Transistor

4V Drive Pch MOS FET RSS060P05

Structure

Silicon P-channel MOS FET

Features

- 1) Built-in G-S Protection Diode.
- 2) Small and Surface Mount Package (SOP8).

Applications

Power switching , DC / DC converter , Inverter

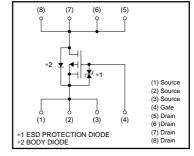
Packaging dimensions

	Package	Taping
Туре	Code	TB
	Basic ordering unit (pieces)	2500
RSS060P05		0

•Absolute maximum ratings (Ta=25°C)

Parameter			Unit
Drain-source voltage			V
Gate-source voltage			V
Continuous	I _D	±6.0	А
Pulsed	I _{DP ∗1}	±24	А
Source current Continuous		-1.6	А
Pulsed	I _{SP ∗1}	-24	А
Total power dissipation			W
Chanel temperature			°C
Range of Storage temperature			°C
	Continuous Pulsed Continuous Pulsed	Voss VGSS Continuous ID Pulsed IS Pulsed	$\begin{tabular}{ c c c c c c c } \hline & V_{DSS} & -45 \\ \hline & V_{GSS} & \pm 20 \\ \hline & Continuous & I_D & \pm 6.0 \\ \hline Pulsed & I_{DP} & & \pm 24 \\ \hline Continuous & I_S & -1.6 \\ \hline Pulsed & I_{SP} & & -16 \\ \hline Pulsed & I_{SP} & & -24 \\ \hline & P_D & & & 2 \\ \hline & T_{ch} & 150 \\ \hline \end{tabular}$

Equivalent circuit



*1 PW≤10μs、Duty cycle≤1%

*2 Mounted on a ceramic board

Thermal resistance

Parameter	Symbol	Limits	Unit	
Chanel to ambient	R _{th(ch-a)} *	62.5	°C/W	
	• tn(cn-a) "	02.0	0/11	

* Mounted on a ceramic board

1pin mark (4)

SOP8

•External dimensions (Unit : mm)

+ 0.4

(8)

Each lead has same dimensions

1.75

Transistor

•Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Gate-source leakage	Igss	-	-	±10	μΑ	V _{GS} =±20V, V _{DS} =0V
Drain-source breakdown voltage	V(BR) DSS	-45	-	-	V	I _D = -1mA, V _{GS} =0V
Zero gate voltage drain current	IDSS	-	-	-1	μΑ	$V_{DS}=-45V, V_{GS}=0V$
Gate threshold voltage	VGS (th)	-1.0	-	-2.5	V	V_{DS} = -10V, I_{D} = -1mA
Static drain-source on-state resistance		-	26	36	mΩ	$I_{D}=-6A, V_{GS}=-10V$
	$R_{DS (on)}^{*}$	-	35	49	mΩ	I _D = -6A, V _{GS} = -4.5V
		_	38	53	mΩ	I _D = -6A, V _{GS} = -4.0V
Forward transfer admittance	Y _{fs} *	8.0	-	_	S	$V_{DS} = -10V, I_{D} = -6A$
Input capacitance	Ciss	_	2700	_	pF	V _{DS} = -10V
Output capacitance	Coss	_	360	_	pF	V _{GS} =0V
Reverse transfer capacitance	Crss	_	230	_	pF	f=1MHz
Turn-on delay time	t _{d (on)} *	_	25	_	ns	Vdd≒-25V
Rise time	tr *	_	28	_	ns	$I_{D} = -3.0A$
Turn-off delay time	t _{d (off)} *	_	100	_	ns	Vgs= –10V Rι=–8.3Ω
Fall time	t _f *	_	28	_	ns	$R_{G}=10\Omega$
Total gate charge	Qg *	_	23.0	32.2	nC	V _{DD} ≒-25V V _{GS} =-5V
Gate-source charge	Q _{gs} *	_	6.6	_	nC	I _D =-6.0A
Gate-drain charge	Q _{gd} *	_	8.0	-	nC	RL=4.2Ω RG=10Ω

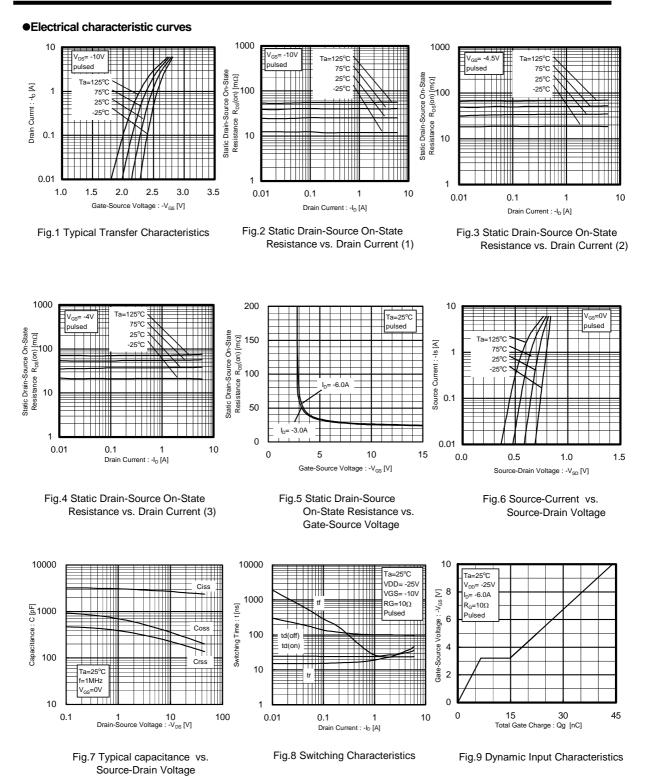
•Body diode characteristics (Source-Drain)

Forward voltage V_{SD}^* 1.2 V I_{SD}^* 6A V_{CS}^* -0V	Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
	Forward voltage	Vsd*	-	-		V	$I_S = -6A, V_{GS} = 0V$

*Pulsed

RSS060P05

Transistor



Transistor

Measurement circuits

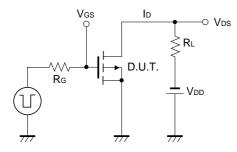


Fig.10 Switching Time Test Circuit

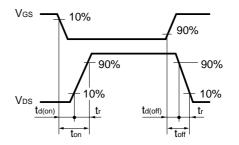


Fig.11 Switching Time Waveforms

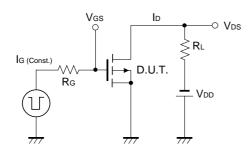
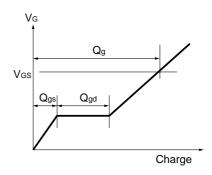


Fig.12 Gate Charge Test Circuit





Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. 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.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document 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 with 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.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.

ROHM