

# HS54095

## Silicon N Channel MOS FET High Speed Power Switching

REJ03G1668-0100

Rev.1.00

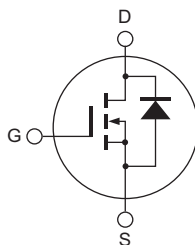
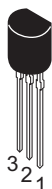
Apr 24, 2008

### Features

- Low on-resistance
- Low drive current
- High density mounting

### Outline

RENESAS Package code: PRSS0003DA-A  
(Package name: TO-92(1))



1. Gate
2. Drain
3. Source

### Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	600	V
Gate to source voltage	$V_{GSS}$	±30	V
Drain current	$I_D$	0.2	A
Drain peak current	$I_{D(pulse)}$ <sup>Note1</sup>	0.8	A
Body-drain diode reverse drain current	$I_{DR}$	0.2	A
Body-drain diode reverse drain peak current	$I_{DR(pulse)}$ <sup>Note1</sup>	0.8	A
Channel dissipation	Pch	0.75	W
Channel to ambient thermal impedance	$\theta_{ch-a}$	166.7	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

## Electrical Characteristics

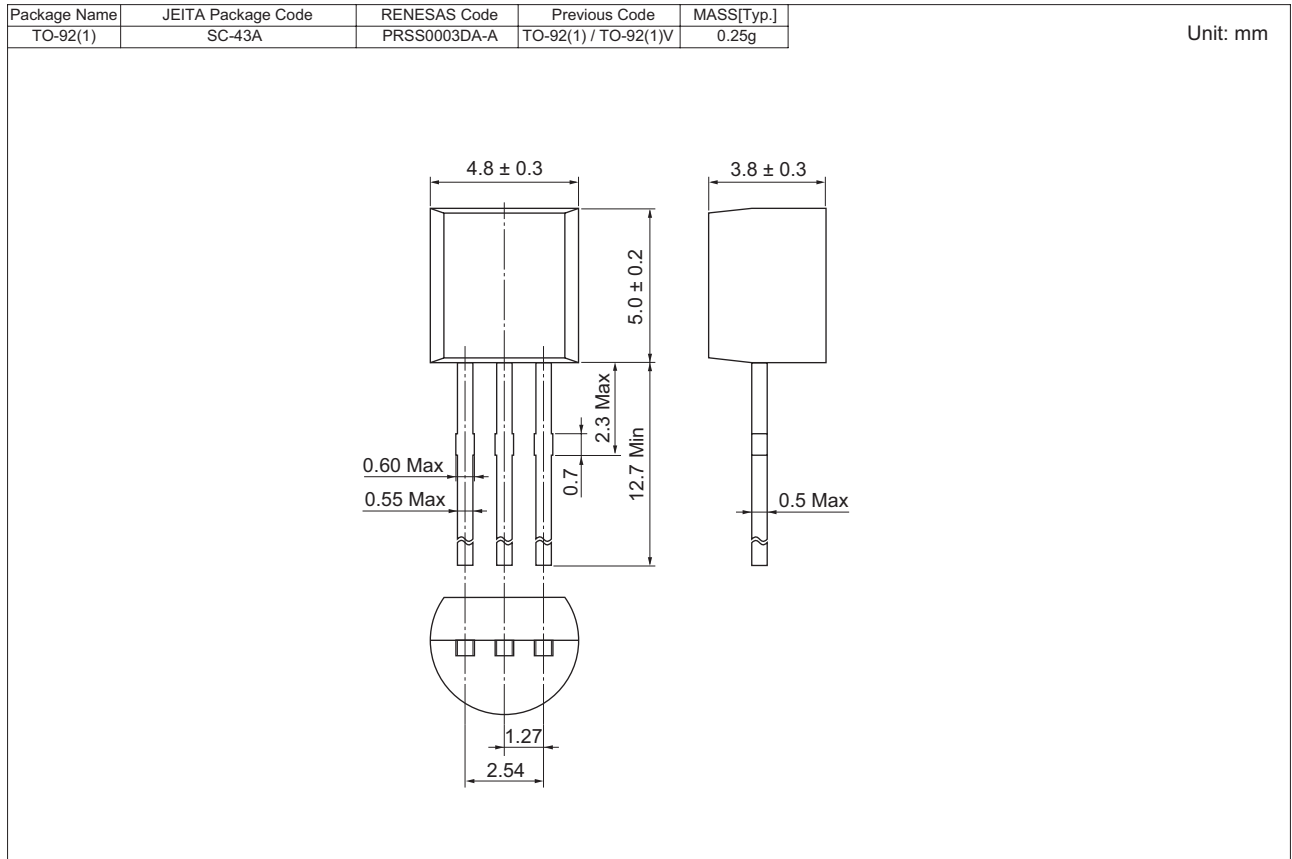
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	600	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	1	$\mu\text{A}$	$V_{DS} = 600 \text{ V}$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 0.1$	$\mu\text{A}$	$V_{GS} = \pm 30 \text{ V}$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3	—	5	V	$V_{DS} = 10 \text{ V}$ , $I_D = 1 \text{ mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	13.5	16.5	$\Omega$	$I_D = 0.1 \text{ A}$ , $V_{GS} = 10 \text{ V}$ <sup>Note2</sup>
Input capacitance	$C_{iss}$	—	66	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	$C_{oss}$	—	8.7	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	1.3	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	30	—	ns	$I_D = 0.1 \text{ A}$
Rise time	$t_r$	—	15	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	51	—	ns	$R_L = 3000 \Omega$
Fall time	$t_f$	—	175	—	ns	$R_g = 10 \Omega$
Total gate charge	$Q_g$	—	4.8	—	nC	$V_{DD} = 480 \text{ V}$
Gate to source charge	$Q_{gs}$	—	0.6	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	$Q_{gd}$	—	3.2	—	nC	$I_D = 0.2 \text{ A}$
Body-drain diode forward voltage	$V_{DF}$	—	0.77	1.30	V	$I_F = 0.2 \text{ A}$ , $V_{GS} = 0$ <sup>Note2</sup>
Body-drain diode reverse recovery time	$t_{rr}$	—	220	—	ns	$I_F = 0.2 \text{ A}$ , $V_{GS} = 0$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

Notes: 2. Pulse test

3. Since this device is equipped with high voltage FET chip ( $V_{DSS} \geq 600 \text{ V}$ ), high voltage may be supplied. Therefore, please be sure to confirm about Electric discharge between Drain terminal and other terminal.

### Package Dimensions



Since HS54095 is equipped with high voltage FET chip ( $V_{DSS} \geq 600\text{ V}$ ), high voltage may be supplied. Therefore, please be sure to confirm about Electric discharge between Drain terminal and other terminal.

### Ordering Information

Part No.	Quantity	Shipping Container
HS54095TZ-E	2500 pcs	Hold Box, Radial Taping

Notes:

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