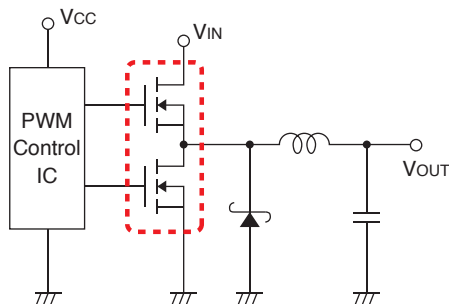


Outline

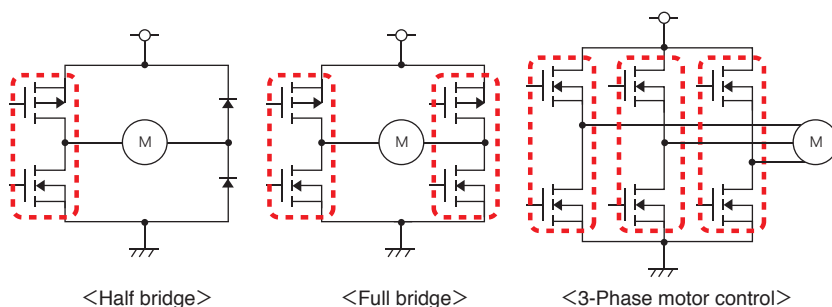


Circuit example

DC/DC Converters



Motor drive circuit



Lineup

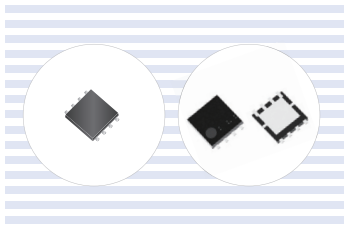
☆ : Under Development

Package	Pb(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{bs(on)} Typ.(mΩ)			Q _g (nC) V _{GS} =5V	Internal Circuitry
						V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V		
MPT6	2.0	Nch+Nch	New MP6K61	30	5	55	50	36	4.0	⑦
			New MP6K62	30	6	33	30	24	7.6	
			☆ MP6K65	30	3.5	105	95	73	2.0	
		Nch+Pch	New MP6M63	30	5	55	50	36	4.0	⑧
				-30	-4.5	60	55	40	8.4	
			☆ MP6M62	30	3.5	105	95	73	2.0	
				-30	-3.5	115	103	73	4.6	

Note) Please see p.17 for the internal circuitry

MOSFETs for High Efficiency DC/DC Converters

RQA, RQW series



Features

High power
Energy saving
High performance

Summary

Excellent element and package characteristics make this series ideal for optimizing the efficiency of DC/DC converters.

Applications

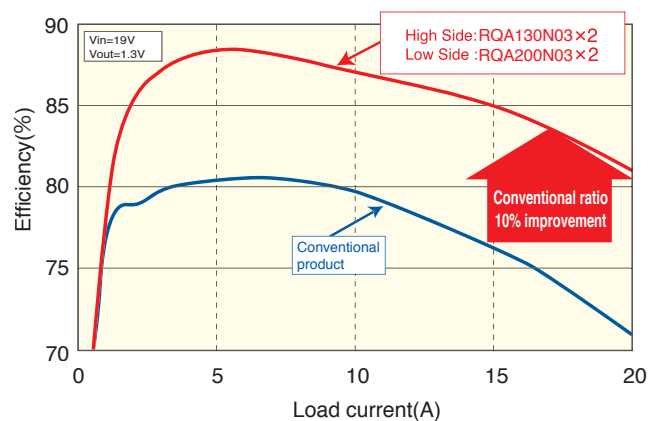
DC/DC converter

Superior power supply efficiency

The element and package are optimized for DC/DC converters.

Specially designed low ON-resistance / fast switching elements are encapsulated in high-power PSOP8S and PSOP8 packages that have the same mounting area as SOP8 package but can handle 40% or greater package power. Also, power supply efficiency is dramatically improved, which contributes to low-current drive (energy-saving) of electric appliances.

