



## Compact (4540 size), High Power (2.0W) Dual MOSFETs MP6K/MP6M Series

### ● Description

The MP6K and MP6M series of Dual MOSFETs are available in a compact 4540 sized package featuring the same package power as the conventional SOP8, but in a form factor 40% smaller in area and 40% thinner, making them ideal for compact devices.

### ● Features

- 1) Compact, high power MPT6 package (4.5×4.0×1.0mm, 2.0W)
- 2) New ultra-miniature process technology ensures low ON-resistance
- 3) Large rated current (I<sub>D</sub>=6A Max.: MP6K62)

### ● Applications

Car navigation, portable DVD players, printers, notebook PCs, gaming consoles, and other thin, compact devices requiring power switches and/or motor drivers

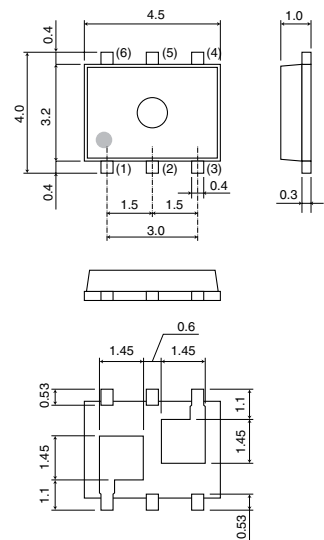
### ● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Part No.				Unit	
		MP6K61	MP6K62	MP6M63			
		It is the same ratings for the Tr1, Tr2		Tr1:Nch	Tr2:Pch		
Drain-Source Voltage	V <sub>DSS</sub>	30	30	30	-30	V	
Gate-Source Voltage	V <sub>GSS</sub>	20	20	20	-20	V	
Drain Current	DC	I <sub>D</sub>	±5.0	±6.0	±5.0	±4.5	A
	Pulsed	I <sub>D</sub> <sup>*1</sup>	±20	±24	±20	±18	A
Source Current (Internal Diode)	DC	I <sub>S</sub>	1.6	1.6	1.6	-1.6	A
	Pulsed	I <sub>SP</sub> <sup>*1</sup>	20	24	20	-18	A
Total Permissible Loss	P <sub>D</sub> <sup>*2</sup>		2.0	2.0	2.0		W / TOTAL
			1.4	1.4	1.4		W / ELEMENT
Channel Block Temperature	T <sub>ch</sub>	150	150	150		°C	
Storage Temperature Range	T <sub>stg</sub>	-55 to 150		-55 to 150		°C	

\*1 P<sub>w</sub> ≤ 10μs, Duty cycle ≤ 1%

\*2 Mounted on a ceramic board

### ● Dimensions (Unit: mm)



- 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.

Current specifications in effect of 1st. April 2007.

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## ● Electrical Characteristics (Ta=25°C)

### MP6K61

<Tr1 and Tr2 share the same characteristics>

Parameter	Symbol	Typ.	Unit	Conditions
Drain-Source ON-Resistance	$R_{DS(on)}$ *	40	mΩ	$I_D=5.0A, V_{GS}=10V$
		50	mΩ	$I_D=5.0A, V_{GS}=4.5V$
		55	mΩ	$I_D=5.0A, V_{GS}=4.0V$
Input Capacitance	$C_{iss}$	480	pF	$V_{DS}=10V$
Output Capacitance	$C_{oss}$	80	pF	$V_{GS}=0V$
Feedback Capacitance	$C_{rss}$	80	pF	$f=1MHz$
Total Gate Charge	$Q_g^*$	4.3	nC	$V_{DD} \approx 15V, V_{GS}=5V$
Gate-Source Charge	$Q_{gs}^*$	1.8	nC	$I_D=5A$
Gate-Drain Charge	$Q_{gd}^*$	1.8	nC	

