

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: RSS085N05FU6TB
Manufacturer: Rohm Semiconductor
Package: Please confirm with sales
Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/rohm-semiconductor/rss085n05fu6tb.html>

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Contact Information

Email: info@antrexco.com

WhatsApp: +86-186-8066-5326

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Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.

Transistor

4V Drive Nch MOS FET

RSS085N05

●Structure

Silicon N-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

Type	Package	Taping
	Code	TB
	Basic ordering unit (pieces)	2500
RSS085N05		○

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DS}	45	V
Gate-source voltage		V_{GS}	20	V
Drain current	Continuous	I_D	±8.5	A
	Pulsed	I_{DP} *1	±34	A
Source current (Body diode)	Continuous	I_S	1.6	A
	Pulsed	I_{SP} *1	34	A
Total power dissipation		P_D *2	2	W
Chanel temperature		T_{ch}	150	°C
Range of Storage temperature		T_{stg}	-55 to +150	°C

*1 $PW \leq 10\mu s$ 、Duty cycle $\leq 1\%$

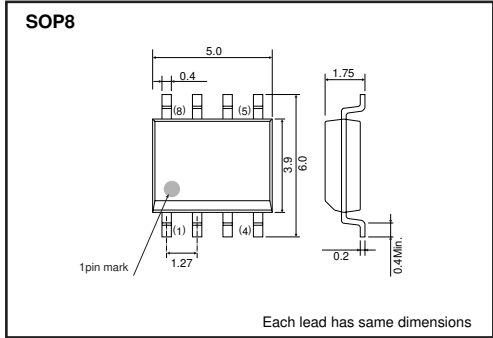
*2 Mounted on a ceramic board

●Thermal resistance

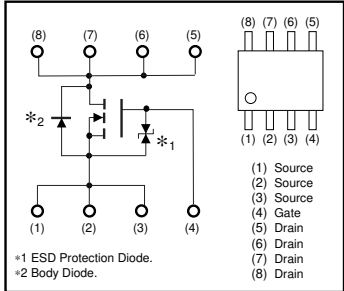
Parameter	Symbol	Limits	Unit
Chanel to ambient	$R_{th(ch-a)}$ *	62.5	°C/W

* Mounted on a ceramic board

●External dimensions (Unit : mm)



●Equivalent circuit



* A protection diode is included between the gate and the source terminals to protect the diode against static electricity when the product is in use. Use a protection circuit when the fixed voltage are exceeded.

Transistor

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I _{GSS}	—	—	10	μA	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	I _{DSS}	—	—	1	μA	V _{DS} = 45V, V _{GS} =0V
Gate threshold voltage	V _{GS (th)}	1.0	—	2.5	V	V _{DS} = 10V, I _D = 1mA
Static drain-source on-state resistance	R _{DS (on)*}	—	13	18	mΩ	I _D = 8.5A, V _{GS} = 10V
		—	16	23	mΩ	I _D = 8.5A, V _{GS} = 4.5V
		—	18	25	mΩ	I _D = 8.5A, V _{GS} = 4V
Forward transfer admittance	Y _{fs} *	7.0	—	—	S	V _{DS} = 10V, I _D = 8.5A
Input capacitance	C _{iss}	—	1500	—	pF	V _{DS} = 10V
Output capacitance	C _{oss}	—	350	—	pF	V _{GS} =0V
Reverse transfer capacitance	C _{rss}	—	170	—	pF	f=1MHz
Turn-on delay time	t _{d (on)} *	—	19	—	ns	V _{DD} ≒ 25V
Rise time	t _r *	—	25	—	ns	I _D = 4.0A
Turn-off delay time	t _{d (off)} *	—	71	—	ns	V _{GS} = 10V
Fall time	t _f *	—	24	—	ns	R _L =6.3Ω
Total gate charge	Q _g *	—	15.3	21.4	nC	V _{DD} ≒ 25V V _{GS} = 5V
Gate-source charge	Q _{gs} *	—	4.4	—	nC	I _D = 8.5A
Gate-drain charge	Q _{gd} *	—	6.0	—	nC	R _L =2.9Ω R _G =10Ω

*Pulsed

Body diode characteristics (Source-Drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V _{SD} *	—	—	1.2	V	I _S = 8.5A, V _{GS} =0V

*Pulsed

Transistor

●Electrical characteristic curves

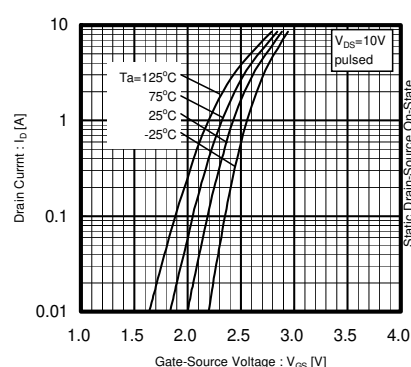


Fig.1 Typical Transfer Characteristics

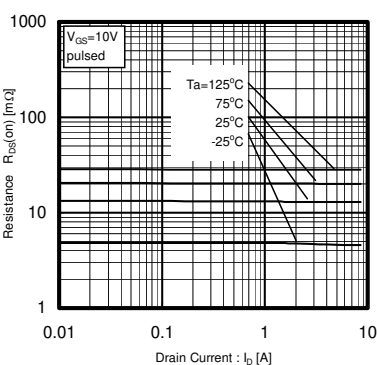


Fig.2 Static Drain-Source On-State Resistance vs. Drain Current (1)