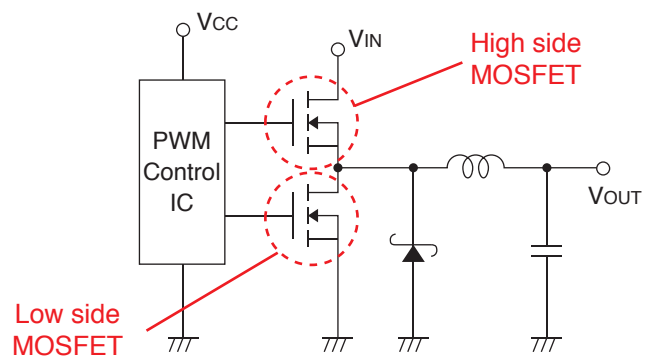
DC/DC converter power supply efficiency ratings



Circuit example

The RQA series delivers maximum performance when used with RQW series in pairs as high-side and low-side switching devices in the large-current DC/DC converter.

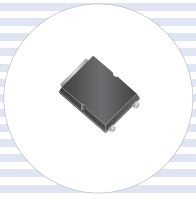
DC/DC converter circuit



Lineup

Package	Pd(W)	Polarity	Part No.	Vdss(V)	Id(A)	Rds(on) Typ.(mΩ)				Qg(nC) Vgs=5V	Qgd (nC)
						Vgs=2.5V	Vgs=4V	Vgs=4.5V	Vgs=10V		
PSOP8S	2.8	Nch	RQA130N03	30	13	—	13.2	12.2	9.0	12.6	3.7
			RQA180N03	30	18	—	5.8	5.5	4.1	30	6.4
			RQA200N03	30	20	—	4.2	4.0	3.0	40	7.5
PSOP8	3	Nch	RQW130N03	30	13	—	13.2	12.2	9.0	12.6	3.7
			RQW180N03	30	18	—	5.8	5.5	4.1	30	6.4
			RQW200N03	30	20	—	4.2	4.0	3.0	40	7.5
	2.6	Nch	RTW060N03	30	6	38	27	25	—	8	2.6

TCPT Package MOSFETs



Features

Thin
High power

Summary

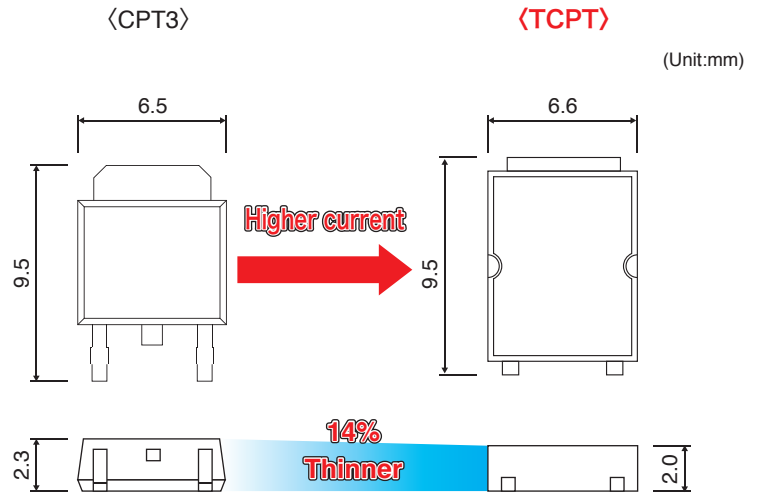
The same mounting space as the one for conventional CPT3 package : yet more current is applicable.

Applications

LCD backlight inverters
Motor drive circuit

High power, Thin

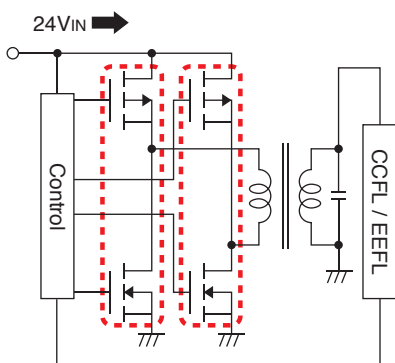
Improvement of heat-radiation efficiency has enable higher current intake with the same mounting space as the one for conventional CPT3 package.



