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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

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2SK3287

Silicon N Channel MOS FET High Speed Switching

RENESAS

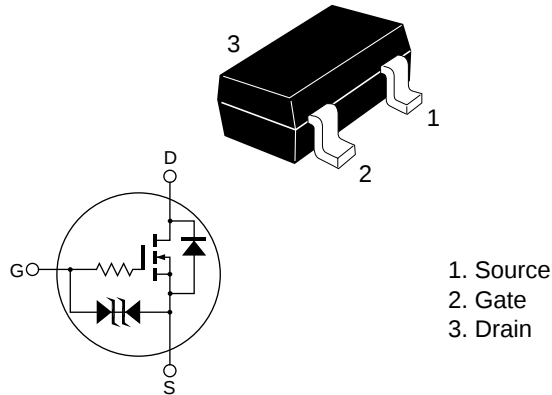
ADE-208-742 C (Z)
4th.Edition.
June 1999

Features

- Low on-resistance
 $R_{DS} = 1.26 \Omega$ typ. ($V_{GS} = 10 \text{ V}$, $I_D = 150 \text{ mA}$)
 $R_{DS} = 2.8 \Omega$ typ. ($V_{GS} = 4 \text{ V}$, $I_D = 50 \text{ mA}$)
- 4 V gate drive device.
- Small package (MPAK)

Outline

MPAK



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	300	mA
Drain peak current	$I_{D(pulse)}$ ^{Note1}	1.2	A
Body-drain diode reverse drain current	I_{DR}	300	mA
Channel dissipation	P_{ch} ^{Note 2}	400	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

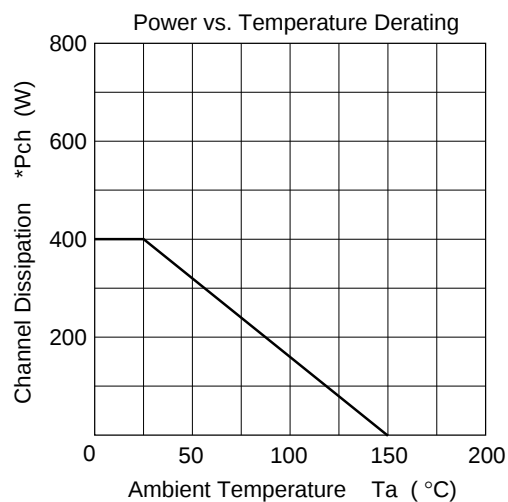
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 100 \mu A$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±5	μA	$V_{GS} = \pm 16 V$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 30 V$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.3	—	2.3	V	$I_D = 10 \mu A$, $V_{DS} = 5 V$
Static drain to source on state resistance	$R_{DS(on)}$	—	1.26	1.44	Ω	$I_D = 150 mA$, $V_{GS} = 10 V$ ^{Note 3}
	$R_{DS(on)}$	—	2.8	3.44	Ω	$I_D = 50 mA$, $V_{GS} = 4 V$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	145	220	—	mS	$I_D = 150 mA$, $V_{DS} = 10 V$ ^{Note 3}
Input capacitance	C_{iss}	—	6	—	pF	$V_{DS} = 10 V$
Output capacitance	C_{oss}	—	18	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	2	—	pF	$f = 1 MHz$
Turn-on delay time	$t_{d(on)}$	—	200	—	ns	$I_D = 150 mA$, $V_{GS} = 10 V$
Rise time	t_r	—	600	—	ns	$R_L = 66.6 \Omega$
Turn-off delay time	$t_{d(off)}$	—	1100	—	ns	
Fall time	t_f	—	1100	—	ns	

