

# 2SK2425 Silicon N Channel MOS FET

REJ03G1012-0200 (Previous: ADE-208-1360) Rev.2.00 Sep 07, 2005

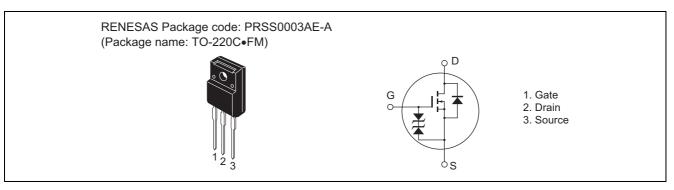
### Application

High speed power switching

### Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator, DC-DC converter.

### Outline





# Absolute Maximum Ratings

			(1a - 25 C)
Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	250	V
Gate to source voltage	V <sub>GSS</sub>	±30	V
Drain current	ID	7	A
Drain peak current	I <sub>D(pulse)</sub> * <sup>1</sup>	28	A
Body to drain diode reverse drain current	I <sub>DR</sub>	7	А
Channel dissipation	Pch* <sup>2</sup>	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW  $\leq$  10  $\mu$ s, duty cycle  $\leq$  1 %

2. Value at  $Tc = 25^{\circ}C$ 

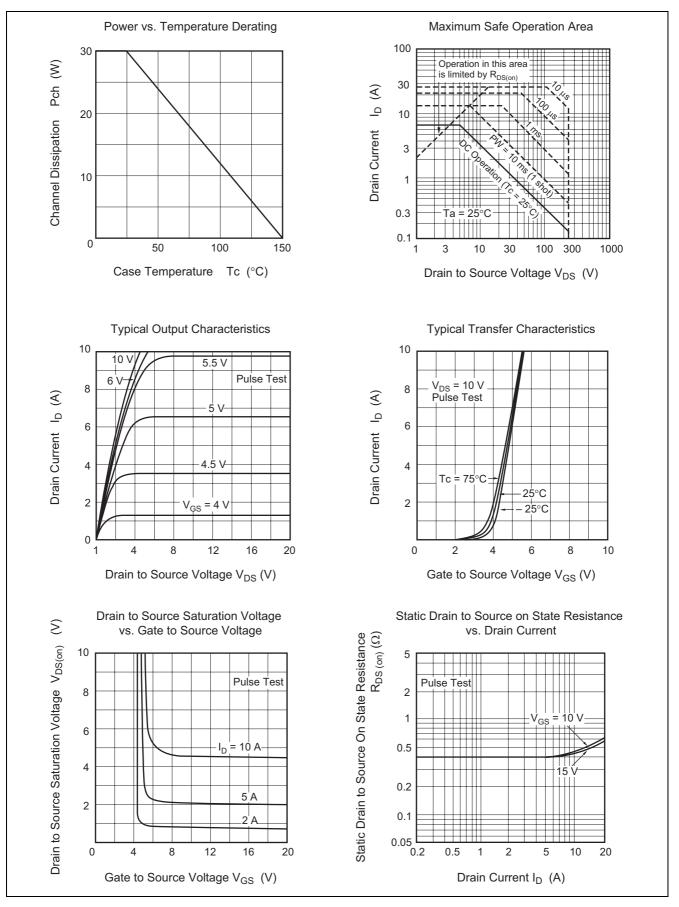
# **Electrical Characteristics**

						$(Ta = 25^{\circ}C)$
ltem	Symbol	Min	Тур	Мах	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	250	_	_	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	V <sub>(BR)GSS</sub>	±30	—	—	V	$I_G = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	I <sub>GSS</sub>	_	—	±10	μA	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I <sub>DSS</sub>	_	—	250	μA	$V_{DS} = 250 \text{ V}, \text{ V}_{GS} = 0$
Gate to source cutoff voltage	V <sub>GS(off)</sub>	2.0	—	3.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state	R <sub>DS(on)</sub>	_	0.4	0.55	Ω	$I_D = 4 \text{ A}, V_{GS} = 10 \text{ V}^{*3}$
resistance						
Forward transfer admittance	y <sub>fs</sub>	3.0	5.0	—	S	$I_D = 4 A, V_{DS} = 10 V^{*3}$
Input capacitance	Ciss	—	690	—	pF	$V_{DS} = 10 V, V_{GS} = 0,$
Output capacitance	Coss	_	265	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	_	45	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	_	13	—	ns	$I_D = 4 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	tr	_	55	—	ns	R <sub>L</sub> = 7.5 Ω
Turn-off delay time	t <sub>d(off)</sub>	_	65	_	ns	
Fall time	t <sub>f</sub>	_	37	_	ns	
Body to drain diode forward voltage	V <sub>DF</sub>		1.0		V	$I_F = 7 \text{ A}, V_{GS} = 0$
Body to drain diode reverse	t <sub>rr</sub>		180		ns	$I_F = 7 \text{ A}, V_{GS} = 0,$
recovery time						di <sub>F</sub> / dt = 100 A / μs