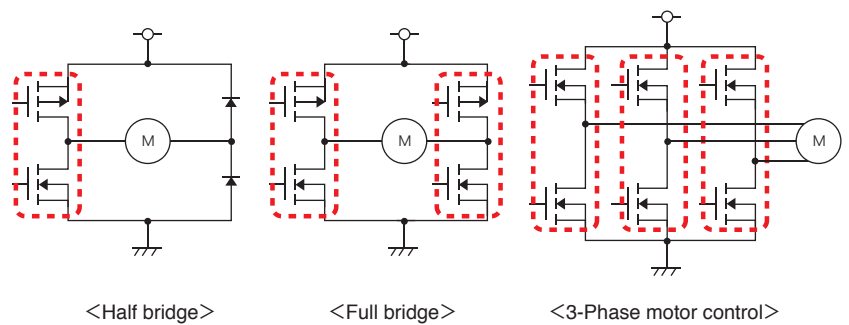
Circuit example

Controlling heat emission is a major challenge with large LCDs. The high power TCPT package helps reduce heat dissipation in the backlight inverter circuit.

■ LCD backlight inverter circuit



■ Motor drive circuit

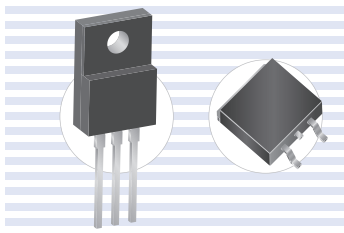


Lineup

☆ : Under Development

Package	Pd(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{ds(on)} Typ.(mΩ)			Q _g (nC) V _{GS} =5V
						V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V	
TCPT	20	Nch	☆ RSY200N05	45	20	28	25	20	12
			☆ RSY300N05	45	30	15	13	10	24
		Pch	☆ RSY160P05	-45	-16	50	45	35	17

High-speed Switching High Voltage Resistance MOSFETs



Features

High power
Energy saving
High performance

Summary

This high-performance series was developed using a new high voltage resistance process that enables fast switching and low ON-resistance.

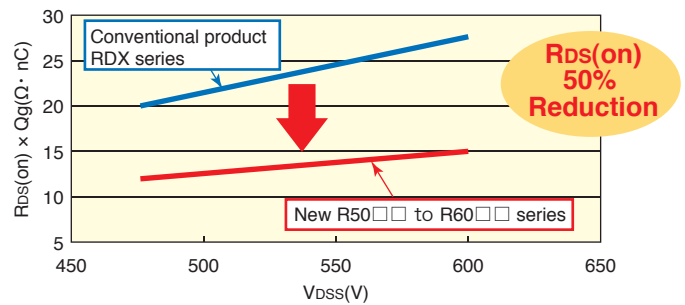
Applications

Switching power supplies

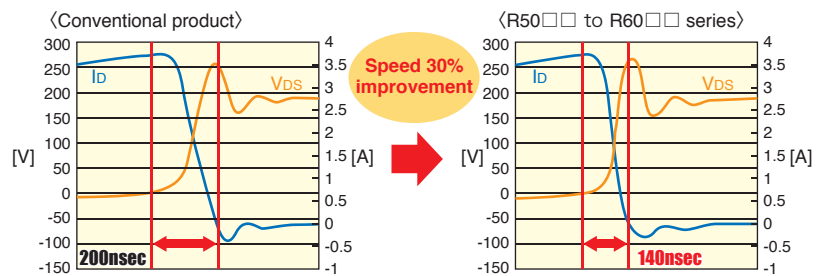
High-speed switching (Low switching loss)

A new low ON-resistance process reduces ON-resistance by 50% over conventional units, significantly improving switching speed (by 30%) while reducing switching loss. The lineup is available in two different power packages, TO-220FM and LPTS, featuring lower heat emission.

ON-resistance comparison



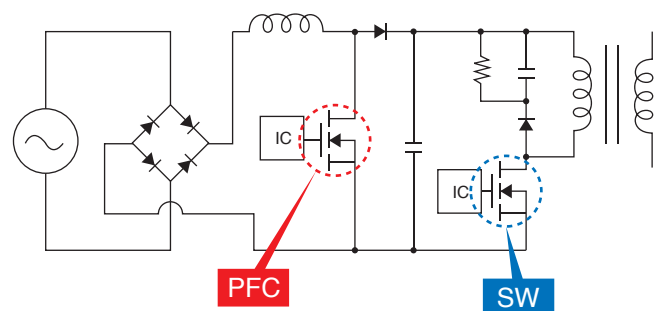
Switching speed comparison



Circuit example

Ideal for use in the PFC block, requiring low ON-resistance, and in switching (SW) circuits in the switching power supply, where switching speed is of critical importance.

