

2SK2225-80-E

1500V - 2A - MOS FET
High Speed Power Switching

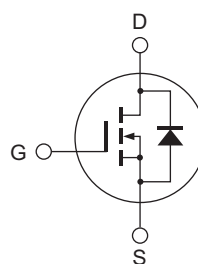
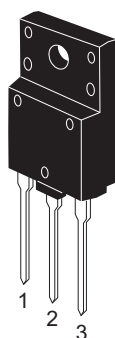
R07DS1275EJ0200
Rev.2.00
Aug 02, 2016

Features

- High breakdown voltage ($V_{DSS} = 1500\text{ V}$)
- High speed switching
- Low drive current

Outline

RENESAS Package code: PRSS0003ZD-A
(Package name: TO-3PF)



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings

($T_a = 25^\circ\text{C}$)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	1500	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	2	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	7	A
Body to drain diode reverse drain current	I_{DR}	2	A
Channel dissipation	P_{ch} ^{Note 2}	50	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10\text{ }\mu\text{s}$, duty cycle $\leq 1\%$
2. Value at $T_c = 25^\circ\text{C}$

Electrical Characteristics

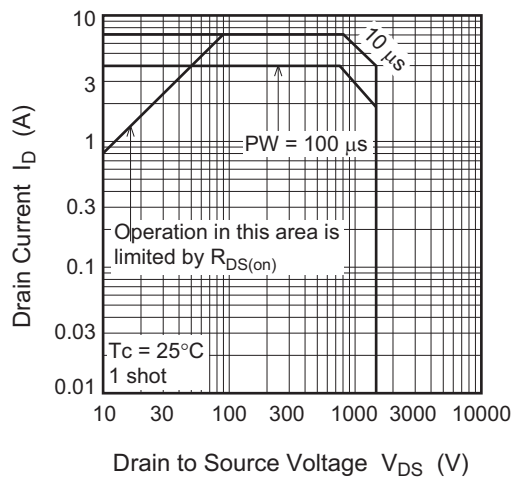
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	1500	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 1	μA	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	500	μA	$V_{DS} = 1200 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	4.0	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	9	12	Ω	$I_D = 1 \text{ A}$, $V_{GS} = 15 \text{ V}$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	0.45	0.75	—	S	$I_D = 1 \text{ A}$, $V_{DS} = 20 \text{ V}$ ^{Note 3}
Input capacitance	C_{iss}	—	990	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	125	—	pF	
Reverse transfer capacitance	C_{rss}	—	60	—	pF	
Turn-on delay time	$t_{d(on)}$	—	17	—	ns	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}$, $R_L = 30 \Omega$
Rise time	t_r	—	50	—	ns	
Turn-off delay time	$t_{d(off)}$	—	150	—	ns	
Fall time	t_f	—	50	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_F = 2 \text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	1750	—	ns	$I_F = 2 \text{ A}$, $V_{GS} = 0$, $di_F / dt = 100 \text{ A} / \mu\text{s}$

