2SK1070

Silicon N-Channel Junction FET

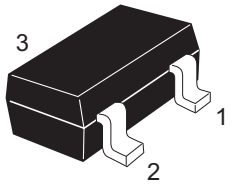
R07DS0282EJ0400
Rev.4.00
Jan 10, 2014

Application

- Low frequency / High frequency amplifier

Outline

RENESAS Package code: PLSP0003ZB-A
(Package name: MPAK)



1. Drain
2. Source
3. Gate

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Gate to drain voltage	V_{GDO}	–22	V
Gate to source voltage	V_{GSO}	–22	V
Drain current	I_D	50	mA
Gate current	I_G	10	mA
Channel power dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

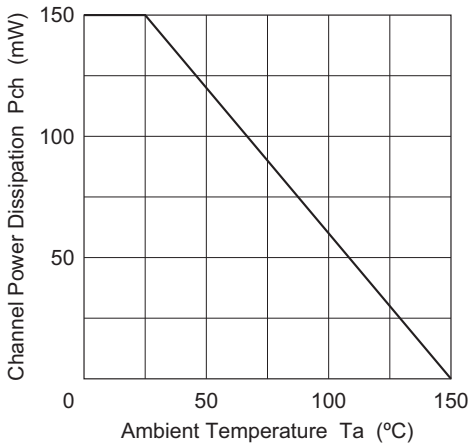
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Gate cutoff current	I_{GSS}	—	—	–10	nA	V_{GS} = –15 V, V_{DS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	–22	—	—	V	I_G = –10 µA, V_{DS} = 0
Drain current	I_{DSS}*[1]	12	—	40	mA	V_{DS} = 5 V, V_{GS} = 0, Pulse test
Gate to source cutoff voltage	$V_{GS(off)}$	0	—	–2.5	V	V_{DS} = 5 V, I_D = 10 µA
Forward transfer admittance	$\|y_{fs}\|$	20	30	—	mS	V_{DS} = 5 V, V_{GS} = 0, f = 1 kHz
Input capacitance	Ciss	—	9	—	pF	V_{DS} = 5 V, V_{GS} = 0, f = 1 MHz

Notes: 1. The 2SK1070 is grouped by I_{DSS} as follows.

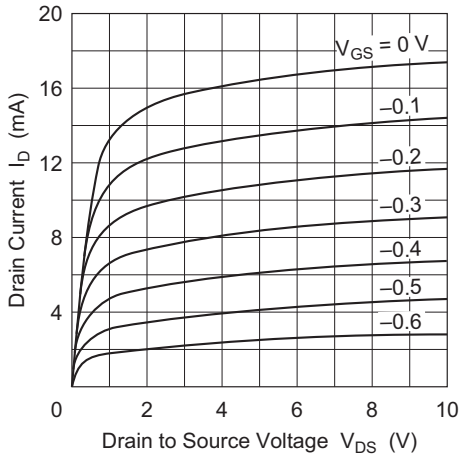
Grade	C	D	E
Mark	PIC	PID	PIE
I_{DSS}	12 to 22	18 to 30	27 to 40