Switching power supply circuit (Primary)



Lineup

Package	P _D (W)	Polarity	Part No.	V _{ds} (V)	I _d (A)	R _{ds(on)} Typ.(Ω) V _{GS} =10V	Q _g (nC) V _{GS} =10V
TO-220FM	40	Nch	New R5007ANX	500	7	0.8	13
			New R5009ANX	500	9	0.55	21
	50	Nch	New R5013ANX	500	13	0.29	35
			New R5016ANX	500	16	0.21	50
			New R6008ANX	600	8	0.6	21
LPTS	40	Nch	New R5007ANJ	500	7	0.8	13
	50	Nch	New R5009ANJ	500	9	0.55	21
	100	Nch	New R5016ANJ	500	16	0.21	50

Small Signal MOSFETs									
Package	Pd(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{DS(on)} Typ.(Ω)			
						V _{GS} =2.5V	V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V
VMT3	0.15	Nch	2SK3541	30	0.1	7	5	–	–
		Pch	RTM002P02	–20	–0.2	2.0	1.1	1.0	–
			RSM002P03	–30	–0.2	–	1.6	1.4	0.9
EMT3	0.15	Nch	2SK3019B	30	0.01	14	7	–	5
			2SK3019	30	0.1	7	5	–	–
		Pch	RTE002P02	–20	–0.2	2.0	1.1	1.0	–
			RSE002P03	–30	–0.2	–	1.6	1.4	0.9
EMT5	0.15	Nch+Nch	EM5K5	30	0.3	0.8	0.7	0.6	–
EMT6	0.15	Nch+Nch	EM6K1	30	0.1	7	5	–	–
		Nch+Pch	EM6M1	30	0.1	7	5	–	–
				–20	–0.2	2	1.1	1	–
UMT3	0.2	Nch	2SK3018	30	0.1	7	5	–	–
			RJU003N03	30	0.3	1.4	0.9	0.8	–
			RHU003N03	30	0.3	–	1.4	1.2	0.8
			RJU002N06	60	0.2	2.2	1.7	1.6	–
			RHU002N06	60	0.2	–	2.8	–	1.7
		Pch	RTU002P02	–20	–0.25	2.0	1.1	1.0	–
			RSU002P03	–30	–0.25	–	1.6	1.4	0.9
UMT5	0.15	Nch+Nch	UM5K1N	30	0.1	7	5	–	–
UMT6	0.15	Nch+Nch	UM6K1N	30	0.1	7	5	–	–
SST3	0.2	Nch	RK7002	60	0.115	–	–	7.5 max.*	7.5 max.
			RK7002A	60	0.3	–	1.1	–	0.7
SMT3	0.2	Nch	2SK2731	30	0.2	–	2.8	–	1.5
			RJK005N03	30	0.5	0.65	0.42	0.40	–
			RHK005N03	30	0.5	–	0.6	0.51	0.35
			RHK003N06	60	0.3	–	1.1	–	0.7
SMT6	0.2	Nch+Nch	SM6K2	60	0.2	–	2.8	–	1.7

