

2SK3447

Silicon N Channel Power MOS FET Power Switching

REJ03G1101-0700
(Previous: ADE-208-1567E)
Rev.7.00
Sep 07, 2005

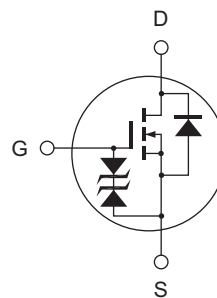
Features

- Capable of 4 V gate drive
- Low drive current
- Low on-resistance
 $R_{DS(on)} = 1.5 \Omega$ typ. (at $V_{GS} = 10 V$)

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Outline

RENESAS Package code: PRSS0003DC-A
(Package name: TO-92MOD)



1. Source
2. Drain
3. Gate

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V _{DSS}	150	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	1	A
Drain peak current	I _{D (pulse)} ^{Note 1}	4	A
Body-drain diode reverse drain current	I _{DR}	1	A
Channel dissipation	P _{ch} ^{Note 2}	0.9	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 Ta = 25°C

Electrical Characteristics

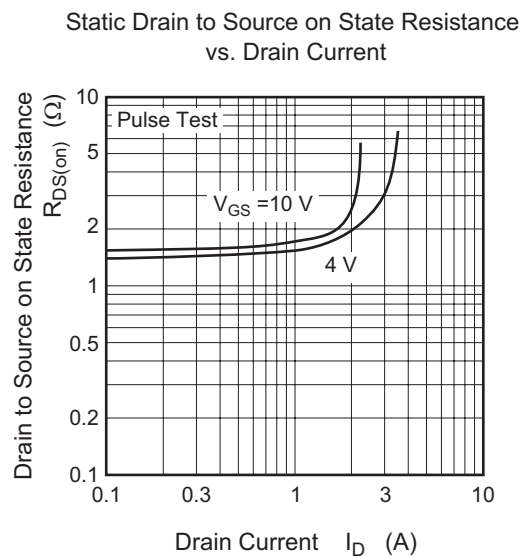
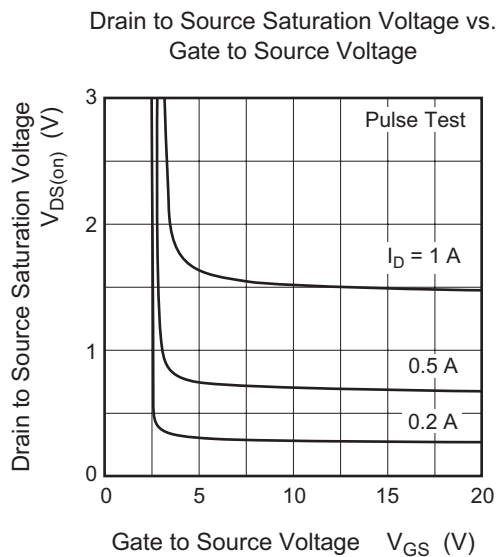
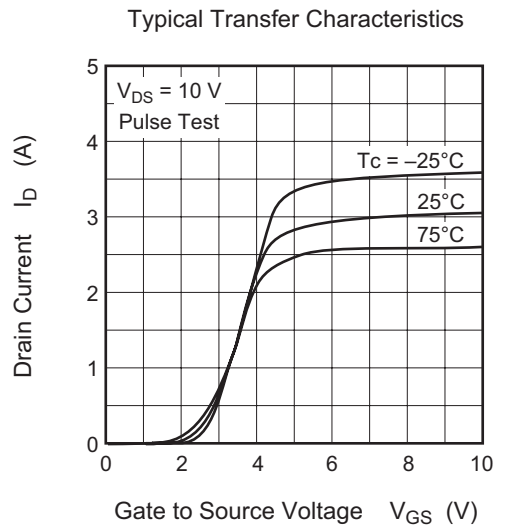
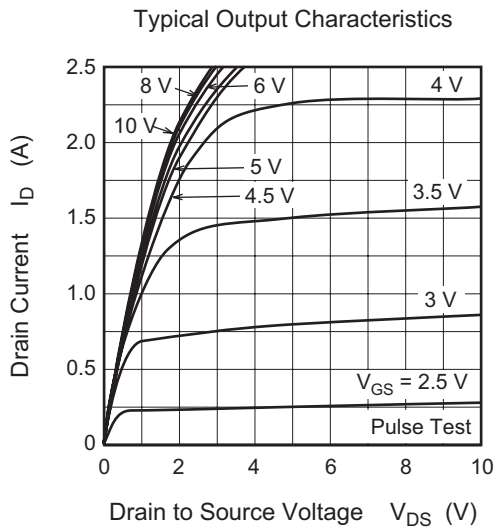
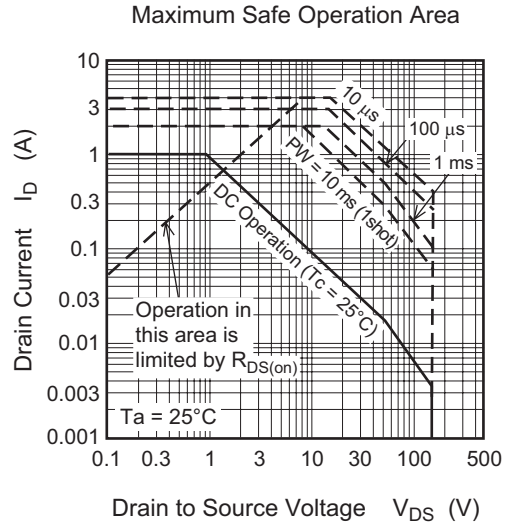
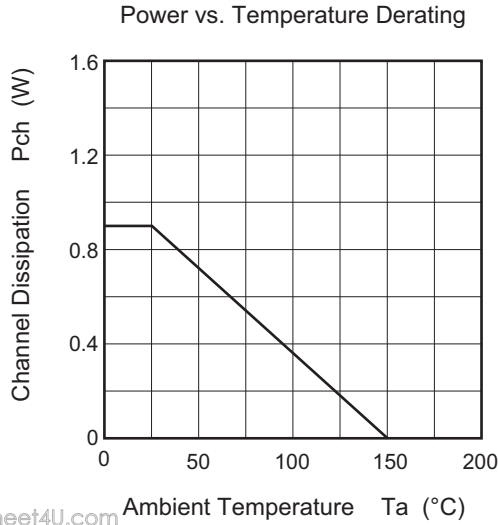
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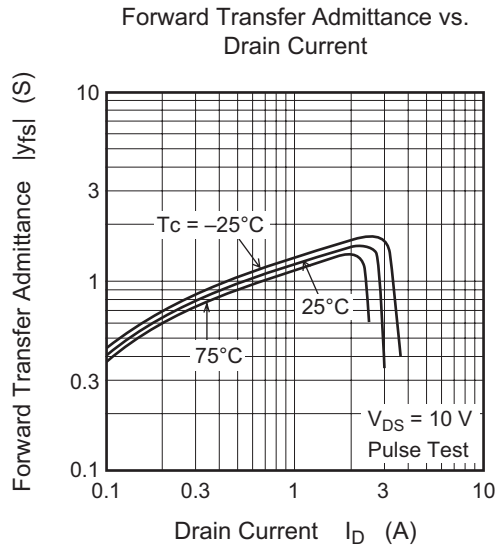
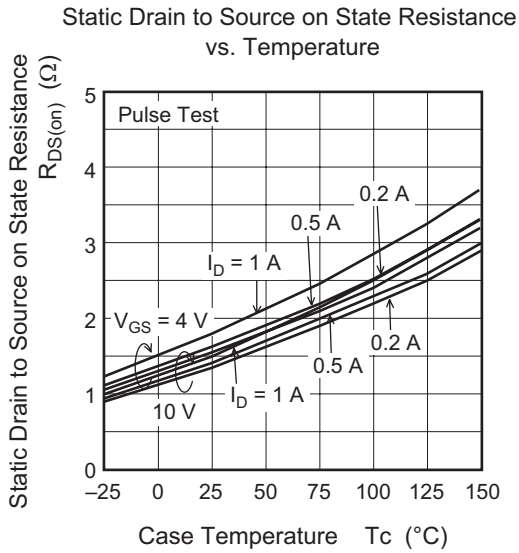