Main Characteristics

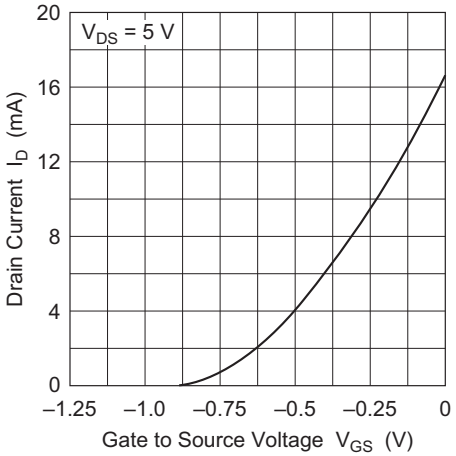
Maximum Channel Dissipation Curve



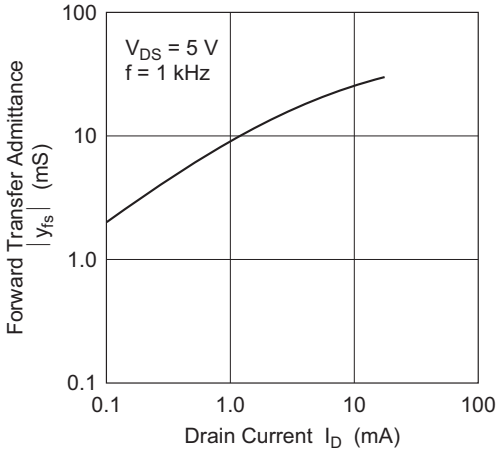
Typical Output Characteristics



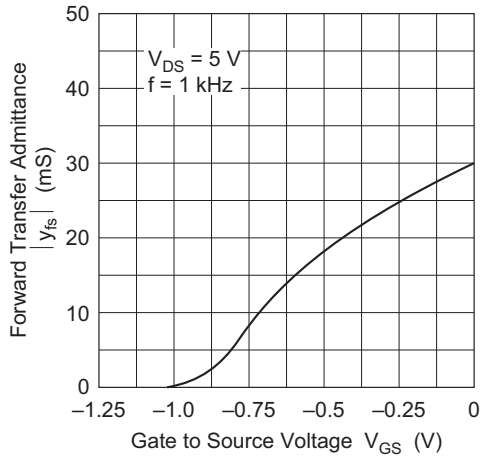
Typical Transfer Characteristics



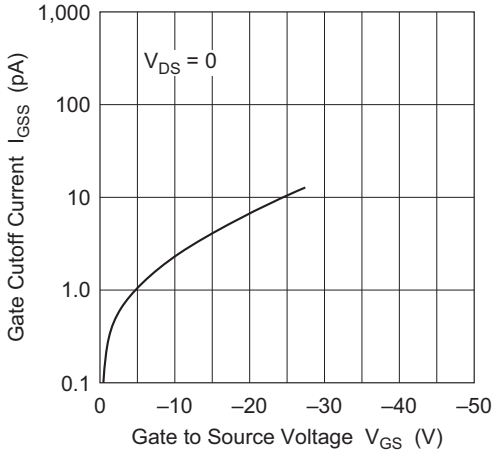
Forward Transfer Admittance vs. Drain Current



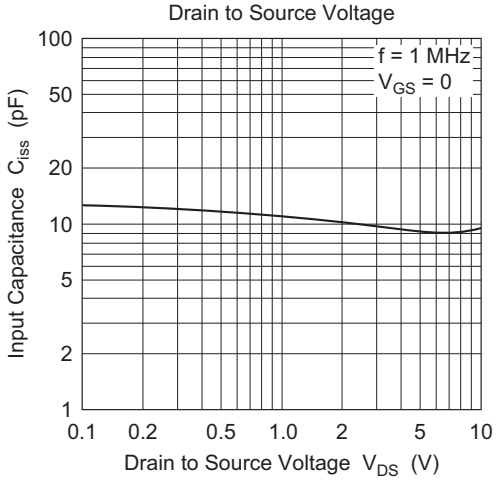
Forward Transfer Admittance vs. Gate to Source Voltage



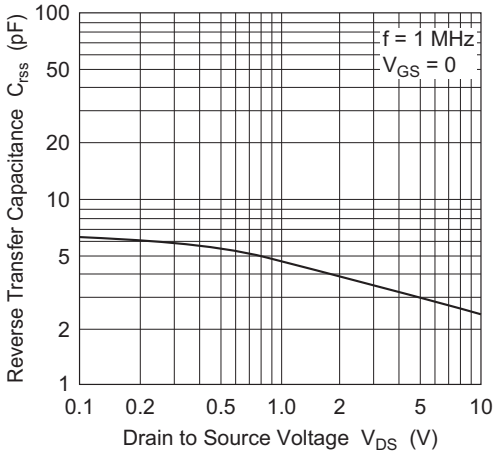
Gate Cutoff Current vs. Gate to Source Voltage



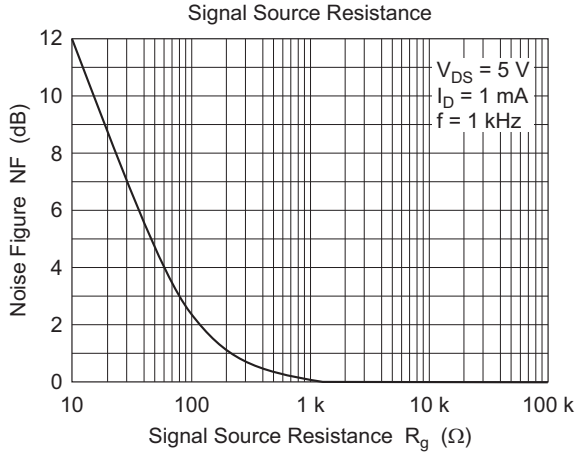
Input Capacitance vs. Drain to Source Voltage