* V_{GS}=5V

Middle Power MOSFETs											
Package	Pd(W)	polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{DS(on)} Typ.(mΩ)				Q _g (nC) V _{GS} =4.5V	
						V _{GS} =2.5V	V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V		
TUMT3	0.8	Nch	RTF015N03	30	1.5	240	180	170	—	1.6	
			RTF025N03	30	2.5	70	50	48	—	3.7	
			RSF014N03	30	1.4	—	270	250	170	1.4 *	
		Pch	RTF010P02	-20	-1	570	310	280	—	2.1	
			RTF015P02	-20	-1.5	180	110	100	—	5.2	
			RTF020P02	-20	-2	120	65	60	—	7	
			RSF010P03	-30	-1	—	450	400	250	1.9 *	
TUMT6	1	Nch	RTL035N03	30	3.5	56	42	40	—	4.6	
		Nch+Nch	US6K1	30	1.5	240	180	170	—	1.6	
			US6K2	30	1.4	—	270	250	170	1.4 *	
		Pch	RTL020P02	-20	-2	180	110	100	—	4.9	
			RTL030P02	-20	-3	90	55	50	—	8.0	
			RSL020P03	-30	-2	—	140	125	80	3.9 *	
		Pch+Pch	US6J2	-20	-1	570	310	280	—	2.1	
		Nch+Pch	US6M2	30	1.5	240	180	170	—	1.6	
				-20	-1	570	310	280	—	2.1	
			US6M1	30	1.4	—	270	250	170	1.4 *	
				-20	1	570	310	280	—	2.1	
TSMT3	1	Nch	RTR025N03	30	2.5	95	70	66	—	3.3	
			RTR040N03	30	4	47	36	34	—	5.9	
			RSR025N03	30	2.5	—	83	74	50	2.9 *	
			RTR020N05	45	2	180	135	130	—	2.9	
		Pch	RTR011P02	-20	-1.1	570	310	280	—	2.0	
			RTR020P02	-20	-2	180	110	100	—	4.9	
			RTR025P02	-20	-2.5	115	75	70	—	7	
			RTR030P02	-20	-3	90	60	55	—	9.3	
			RSR015P03	-30	-1.5	—	320	270	170	2.6 *	
			RSR020P03	-30	-2	—	150	135	85	4.3 *	
			RSR025P03	-30	-2.5	—	115	100	70	5.4 *	
TSMT5	1.25	Nch+Nch	QS5K2	30	2	110	76	71	—	2.8	
TSMT6	1.25	Nch	RTQ020N03	30	2	138	94	89	—	2.4	
			RTQ035N03	30	3.5	55	40	38	—	4.6	
			RTQ045N03	30	4.5	42	32	30	—	7.6	
			RSQ020N03	30	2	—	168	148	96	2.2 *	
			RSQ035N03	30	3.5	—	67	60	44	5.3 *	
			RSQ045N03	30	4.5	—	40	36	27	6.8 *	
		RVQ040N05	45	4	—	53	47	38	6.3		
		Nch+Nch	QS6K1	30	1	260	180	170	—	1.7	
		Pch	RTQ025P02	-20	-2.5	140	80	72	—	6.4	
			RTQ030P02	-20	-3	110	65	60	—	9.0	
			RTQ035P02	-20	-3.5	80	55	50	—	10.5	
			RTQ040P02	-20	-4	60	40	35	—	12.2	
	RSQ025P03		-30	-2.5	—	145	120	80	4.4 *		
	RSQ030P03		-30	-3	—	100	90	60	6.0 *		
				RSQ035P03	-30	-3.5	—	70	65	45	9.2 *
	Pch+Pch	QS6J1	-20	-1.5	310	170	155	—	3.0		
		QS6J3	-20	-1.5	310	170	155	—	3.0		
	Nch+Pch	QS6M3	30	1.5	260	180	170	—	1.6		
-20			-1.5	310	170	155	—	3.0			
QS6M4		30	1.5	260	180	170	—	1.6			
		-20	-1.5	310	170	155	—	3.0			
MPT3	2.0	Nch	RJP020N06	60	2	210	170	165	—	—	
			RHP030N03	30	3	—	160	—	90	—	
			RHP020N06	60	2	—	240	200	150	—	

*1:When mounted on a ceramic board.

*V_{GS}=5V

Power MOSFETs (SOP8)