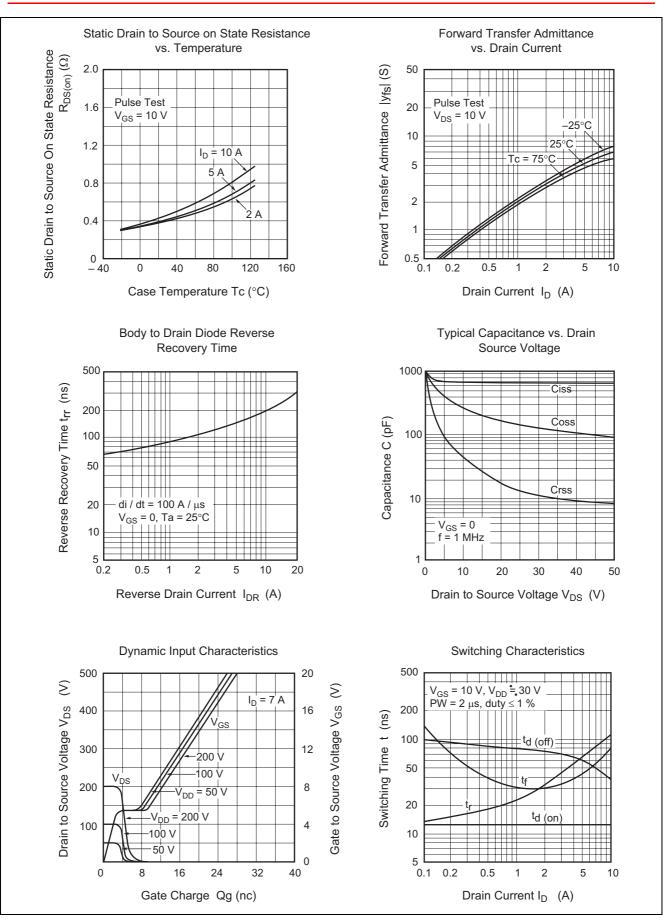
Note: 3. Pulse Test



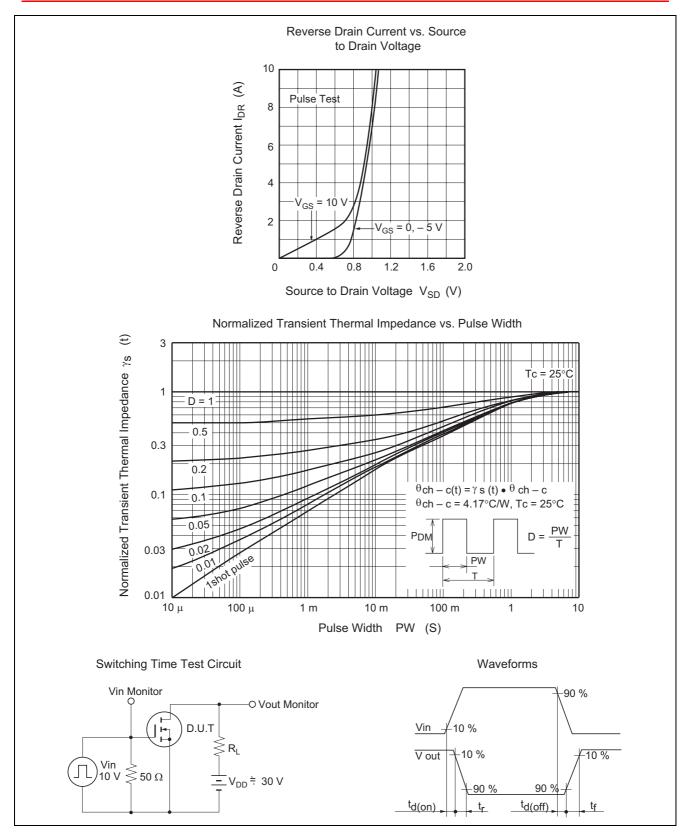
### **Main Characteristics**





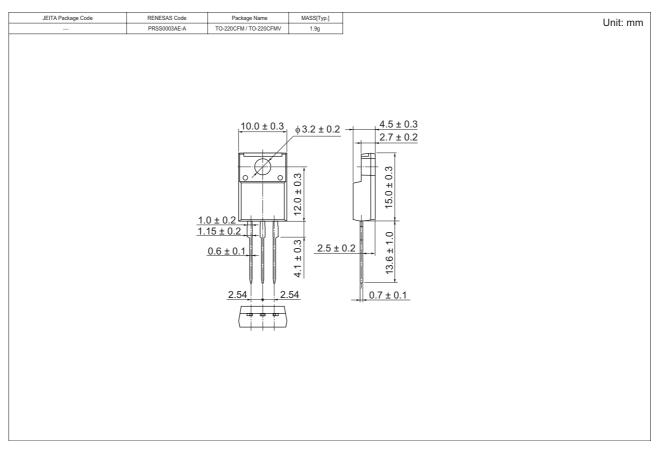








# Package Dimensions



### **Ordering Information**

Part Name	Quantity	Shipping Container
2SK2425-E	600 pcs	Box (Tube)

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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