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

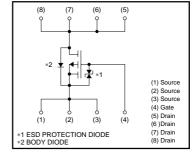
Packaging dimensions

	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

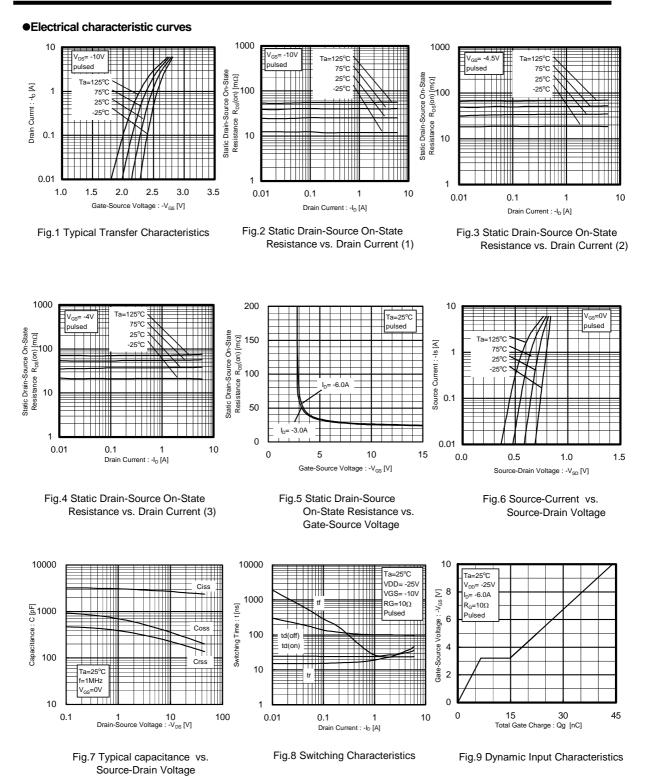
•Body diode characteristics (Source-Drain)

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

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Measurement circuits

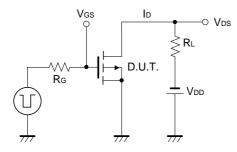


Fig.10 Switching Time Test Circuit

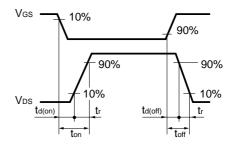


Fig.11 Switching Time Waveforms

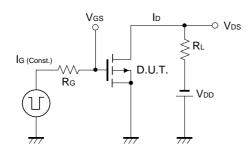
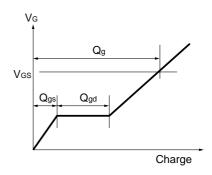
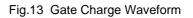


Fig.12 Gate Charge Test Circuit





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