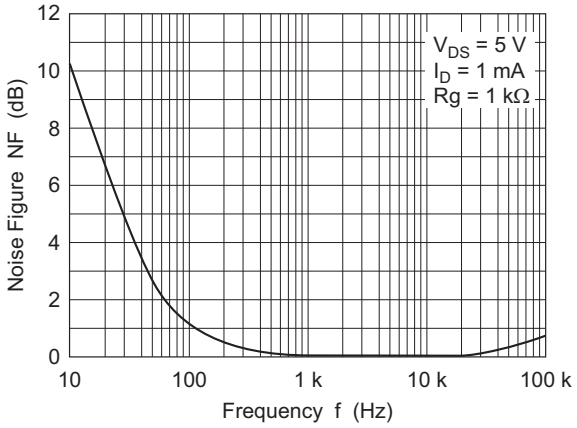
Reverse Transfer Capacitance vs. Drain to Source Voltage



Noise Figure vs. Signal Source Resistance

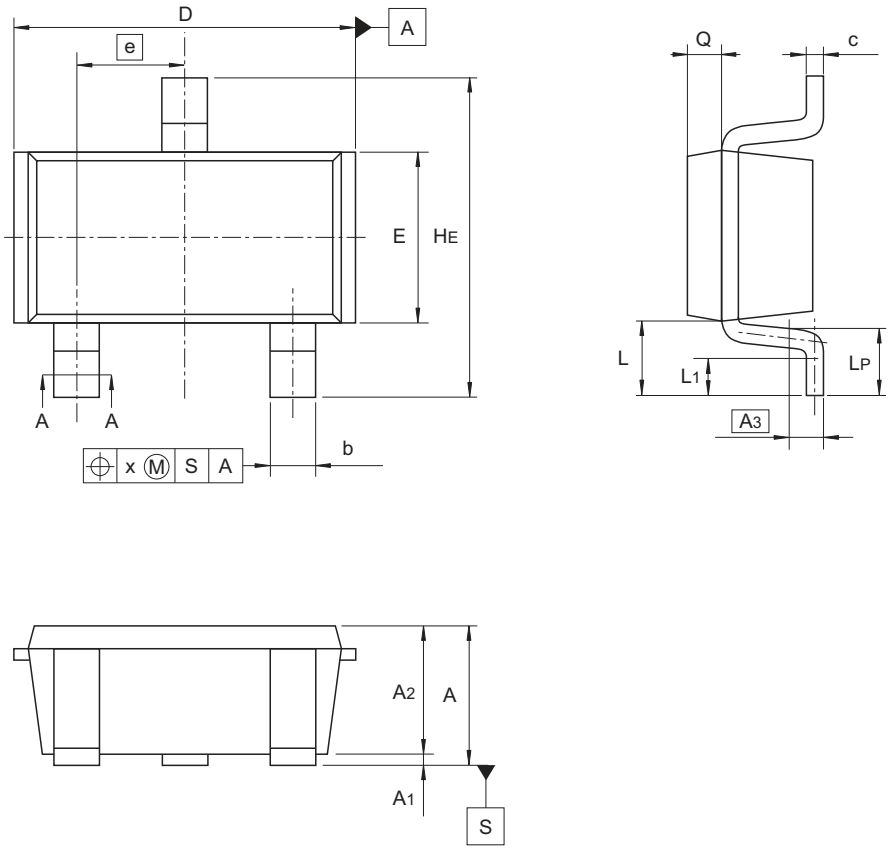


Noise Figure vs. Frequency



Package Dimensions

JEITA Package Code	RENESAS Code	Previous Code	MASS (Typ) [g]
SC-59A	PLSP0003ZB-A	MPAK(T) / MPAK(T)V	0.011



Reference Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	1.0	—	1.3
A_1	0	—	0.1
A_2	1.0	1.1	1.2
$\boxed{A_3}$	—	0.25	—
b	0.35	0.4	0.5
c	0.1	0.16	0.26
D	2.7	—	3.1
E	1.35	1.5	1.65
$\boxed{e}$	—	0.95	—
H_E	2.2	2.8	3.0
L	0.35	—	0.75
L_1	0.15	—	0.55
L_P	0.25	—	0.65
x	—	—	0.05
Q	—	0.3	—

Ordering Information

Orderable Part Number	Quantity	Shipping Container
2SK1070PICTL-E 2SK1070PIDTL-E 2SK1070PIETL-E 2SK1070PICTL-H 2SK1070PIDTL-H 2SK1070PIETL-H	3000	ϕ178 mm reel, 8 mm Emboss 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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