

RJK4514DPK

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1514-0100

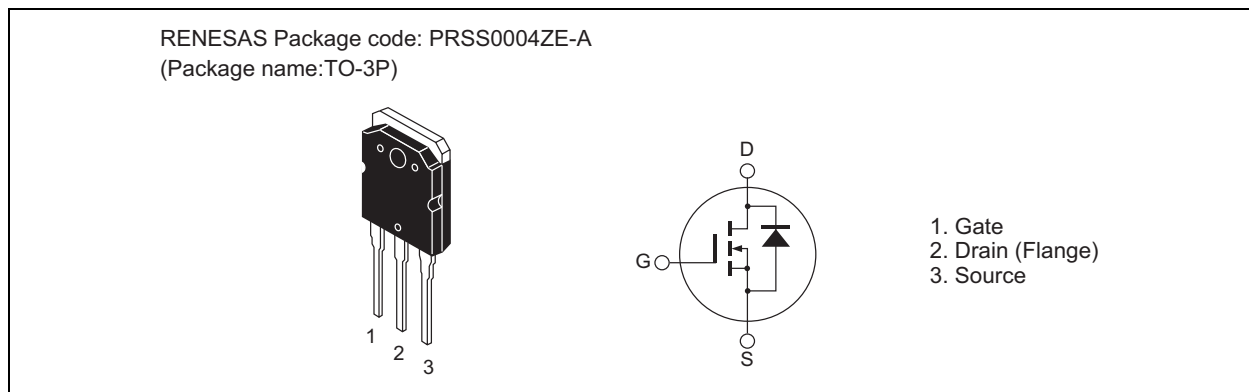
Rev.1.00

Feb 13, 2007

Features

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

Outline



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	450	V
Gate to source voltage	V _{GSS}	±30	V
Drain current	I _D	22	A
Drain peak current	I _{D (pulse)} ^{Note1}	66	A
Body-drain diode reverse drain current	I _{DR}	22	A
Body-drain diode reverse drain peak current	I _{DR (pulse)} ^{Note1}	66	A
Avalanche current	I _{AP} ^{Note3}	5	A
Avalanche energy	E _{AR} ^{Note3}	1.4	mJ
Channel dissipation	P _{ch} ^{Note2}	150	W
Channel to case thermal impedance	θ _{ch-c}	0.833	°C/W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-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

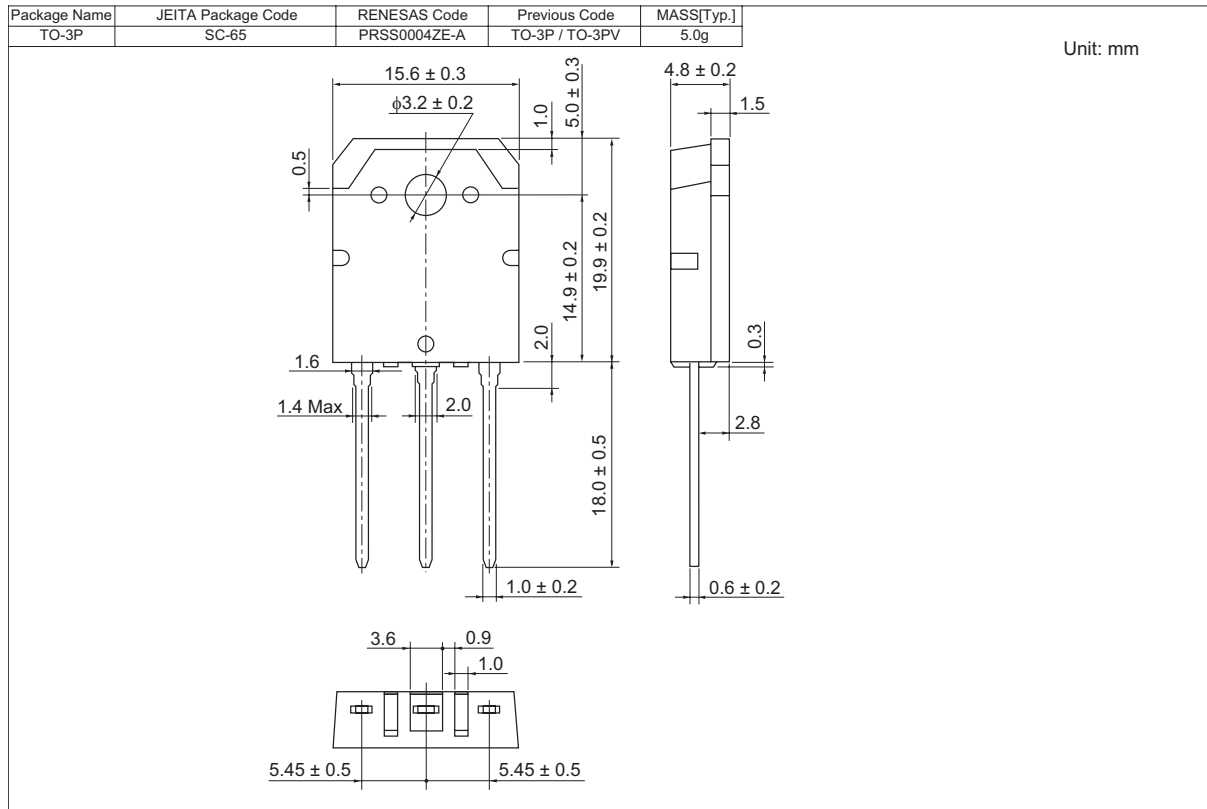
Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	450	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 450 \text{ V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	3.0	—	4.5	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.25	0.30	Ω	$I_D = 11 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	1800	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	C_{oss}	—	200	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	27	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	35	—	ns	$I_D = 11 \text{ A}$
Rise time	t_r	—	58	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	95	—	ns	$R_L = 20.5 \Omega$
Fall time	t_f	—	44	—	ns	$R_g = 10 \Omega$
Total gate charge	Q_g	—	46	—	nC	$V_{DD} = 360 \text{ V}$
Gate to source charge	Q_{gs}	—	10	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	Q_{gd}	—	22	—	nC	$I_D = 22 \text{ A}$
Body-drain diode forward voltage	V_{DF}	—	0.99	1.65	V	$I_F = 22 \text{ A}$, $V_{GS} = 0$ ^{Note4}
Body-drain diode reverse recovery time	t_{rr}	—	340	—	ns	$I_F = 22 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

Notes: 4. Pulse test

Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
RJK4514DPK-00-T0	360 pcs	Box (Tube)

Notes:

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