Package	Pd(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{DS(on)} Typ.(mΩ)			Q _g (nC) V _{GS} =5V
						V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V	
SOP8	2.0	Nch	RSS065N03	30	6.5	30	27	19	6.1
			RSS090N03	30	9	17	15	11	11
			RSS100N03	30	10	13.5	12.5	9.5	14
			RSS110N03	30	11	11.2	10.3	7.6	17
			RSS125N03	30	12.5	9.3	8.6	6.5	20
			RSS130N03	30	13	7.9	7.4	5.9	25
			New RRS070N03	30	7	28	26	20	7.7
			New RRS090N03	30	9	18	17	14	12
			New RRS100N03	30	10	15	14	11	16
			New RRS110N03	30	11	11.5	11	9	22
			New RRS125N03	30	12.5	9.8	9.2	7.5	27
			New RRS130N03	30	13	9	8.5	7	30
			RSS070N05	45	7	25	23	18	12
			RSS080N05	45	8	20	18	15	13
			RSS085N05	45	8.5	18	16	13	15.3
			RSS095N05	45	9.5	15	14	11	18.9
		New RSS065N06	60	6.5	31	28	24	11	
		Nch+Nch	SP8K5	30	3.5	107	93	59	2.5
			SP8K1	30	5	58	52	36	3.9
			SP8K2	30	6	33	30	21	7.2
			SP8K3	30	7	25	23	17	8.4
			SP8K4	30	9	17	16	12	15
			New SP8K63	30	7	27	25	20	8.5
			New SP8K64	30	9	18	17	14	15
			SP8K22	45	4.5	46	41	33	6.8
			SP8K23	45	5	36	33	26	8.6
			SP8K24	45	6	26	24	18	15.4
			New SP8K31	60	3.5	105	100	85	3.7
			New SP8K32	60	4.5	55	52	46	7
			New SP8K33	60	5	40	38	34	8
		Nch+Nch+SBD	SP8K10S	30	7	25	23	17	8.4
				30	8.5	19	17.8	14	8.9
		Pch	RSS040P03	-30	-4	78	68	42	8
			RSS050P03	-30	-5	55	47	30	13
			RSS075P03	-30	-7.5	25	22	15	30
			RSS090P03	-30	-9	17	15	10	39
			RSS060P05	-45	-6	38	35	26	23
			RSS070P05	-45	-7	28	25	19	34
		Pch+Pch	SP8J4	-30	-2	320	270	170	2.4
			SP8J3	-30	-3.5	120	100	65	5.5
SP8J2	-30		-4.5	65	57	40	8.5		
SP8J1	-30		-5	45	40	30	16		
SP8J5	-30		-7	30	25	20	25		

Power MOSFETs (SOP8)

Package	Pd(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{DS(on)} Typ. (Ω)			Q _g (nC) V _{GS} =5V
						V _{GS} =4V	V _{GS} =4.5V	V _{GS} =10V	
SOP8	2.0	Nch+Pch	SP8M2	30	3.5	107	93	59	2.5
				-30	-3.5	120	100	65	5.5
			SP8M3	30	5	58	52	36	3.9
				-30	-4.5	65	57	40	8.5
			SP8M4	30	9	17	16	12	15
				-30	-7	30	25	20	25
			SP8M5	30	6	33	30	21	7.2
				-30	-7	30	25	20	25
			SP8M6	30	5	58	52	36	3.9
				-30	-3.5	120	100	65	5.5
			SP8M8	30	6	33	30	21	7.2
				-30	-4.5	65	57	40	8.5
			SP8M10	30	7	25	23	17	8.4
				-30	-4.5	65	57	40	8.5
			SP8M21	45	6	26	24	18	15.4
				-45	-4	47	43	33	20
			SP8M24	45	4.5	46	41	33	6.8
				-45	-3.5	66	60	45	13
New SP8M41	80	3.4	120	110	90	6.6			
	-80	-2.6	230	220	165	8.2			
New SP8M70	250	3	-	-	1.25Ω	5.2*			
	-250	-2.5	-	-	2.2Ω	8*			

* V_{GS}=10V

Power MOSFETs (CPT3, TO-220FN, TO-220FM)

Package	Pd(W)	Polarity	Part No.	V _{DSS} (V)	I _D (A)	R _{DS(on)} Typ. (Ω)	
						V _{GS} =4V	V _{GS} =10V
CPT3	10	Nch	2SK2094	60	2	0.4	0.3
		Nch	2SK2503	60	5	0.17	0.11
	20	Nch	RK3055E	60	8	-	0.15 Max.
		Nch	2SK2504	100	5	0.25	0.18
		Nch	New RSD200N10	100	20	0.045	0.041
		Nch	RDD050N20	200	5	-	0.55
TO-220FN	30	Nch	RDN050N20	200	5	-	0.55
	35	Nch	RDN100N20	200	10	-	0.27
	40	Nch	RDN150N20	200	15	-	0.12
	35	Nch	RDN080N25	250	8	-	0.38
	40	Nch	RDN120N25	250	12	-	0.16
TO-220FM	35	Nch	RDX050N50	500	5	-	1.1
	40	Nch	RDX080N50	500	8	-	0.65
	45	Nch	RDX120N50	500	12	-	0.38
	30	Nch	RDX030N60	600	3	-	2.7
	35	Nch	RDX045N60	600	4.5	-	1.6
	40	Nch	RDX060N60	600	6	-	0.9
	45	Nch	RDX100N60	600	10	-	0.48

