

2SK2788

Silicon N Channel MOS FET High Speed Power Switching

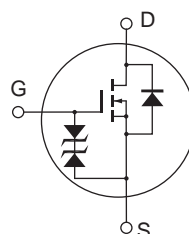
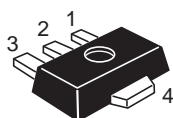
R07DS0511EJ0300
(Previous: REJ03G1033-0200)
Rev.3.00
Jul 27, 2011

Features

- Low on-resistance
 $R_{DS(on)} = 0.12 \Omega$ typ ($V_{GS} = 10 \text{ V}$, $I_D = 1 \text{ A}$)
- Low drive current
- High speed switching
- 4 V gate drive devices.

Outline

RENESAS Package code: PLZZ0004CA-A
(Package name: UPAK)



1. Gate
2. Drain
3. Source
4. Drain

Note: Marking is "VY"

Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	2	A
Drain peak current	$I_{D(pulse)}^{*1}$	4	A
Body to drain diode reverse drain current	I_{DR}	2	A
Channel dissipation	P_{ch}^{*2}	1	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

- Notes: 1. $PW \leq 100 \mu\text{s}$, duty cycle $\leq 10 \%$
2. When using the alumina ceramic board (12.5 x 20 x 0.7 mm)

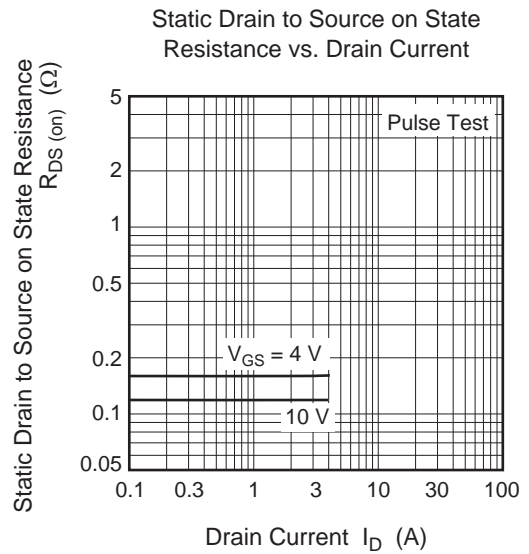
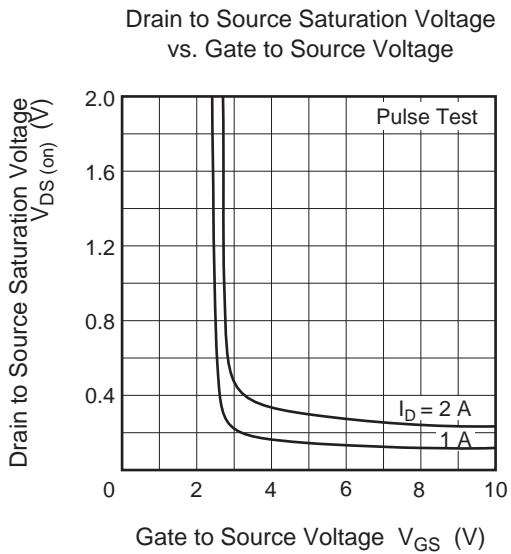
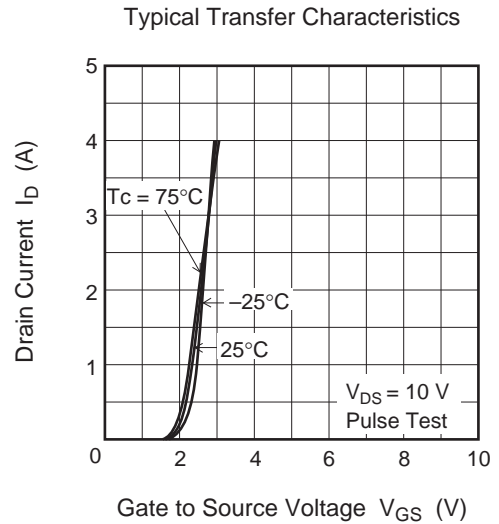
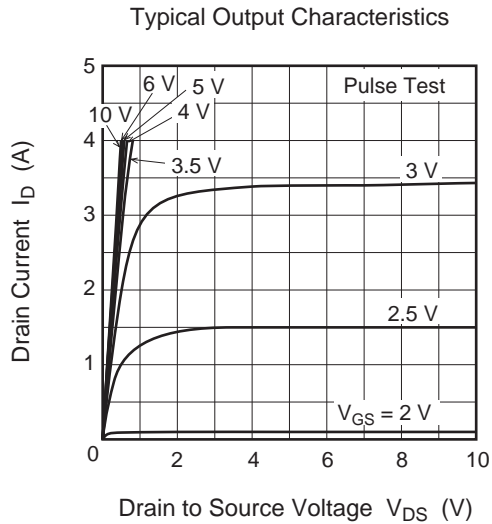
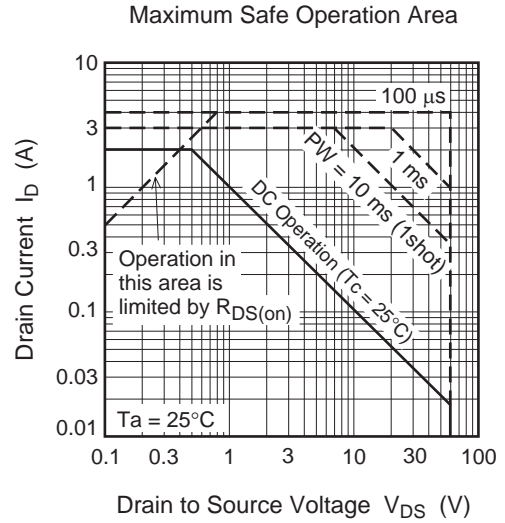
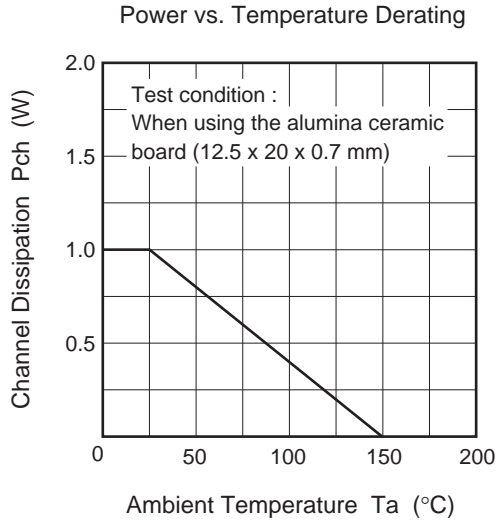
Electrical Characteristics