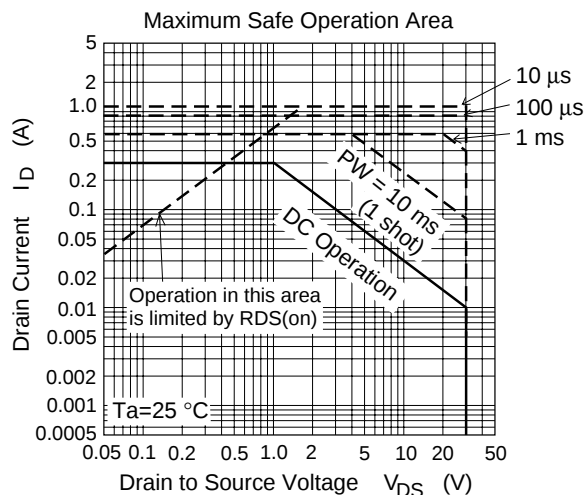
Note: 3. Pulse test

4. Marking is AN

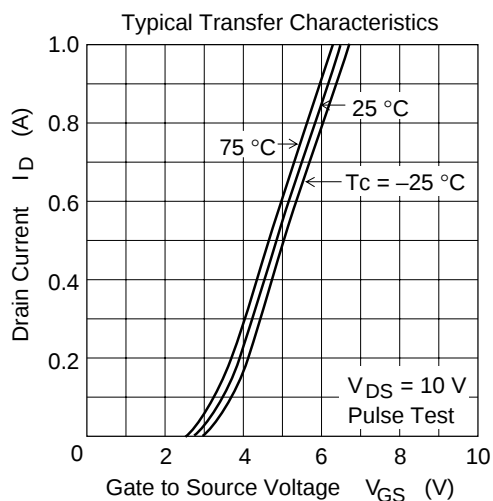
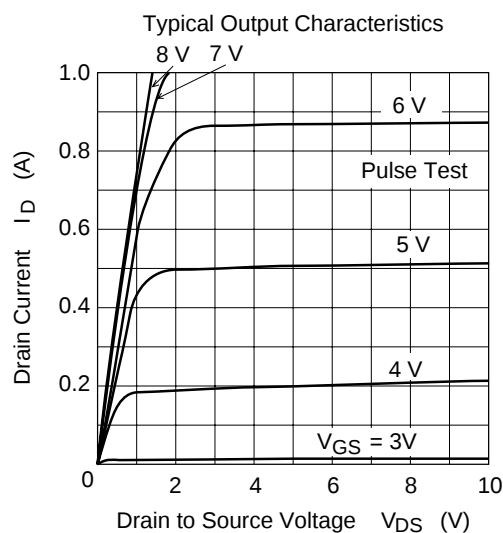
Main Characteristics