Dimensions

(Unit: mm)

Surface Mount Type	VMT3 (1) Gate (2) Source (3) Drain		
	EMT3 (SC-75A) <SOT-416> (1) Source (2) Gate (3) Drain	EMT5 Each lead has same dimensions	EMT6 Each lead has same dimensions
	UMT3 (SC-70) <SOT-323> (1) Source (2) Gate (3) Drain Each lead has same dimensions	UMT5 (SC-88A) <SOT-353> Each lead has same dimensions	UMT6 (SC-88) <SOT-363> Each lead has same dimensions
	TUMT3 (1) Gate (2) Source (3) Drain Each lead has same dimensions	TUMT5 Each lead has same dimensions	TUMT6 Each lead has same dimensions
	SMT3 (SC-59) <SOT-346> (1) Source (2) Gate (3) Drain Each lead has same dimensions		SMT6 (SC-74) <SOT-457> Each lead has same dimensions
	TSMT3 (1) Gate (2) Source (3) Drain Each lead has same dimensions	TSMT5 Each lead has same dimensions	TSMT6 Each lead has same dimensions
	SST3 <SOT-23> (1) Source (2) Gate (3) Drain Each lead has same dimensions	MPT3 (SC-62) <SOT-89> (1) Gate (2) Drain (3) Source	MPT6 Each lead has same dimensions
	SOP8 Each lead has same dimensions	PSOP8S Each lead has same dimensions	PSOP8 Each lead has same dimensions

Notes: 1) Characters in () under package designation denotes JEITA No. Characters in < > under package designation denotes JEDEC No. 2) For details of dimensions, please refer to the technical specifications.

(Unit : mm)

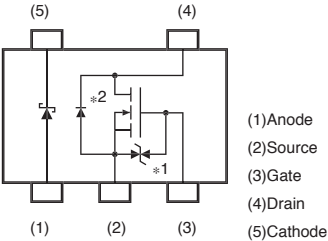
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Surface Mount Type</p>	<p>CPT3 (SC-63) (SOT-428)</p> <p>(1) Gate (2) Drain (3) Source</p>	<p>☆ TCPT</p> <p>(1) Gate (2) Drain (3) Source</p>	<p>LPTS</p> <p>(1) Gate (2) Drain (3) Source</p>
	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Leaded Type</p>	<p>TO-220FN</p> <p>(1) Gate (2) Drain (3) Source</p>	<p>TO-220FM</p> <p>(1) Gate (2) Drain (3) Source</p>

☆ : Under Development

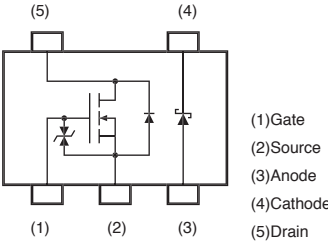
Internal Circuitry

■ MOSFET + SBD

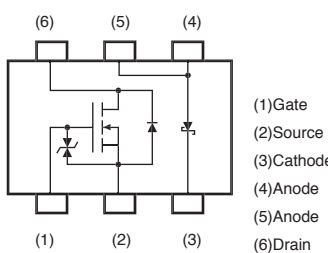
① Nch+SBD(A)



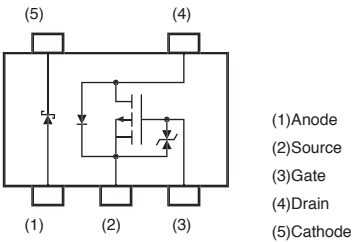
② Nch+SBD(B)



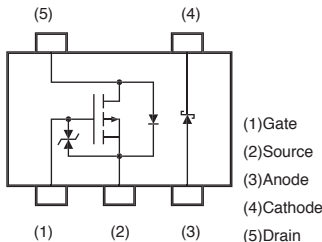
③ Nch+SBD(C)