\*Pulsed

### MP6K62

<Tr1 and Tr2 share the same characteristics>

Parameter	Symbol	Typ.	Unit	Conditions
Drain-Source ON-Resistance	$R_{DS(on)}$ *	27	mΩ	$I_D=6.0A, V_{GS}=10V$
		33	mΩ	$I_D=6.0A, V_{GS}=4.5V$
		36	mΩ	$I_D=6.0A, V_{GS}=4.0V$
Input Capacitance	$C_{iss}$	720	pF	$V_{DS}=10V$
Output Capacitance	$C_{oss}$	130	pF	$V_{GS}=0V$
Feedback Capacitance	$C_{rss}$	130	pF	$f=1MHz$
Total Gate Charge	$Q_g^*$	7.2	nC	$V_{DD} \approx 15V, V_{GS}=5V$
Gate-Source Charge	$Q_{gs}^*$	2.5	nC	$I_D=6.0A$
Gate-Drain Charge	$Q_{gd}^*$	2.5	nC	

\*Pulsed

### MP6M63

<Tr1 (Nch) Characteristics>

Parameter	Symbol	Typ.	Unit	Conditions
Drain-Source ON-Resistance	$R_{DS(on)}$ *	40	mΩ	$I_D=5.0A, V_{GS}=10V$
		50	mΩ	$I_D=5.0A, V_{GS}=4.5V$
		55	mΩ	$I_D=5.0A, V_{GS}=4.0V$
Input Capacitance	$C_{iss}$	480	pF	$V_{DS}=10V$
Output Capacitance	$C_{oss}$	80	pF	$V_{GS}=0V$
Feedback Capacitance	$C_{rss}$	80	pF	$f=1MHz$
Total Gate Charge	$Q_g^*$	4.3	nC	$V_{DD} \approx 15V, V_{GS}=5V$
Gate-Source Charge	$Q_{gs}^*$	1.8	nC	$I_D=5A$
Gate-Drain Charge	$Q_{gd}^*$	1.8	nC	

\*Pulsed

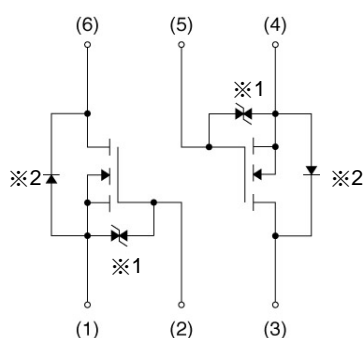
<Tr2 (Pch) Characteristics>

Parameter	Symbol	Typ.	Unit	Conditions
Drain-Source ON-Resistance	$R_{DS(on)}$ *	40	mΩ	$I_D=-4.5A, V_{GS}=-10V$
		57	mΩ	$I_D=-2.5A, V_{GS}=-4.5V$
		65	mΩ	$I_D=-2.5A, V_{GS}=-4.0V$
Input Capacitance	$C_{iss}$	850	pF	$V_{DS}=-10V$
Output Capacitance	$C_{oss}$	200	pF	$V_{GS}=0V$
Feedback Capacitance	$C_{rss}$	120	pF	$f=1MHz$
Total Gate Charge	$Q_g^*$	8.5	nC	$V_{DD} \approx -15V, V_{GS}=-5V$
Gate-Source Charge	$Q_{gs}^*$	2.5	nC	$I_D=-4.5A$
Gate-Drain Charge	$Q_{gd}^*$	3.0	nC	

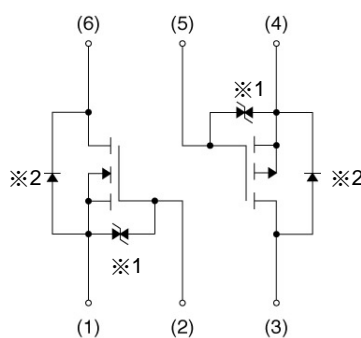
\*Pulsed

## ● Internal Circuit

MP6K61, MP6K62



MP6M63



- (1)Tr1 Source
- (2)Tr1 Gate
- (3)Tr2 Drain
- (4)Tr2 Source
- (5)Tr2 Gate
- (6)Tr1 Drain

※1 ESD protection diode

※2 Internal diode

※These products are under development, therefore the specifications and materials contained herein are subject to change without notice.