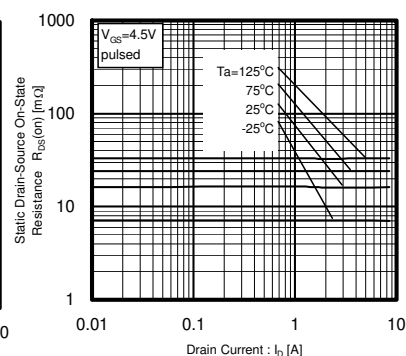


Fig.3 Static Drain-Source On-State Resistance vs. Drain Current (2)

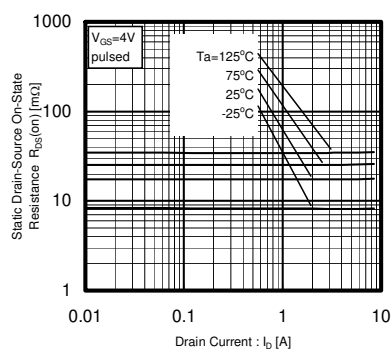


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current (3)

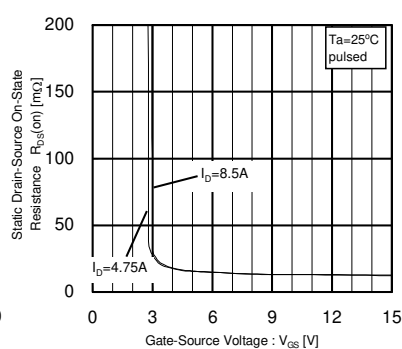


Fig.5 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

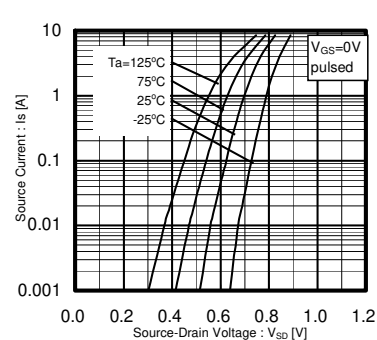


Fig.6 Source-Current vs. Source-Drain Voltage

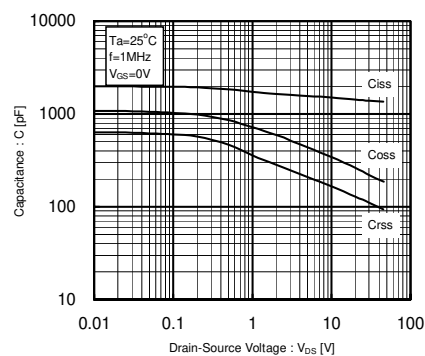


Fig.7 Typical capacitance vs. Source-Drain Voltage

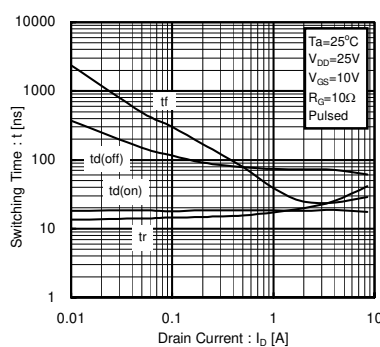


Fig.8 Switching Characteristics

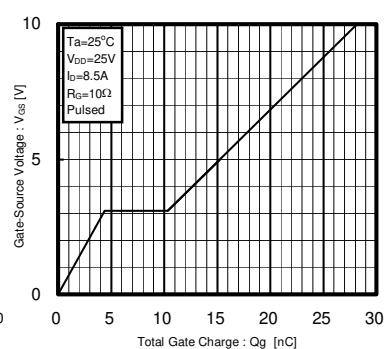


Fig.9 Dynamic Input Characteristics

Transistor

●Measurement circuits

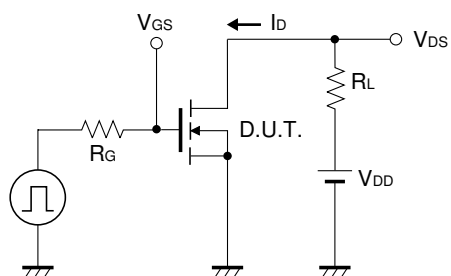


Fig.10 Switching Time Test Circuit

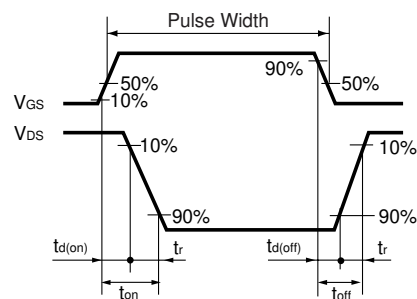


Fig.11 Switching Time Waveforms

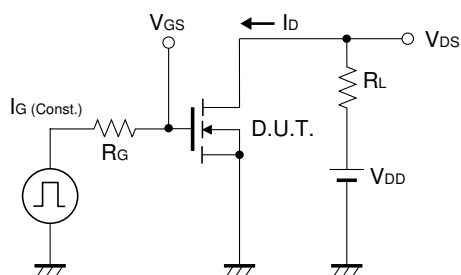


Fig.12 Gate Charge Test Circuit

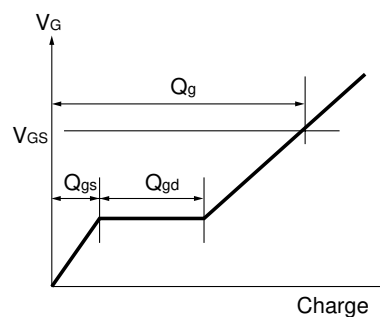


Fig.13 Gate Charge Waveform

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