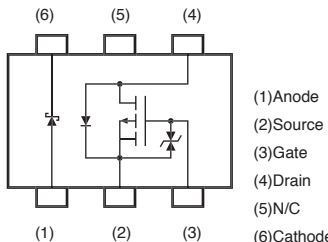
④ Pch+SBD(A)



⑤ Pch+SBD(B)

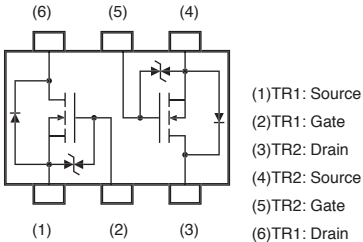


⑥ Pch+SBD(C)

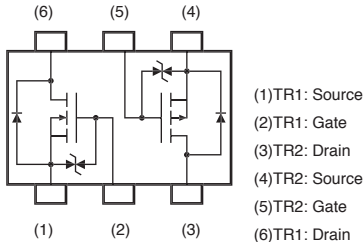


■ MOSFET Dual

⑦ Nch+Nch



⑧ Nch+Pch



*1:Static protection diode.

*2:Internal diode.

MEMO

- The contents described herein are correct as of 1st. December 2007.
- The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- The application circuit examples, information, and various data pertaining to the use of the products presented in this documentation are provided for reference purposes only. Please note that ROHM cannot bear any responsibility regarding any problems relating to industrial property rights resulting from their use thereof.

The products listed in this catalog are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys). Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Excellence in Electronics



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Atlanta	TEL: +1-770-754-5972	FAX: +1-770-754-0691	Hangzhou	TEL: +86-571-87658072	FAX: +86-571-87658071
Boston	TEL: +1-978-371-0382	FAX: +1-928-438-7164	Nanjing	TEL: +86-25-8689-0015	FAX: +86-25-8689-0393
Chicago	TEL: +1-847-368-1006	FAX: +1-847-368-1008	Ningbo	TEL: +86-574-87654201	FAX: +86-574-87654208
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Denver	TEL: +1-303-708-0908	FAX: +1-303-708-0858	Suzhou	TEL: +86-512-6807-1300	FAX: +86-512-6807-2300
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Nashville	TEL: +1-615-620-6700	FAX: +1-615-620-6702	Shenzhen	TEL: +86-755-8307-3008	FAX: +86-755-8307-3003
Mexico	TEL: +52-33-3123-2001	FAX: +52-33-3123-2002	Dongguan	TEL: +86-769-8393-3320	FAX: +86-769-8398-4140
Düsseldorf	TEL: +49-2154-9210	FAX: +49-2154-921400	Fuzhou	TEL: +86-591-8801-8698	FAX: +86-591-8801-8690
Munich	TEL: +49-8161-48310	FAX: +49-8161-483120	Guangzhou	TEL: +86-20-8364-9796	FAX: +86-20-8364-9707
Stuttgart	TEL: +49-711-72723710	FAX: +49-711-72723720	Huizhou	TEL: +86-752-205-1054	FAX: +86-752-205-1059
France	TEL: +33-1-5697-3060	FAX: +33-1-5697-3080	Xiamen	TEL: +86-592-238-5705	FAX: +86-592-239-8380
United Kingdom	TEL: +44-1-908-306700	FAX: +44-1-908-235788	Zhuhai	TEL: +86-756-3232-480	FAX: +86-756-3232-460
Denmark	TEL: +45-3694-4739	FAX: +45-3694-4789	Hong Kong	TEL: +852-2-740-6262	FAX: +852-2-375-8971
Barcelona	TEL: +34-9375-24320	FAX: +34-9375-24410	Taipei	TEL: +886-2-2500-6956	FAX: +886-2-2503-8869
Hungary	TEL: +36-1-4719338	FAX: +36-1-4719339	Kaohsiung	TEL: +886-7-237-0881	FAX: +886-7-238-7332
Poland	TEL: +48-22-5757213	FAX: +48-22-5757001	Singapore	TEL: +65-6332-2322	FAX: +65-6332-5662
Russia	TEL: +7-95-980-6755	FAX: +7-95-937-8290	Philippines	TEL: +63-2-807-6872	FAX: +63-2-809-1422
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