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR) DSS}	150	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR) GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	1	μA	V _{DS} = 150 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS (off)}	1.0	—	2.5	V	V _{DS} = 10 V, I _D = 1 mA
Static drain to source on state resistance	R _{DS (on)}	—	1.5	1.95	Ω	I _D = 0.5 A, V _{GS} = 10 V ^{Note 3}
	R _{DS (on)}	—	1.9	2.5	Ω	I _D = 0.5 A, V _{GS} = 4 V ^{Note 3}
Forward transfer admittance	y _{fs}	0.5	0.9	—	S	I _D = 0.5 A, V _{DS} = 10 V ^{Note 3}
Input capacitance	C _{iss}	—	85	—	pF	V _{DS} = 10 V V _{GS} = 0 f = 1 MHz
Output capacitance	C _{oss}	—	36	—	pF	
Reverse transfer capacitance	C _{rss}	—	18	—	pF	
Total gate charge	Q _g	—	4.5	—	nC	V _{DD} = 100 V
Gate to source charge	Q _{gs}	—	0.8	—	nC	V _{GS} = 10 V
Gate to drain charge	Q _{gd}	—	1.6	—	nC	I _D = 1 A
Turn-on delay time	t _{d (on)}	—	7	—	ns	V _{GS} = 10 V I _D = 0.5 A R _L = 60 Ω
Rise time	t _r	—	6	—	ns	
Turn-off delay time	t _{d (off)}	—	21	—	ns	
Fall time	t _f	—	10	—	ns	
Body-drain diode forward voltage	V _{DF}	—	1.0	1.5	V	I _F = 1 A, V _{GS} = 0 ^{Note 3}
Body-drain diode reverse recovery time	t _{rr}	—	60	—	ns	I _F = 1 A, V _{GS} = 0 di _F /dt = 100 A/μs