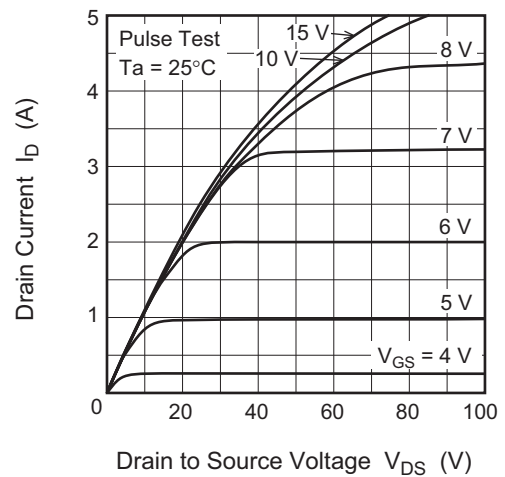
Notes: 3. Pulse Test

Main Characteristics

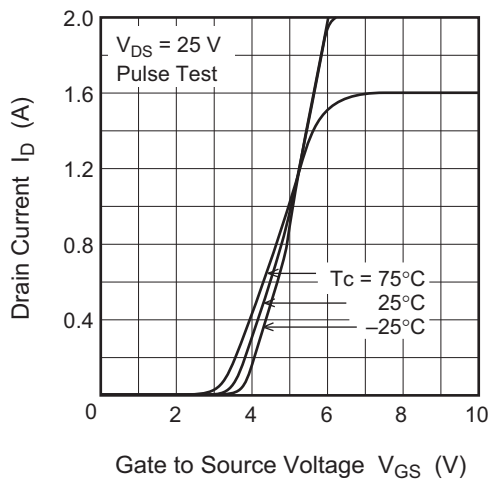
Maximum Safe Operation Area



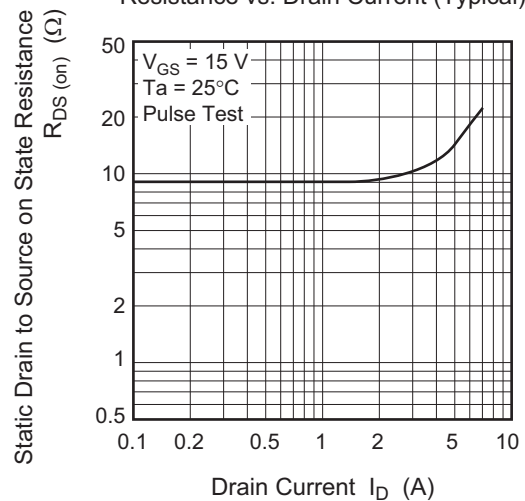
Typical Output Characteristics



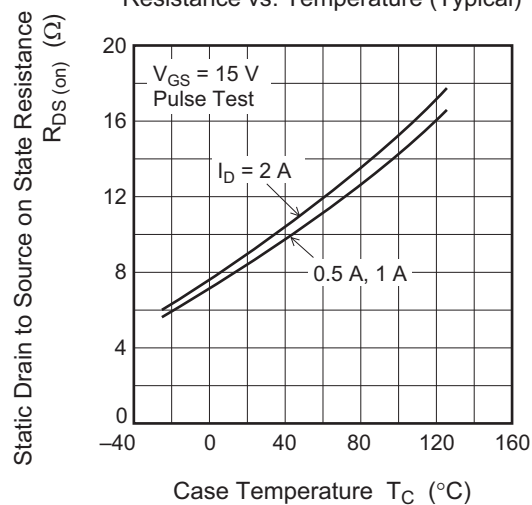
Typical Transfer Characteristics



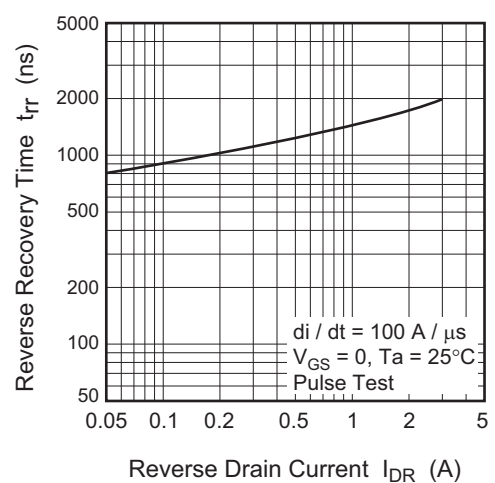
Static Drain to Source on State Resistance vs. Drain Current (Typical)



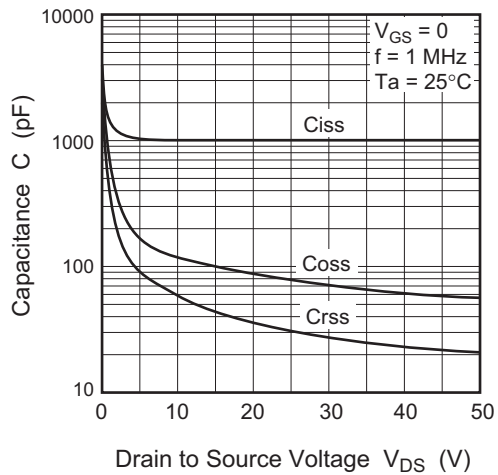
Static Drain to Source on State Resistance vs. Temperature (Typical)



