

2SK3229

Silicon N Channel MOS FET High Speed Power Switching

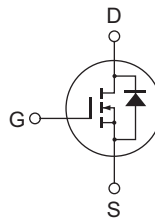
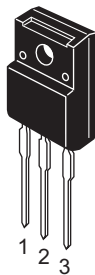
REJ03G1095-0200
(Previous: ADE-208-766)
Rev.2.00
Sep 07, 2005

Features

- Low on-resistance
 $R_{DS(on)} = 6\text{ m}\Omega$ typ.
- Low drive current
- 4 V gate drive device can be driven from 5 V source

Outline

RENESAS Package code: PRSS0003AE-A
(Package name: TO-220C•FM)



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DS}	80	V
Gate to source voltage	V_{GS}	± 20	V
Drain current	I_D	60	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	240	A
Body-drain diode reverse drain current	I_{DR}	60	A
Avalanche current	I_{AP} ^{Note 3}	50	A
Avalanche energy	E_{AR} ^{Note 3}	181	mJ
Channel dissipation	P_{ch} ^{Note 2}	35	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
 2. Value at $T_c = 25^\circ C$
 3. Value at $T_{ch} \leq 25^\circ C$, $R_g \geq 50 \Omega$

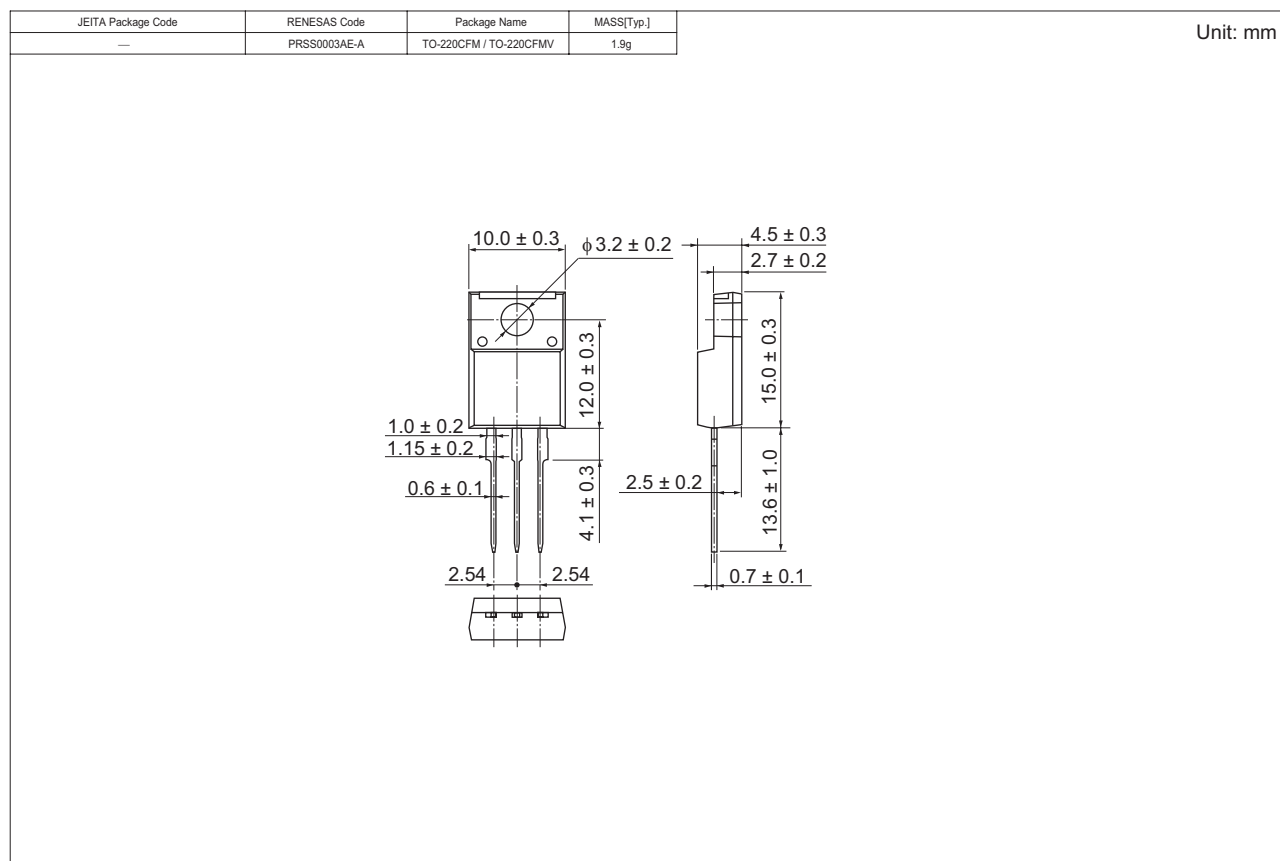
Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	80	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 80 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.5	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	6.0	7.5	$m\Omega$	$I_D = 30 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note 4}
	$R_{DS(on)}$	—	8.0	12	$m\Omega$	$I_D = 30 \text{ A}$, $V_{GS} = 4 \text{ V}$ ^{Note 4}
Forward transfer admittance	$ y_{fs} $	50	85	—	S	$I_D = 30 \text{ A}$, $V_{DS} = 10 \text{ V}$ ^{Note 4}
Input capacitance	C_{iss}	—	9700	—	pF	$V_{GS} = 0$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	1250	—	pF	
Reverse transfer capacitance	C_{rss}	—	290	—	pF	
Total gate charge	Q_g	—	150	—	nC	$V_{DD} = 25 \text{ V}$ $V_{GS} = 25 \text{ V}$ $I_D = 60 \text{ A}$
Gate to source charge	Q_{gs}	—	30	—	nC	
Gate to drain charge	Q_{gd}	—	30	—	nC	
Turn-on delay time	$t_{d(on)}$	—	80	—	ns	$I_D = 30 \text{ A}$ $V_{GS} = 10 \text{ V}$ $R_L = 1 \Omega$
Rise time	t_r	—	280	—	ns	
Turn-off delay time	$t_{d(off)}$	—	780	—	ns	
Fall time	t_f	—	340	—	ns	
Body-drain diode forward voltage	V_{DF}	—	1.0	—	V	$I_F = 60 \text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	80	—	ns	$I_F = 60 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 50 \text{ A}/\mu s$

Note: 4. Pulse test

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SK3229-E	50 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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