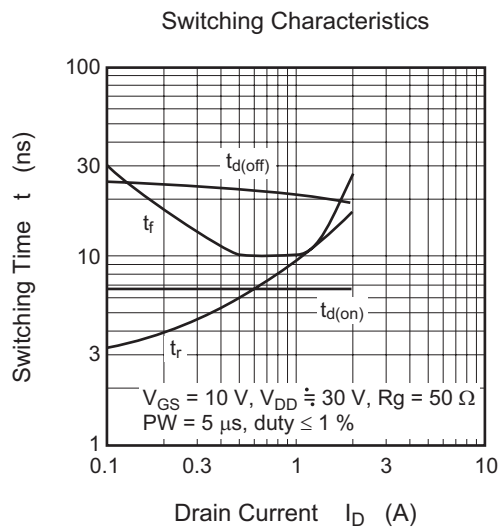
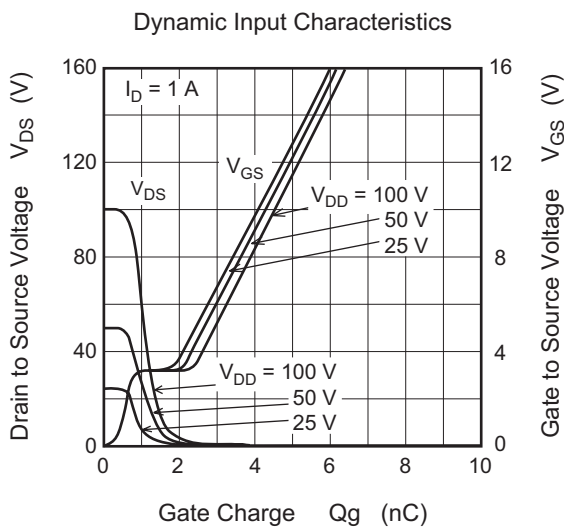
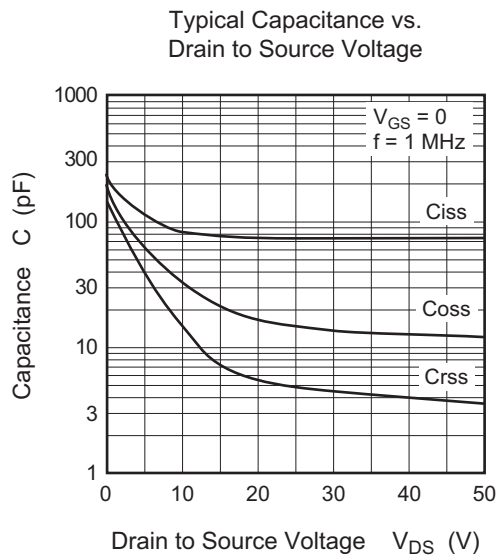
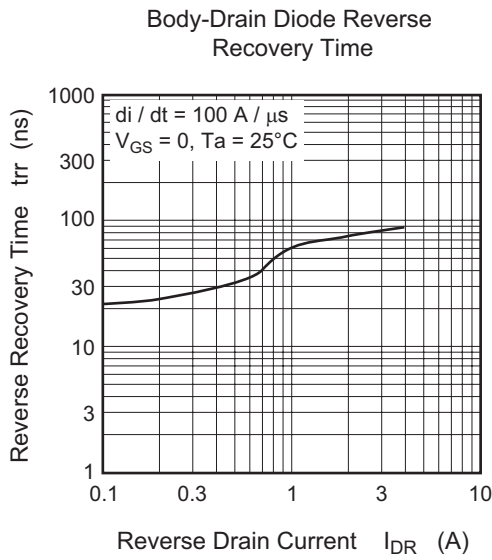
Note: 3. Pulse test