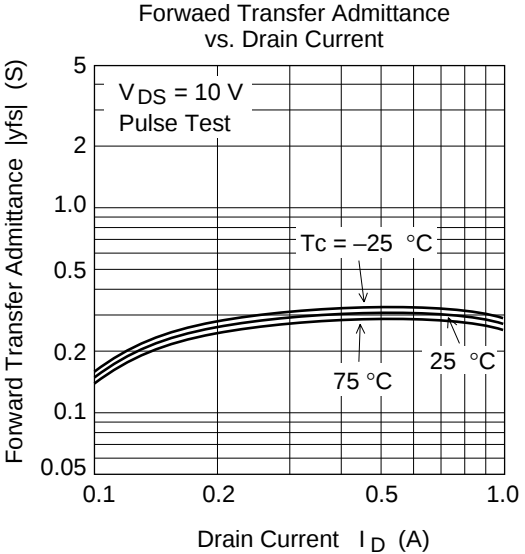
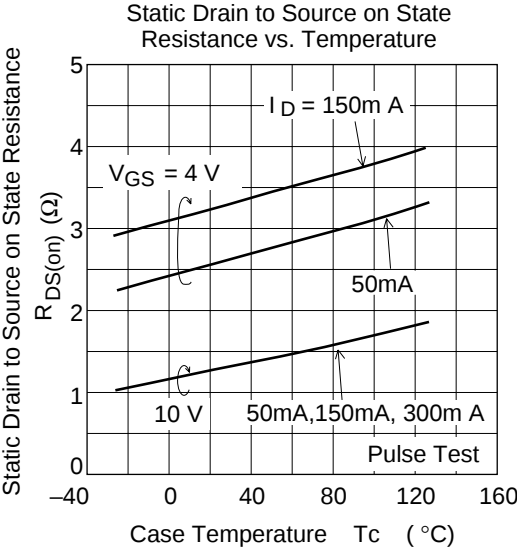
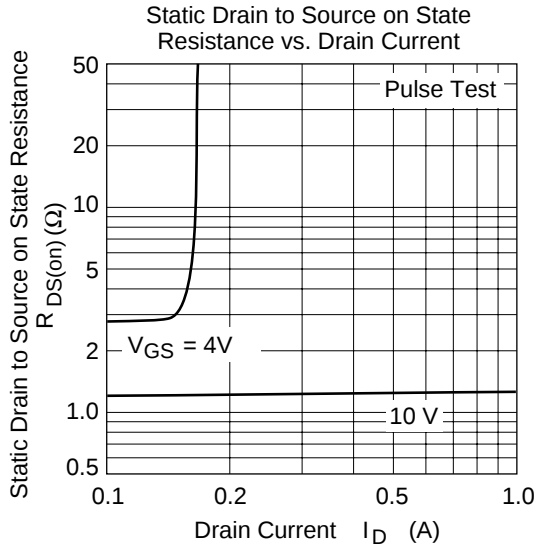
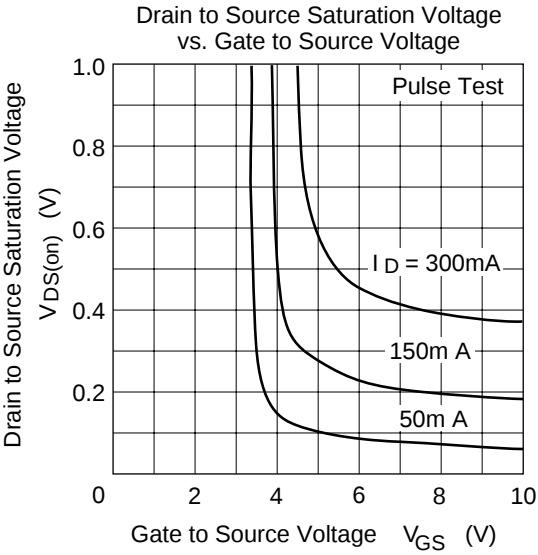