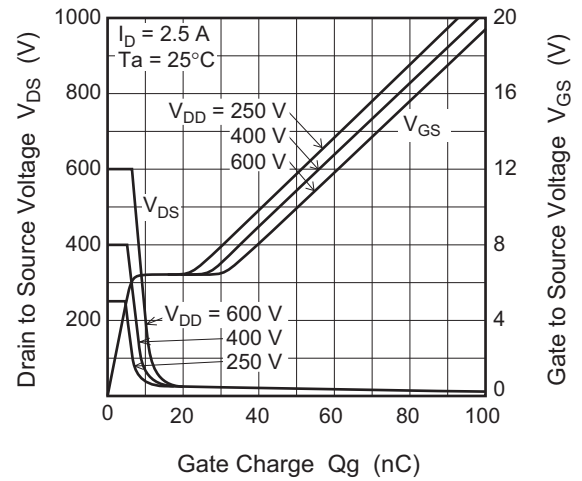
Body to Drain Diode Reverse Recovery Time (Typical)



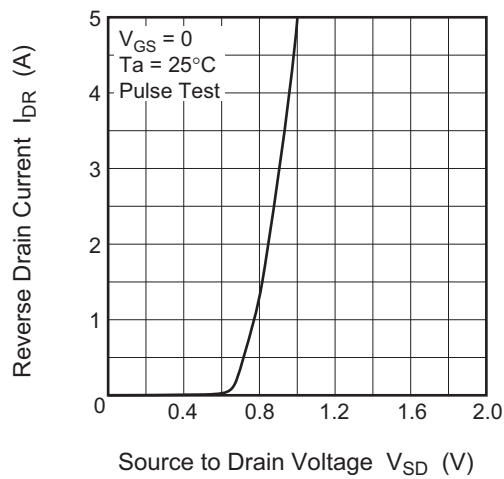
Typical Capacitance vs.
Drain to Source Voltage

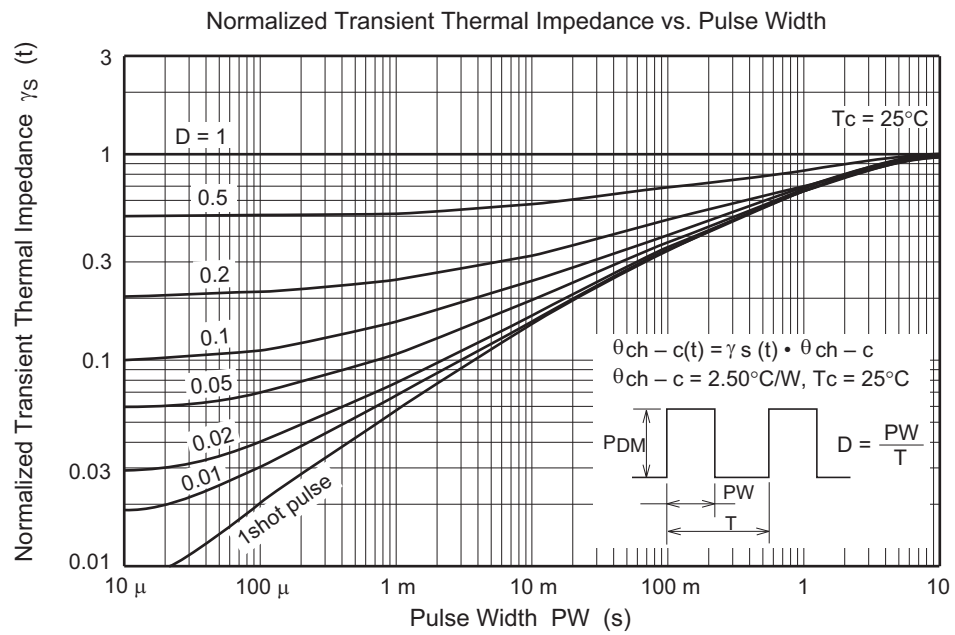


Dynamic Input Characteristics (Typical)

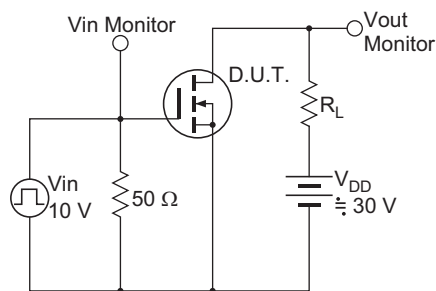


Reverse Drain Current vs.
Source to Drain Voltage (Typical)