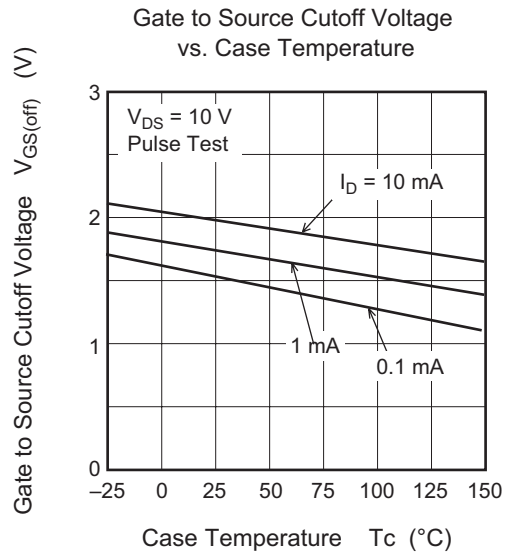
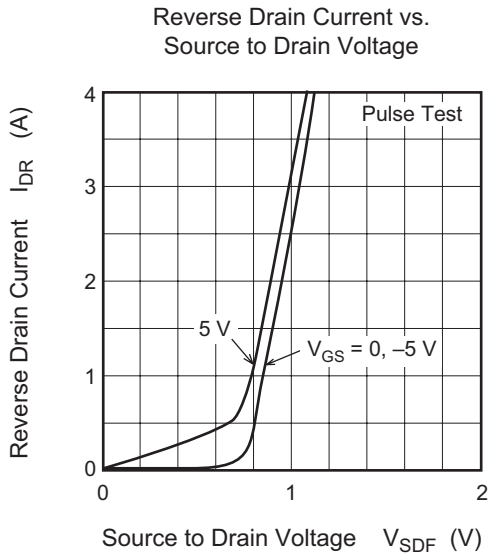
Main Characteristics