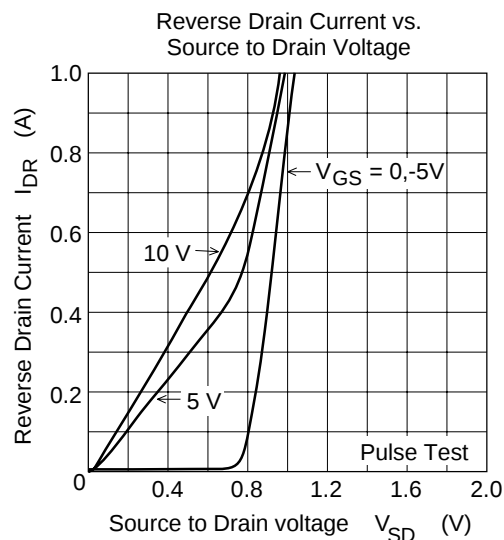
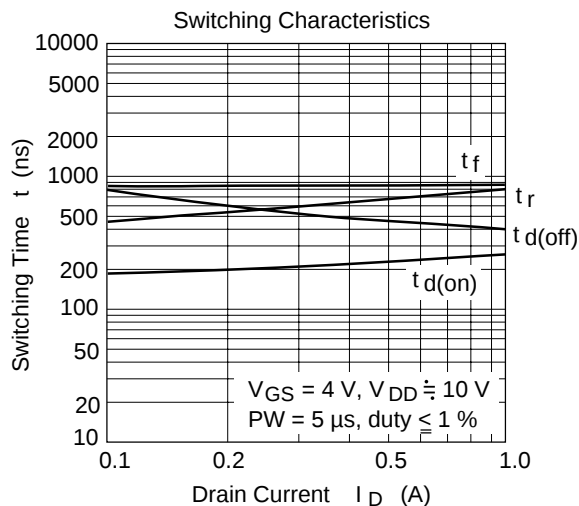
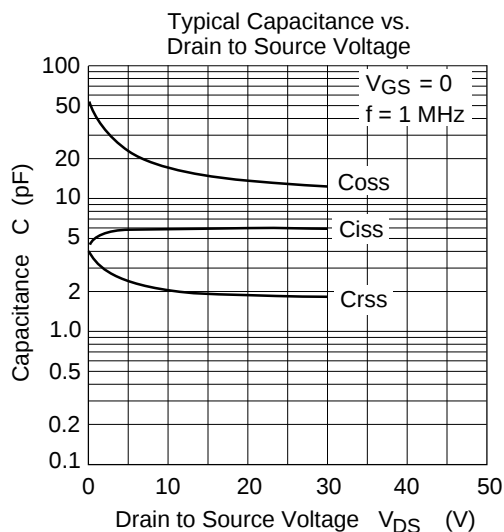
*Value on the alumina ceramic board.(12.5x20x0.7mm)



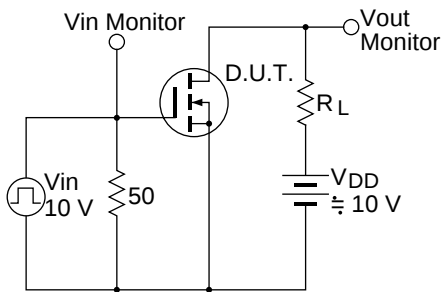
Value on the alumina ceramic board.(12.5x20x0.7mm)



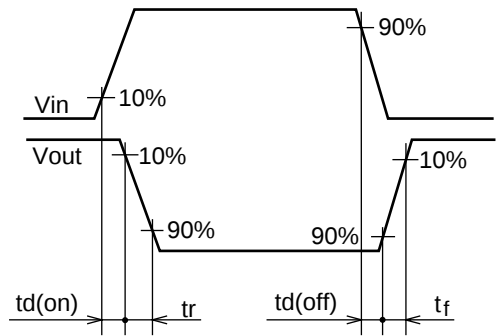




Switching Time Test Circuit



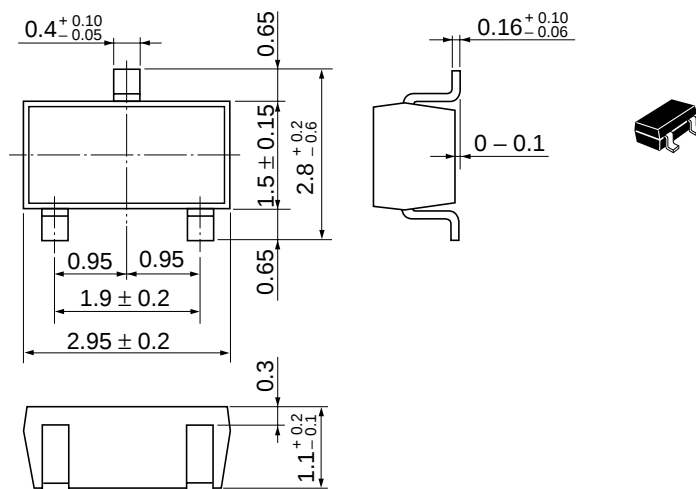
Waveforms



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.011 g

Cautions

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