H5N2514P

Silicon N Channel MOS FET
High Speed Power Switching

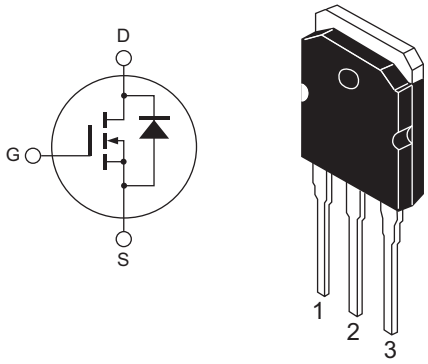
REJ03G1203-0100
Rev.1.00
May 25.2005

Features

- Low on-resistance
- Low leakage current
- High speed switching

Outline

RENESAS Package code: PRSS0004ZE-A
(Package name: TO-3P)



1. Gate
2. Drain (Flange)
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	250	V
Gate to Source voltage	V_{GSS}	±30	V
Drain current	I_D	70	A
Drain peak current	$I_{D\ (pulse)}$ Note1	210	A
Body-Drain diode reverse Drain current	I_{DR}	70	A
Body-Drain diode reverse Drain peak current	$I_{DR\ (pulse)}$ Note1	210	A
Avalanche current	I_{AP} Note3	35	A
Avalanche energy	E_{AR} Note3	76.5	mJ
Channel dissipation	Pch Note2	200	W
Channel to case thermal impedance	θch-c	0.625	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at Tc = 25°C
3. STch = 25°C, Tch ≤ 150°C

Electrical Characteristics

(Ta = 25°C)

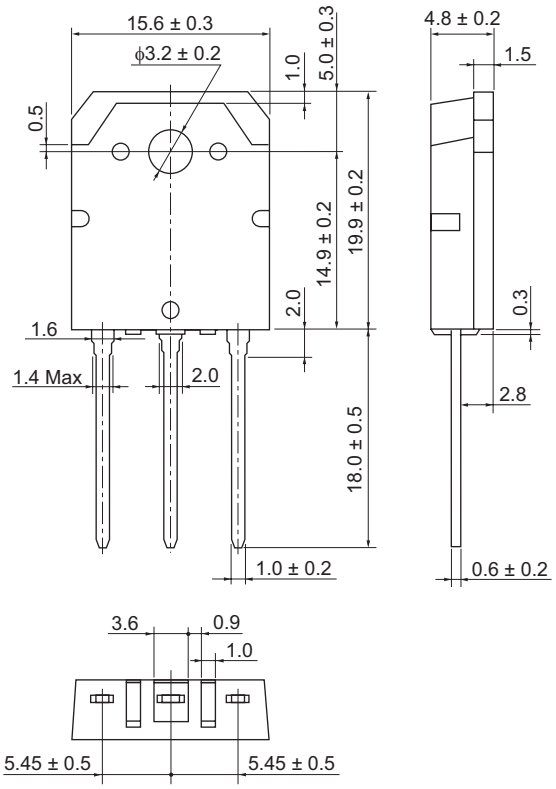
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	I_D = 10 mA, V_{GS} = 0
Zero Gate voltage Drain current	I_{DSS}	—	—	1	µA	V_{DS} = 250 V, V_{GS} = 0
Gate to Source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±30 V, V_{DS} = 0
Gate to Source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	V_{DS} = 10 V, I_D = 1 mA
Forward transfer admittance	$\|y_{fs}\|$	29	49	—	S	I_D = 35 A, V_{DS} = 10 V Note4
Static Drain to Source on state resistance	$R_{DS(on)}$	—	0.025	0.030	Ω	I_D = 35 A, V_{GS} = 10 V Note4
Input capacitance	Ciss	—	5500	—	pF	V_{DS} = 25 V V_{GS} = 0 f = 1 MHz
Output capacitance	Coss	—	820	—	pF	
Reverse transfer capacitance	Crss	—	115	—	pF	
Turn-on delay time	$t_{d(on)}$	—	70	—	ns	I_D = 35 A V_{GS} = 10 V R_L = 3.6 Ω Rg = 10 Ω
Rise time	t_r	—	350	—	ns	
Turn-off delay time	$t_{d(off)}$	—	270	—	ns	
Fall time	t_f	—	230	—	ns	
Total Gate charge	Qg	—	155	—	nC	V_{DD} = 200 V V_{GS} = 10 V I_D = 70 A
Gate to Source charge	Qgs	—	35	—	nC	
Gate to Drain charge	Qgd	—	75	—	nC	
Body-Drain diode forward voltage	V_{DF}	—	1.10	1.65	V	I_F = 70 A, V_{GS} = 0 Note4
Body-Drain diode reverse recovery time	t_{rr}	—	220	—	ns	I_F = 70 A, V_{GS} = 0 diF/dt = 100 A/µs
Body-Drain diode reverse recovery charge	Q_{rr}	—	1.8	—	µC	

Notes: 4. Pulse test

Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-65	PRSS0004ZE-A	TO-3P / TO-3PV	5.0g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
H5N2514P-E	30 pcs	Plastic magazine

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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