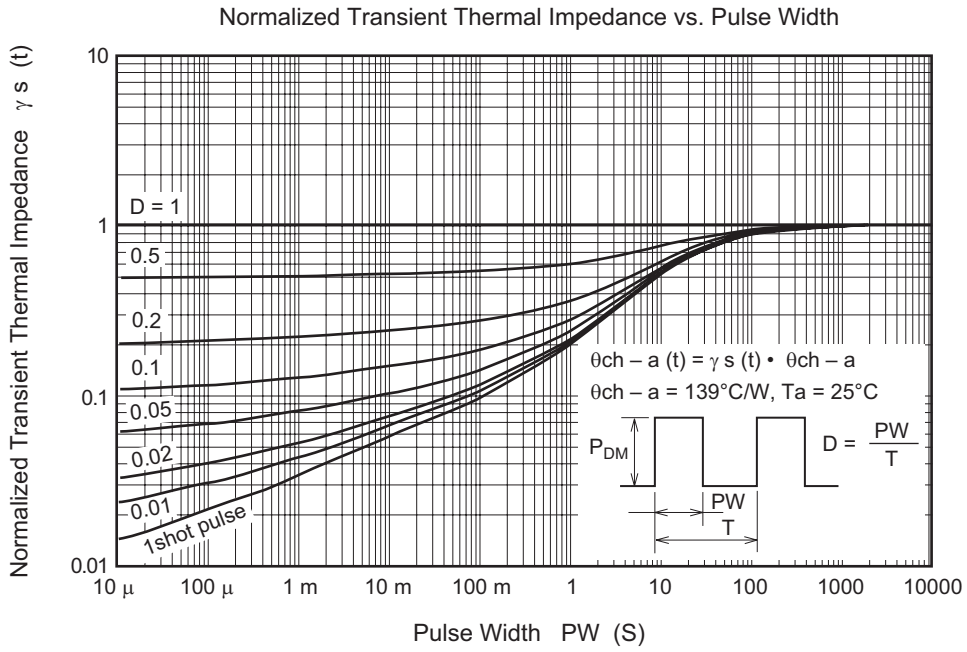


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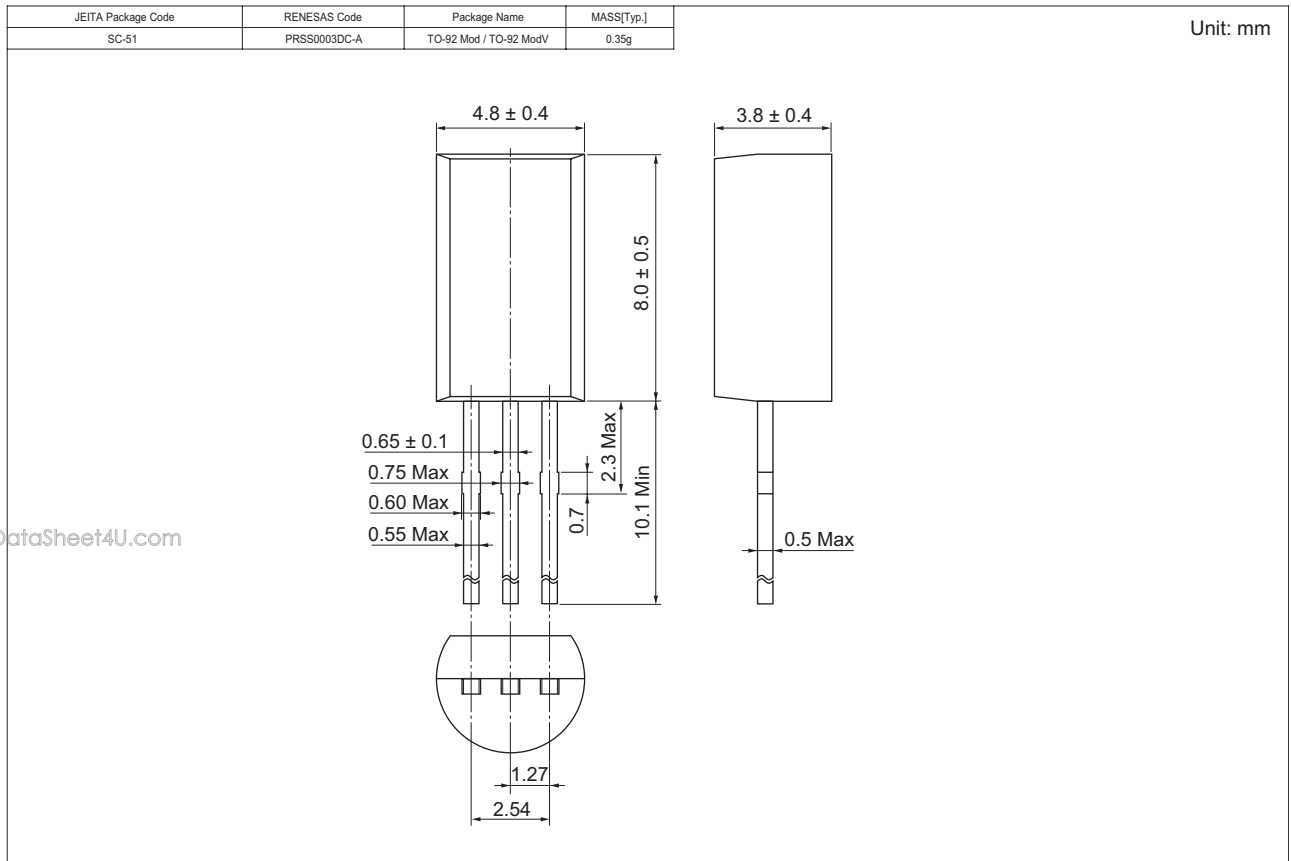




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Package Dimensions



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Ordering Information

Part Name	Quantity	Shipping Container
2SK3447TZ-E	2500 pcs	Hold box, Radial taping

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