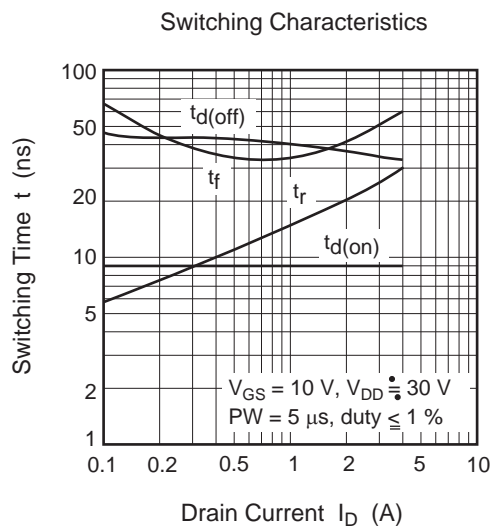
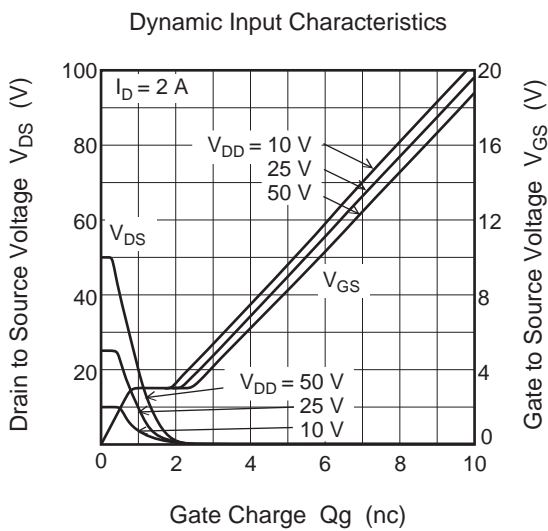
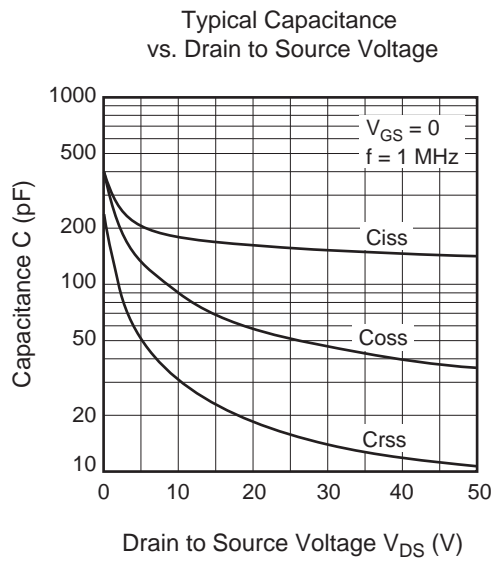
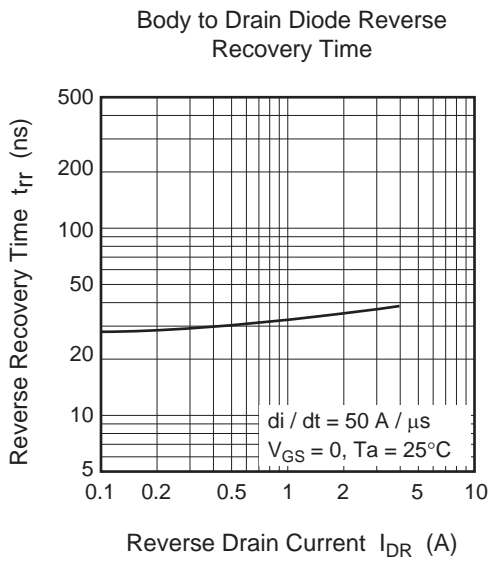
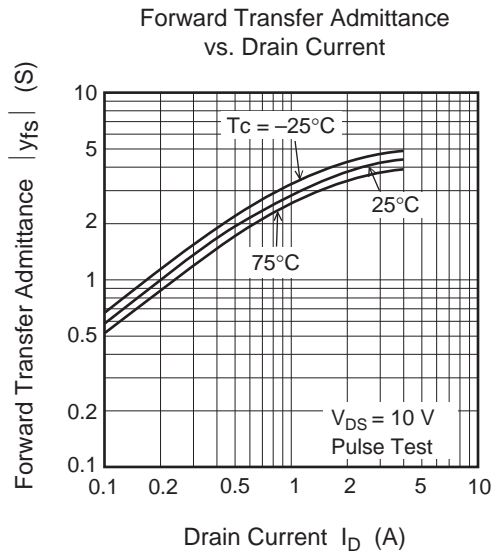
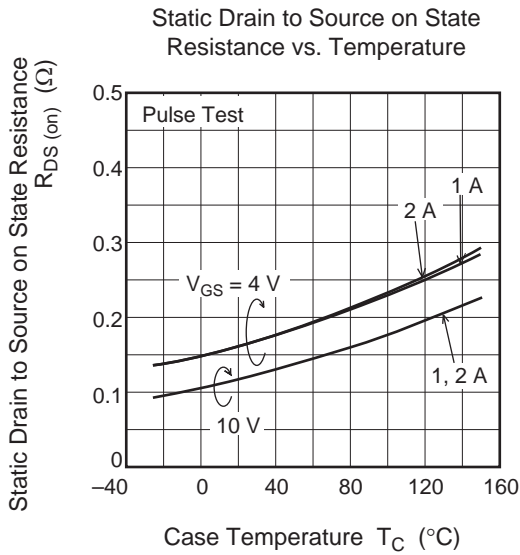
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 60 \text{ V}, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.12	0.16	Ω	$I_D = 1 \text{ A}, V_{GS} = 10 \text{ V}^{*3}$
	$R_{DS(on)}$	—	0.16	0.25	Ω	$I_D = 1 \text{ A}, V_{GS} = 4 \text{ V}^{*3}$
Forward transfer admittance	$ y_{fs} $	1.6	2.8	—	S	$I_D = 1 \text{ A}, V_{DS} = 10 \text{ V}^{*3}$
Input capacitance	C_{iss}	—	180	—	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	90	—	pF	
Reverse transfer capacitance	C_{rss}	—	30	—	pF	
Turn-on delay time	$t_{d(on)}$	—	9	—	ns	$V_{GS} = 10 \text{ V}, I_D = 1 \text{ A},$ $R_L = 30 \Omega$
Rise time	t_r	—	15	—	ns	
Turn-off delay time	$t_{d(off)}$	—	40	—	ns	
Fall time	t_f	—	35	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_D = 2 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	35	—	ns	$I_F = 2 \text{ A}, V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