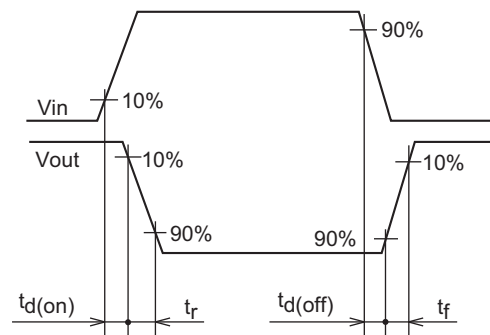




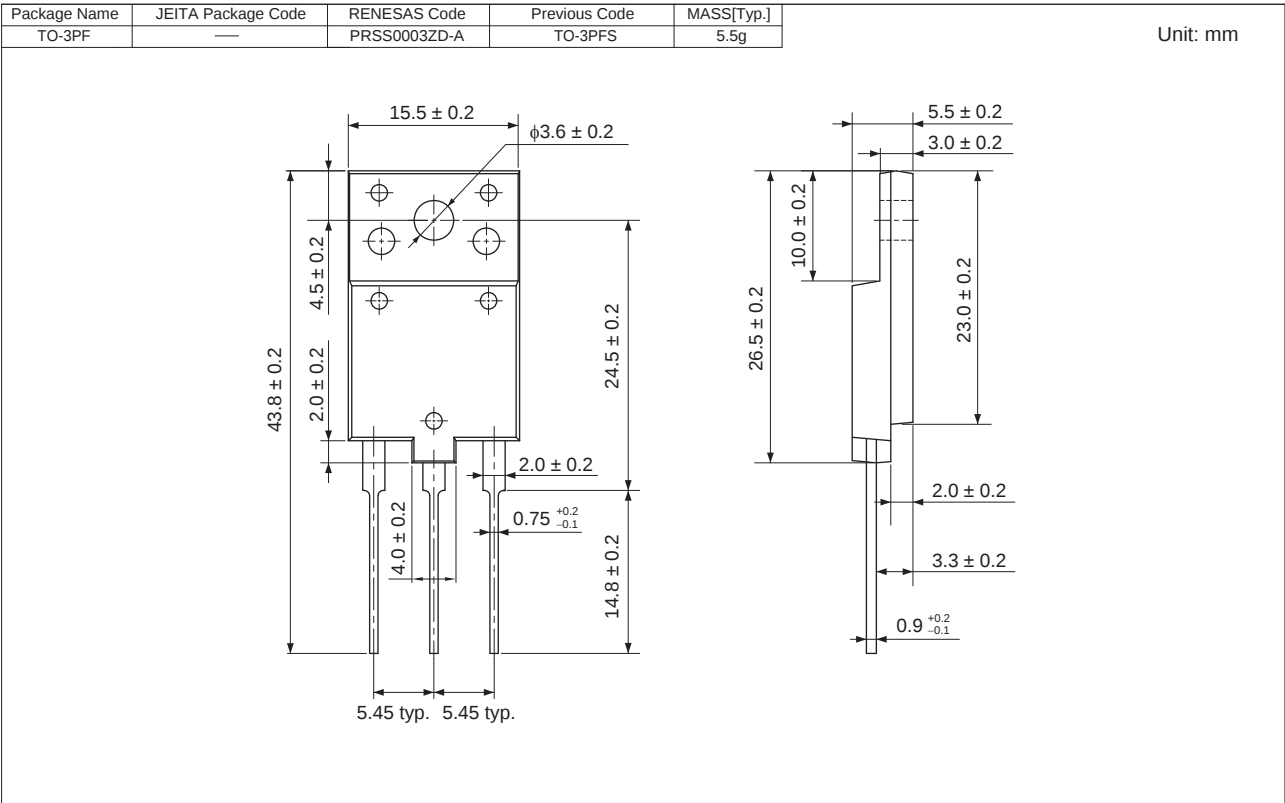
Switching Time Test Circuit



Waveforms



Package Dimensions



Ordering Information

Orderable Part No.	Quantity	Shipping Container
2SK2225-80-E#T2	30 pcs	Tube

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