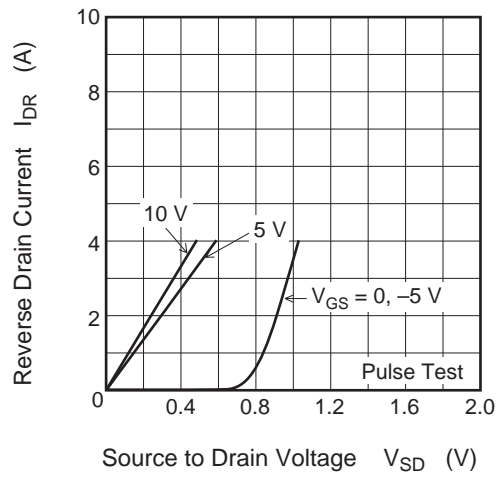
Notes: 3. Pulse test

Main Characteristics

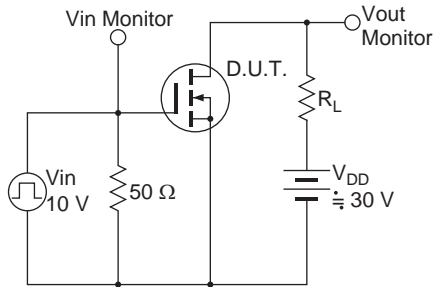




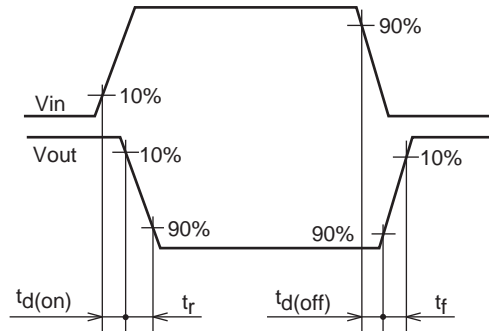
Reverse Drain Current vs. Source to Drain Voltage



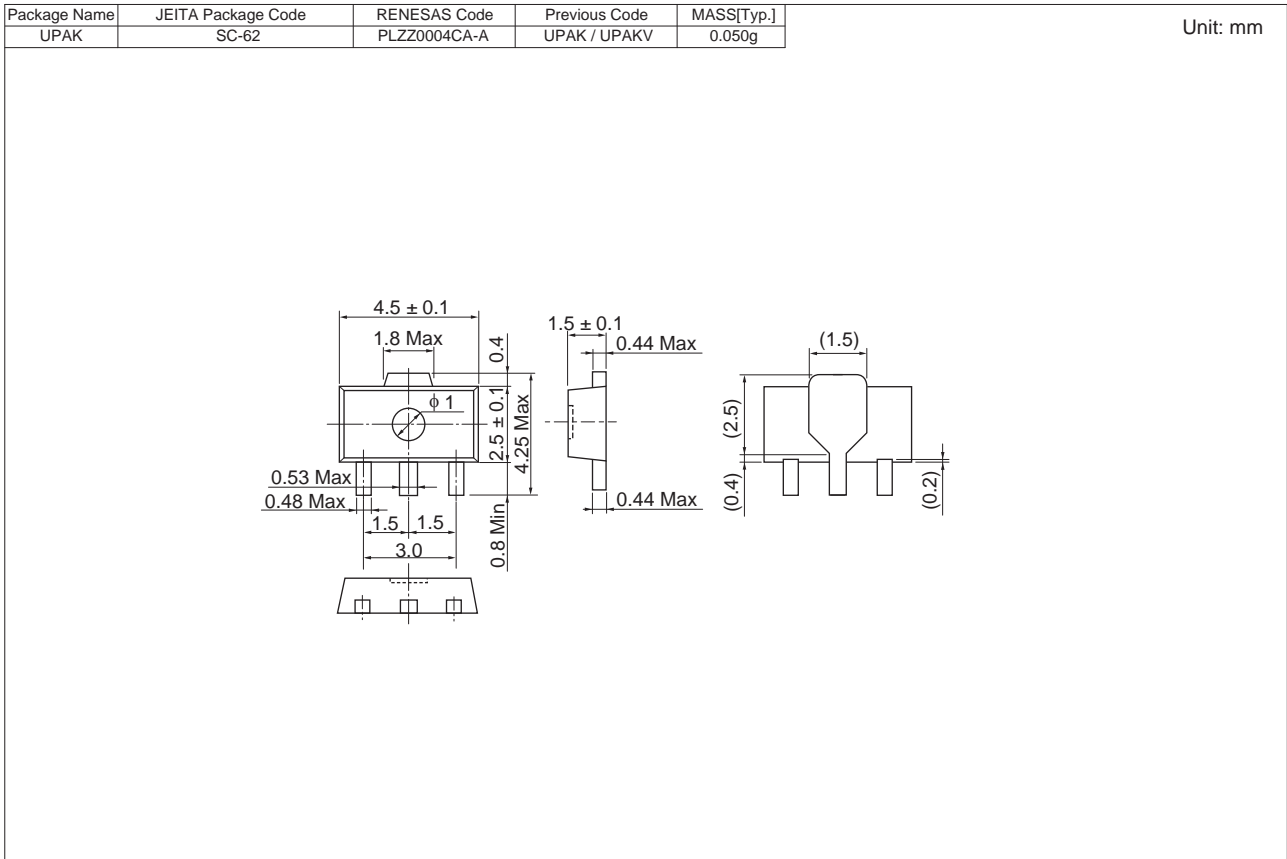
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Orderable Part Number	Quantity	Shipping Container
2SK2788VYTL-E	1000 pcs	Taping
2SK2788VYTR-E	1000 pcs	Taping

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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