



RF Low Noise FET CE3524K3

24GHz Super Low Noise FET in Hollow Plastic PKG

DESCRIPTION

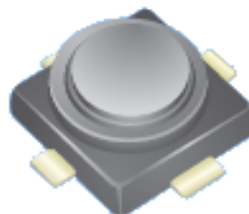
- Super Low Noise and High Gain
- Hollow (Air cavity) Plastic package

FEATURES

- Super Low noise figure and high associated gain:
NF = 0.84dB TYP., Ga = 13.4dB TYP.
@V_{DS} = 2V, I_D = 10mA, f = 24GHz

PACKAGE

- Micro-X plastic package



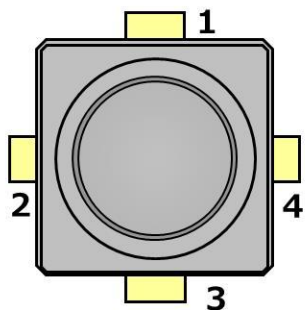
APPLICATIONS

- DBS LNB gain-stage, Mix-stage
- Low noise amplifier for microwave communication systems

ORDERING INFORMATION

Part Number	Order Number	Package	Marking	Description
CE3524K3	CE3524K3-C1	Micro-X plastic package	TBD	<ul style="list-style-type: none"> • Embossed tape 8 mm wide • Pin 4 (Gate) faces the perforation side of the tape • MOQ 10 kpcs/reel

PIN CONFIGURATION AND INTERNAL BLOCK DIAGRAM



Pin No.	Pin Name
1	Source
2	Drain
3	Source
4	Gate

ABSOLUTE MAXIMUM RATINGS

(TA = +25°C, unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	V_{DS}	4.0	V
Gate to Source Voltage	V_{GS}	-3.0	V
Drain Current	I_D	I_{DSS}	mA
Gate Current	I_G	80	μA
Total Power Dissipation	P_{tot}	125	mW
Channel Temperature	T_{ch}	+150	°C
Storage Temperature	T_{stg}	-55 to +125	°C
Operation Temperature	T_{op}	-55 to +125 ^{Note}	°C

Note Refer to Total Power Dissipation vs. Ambient Temperature graph on page 4

RECOMMENDED OPERATING RANGE

(TA = +25°C, unless otherwise specified)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Drain to Source Voltage	V_{DS}	TBD	+2	TBD	V
Drain Current	I_D	TBD	10	TBD	mA

ELECTRICAL CHARACTERISTICS

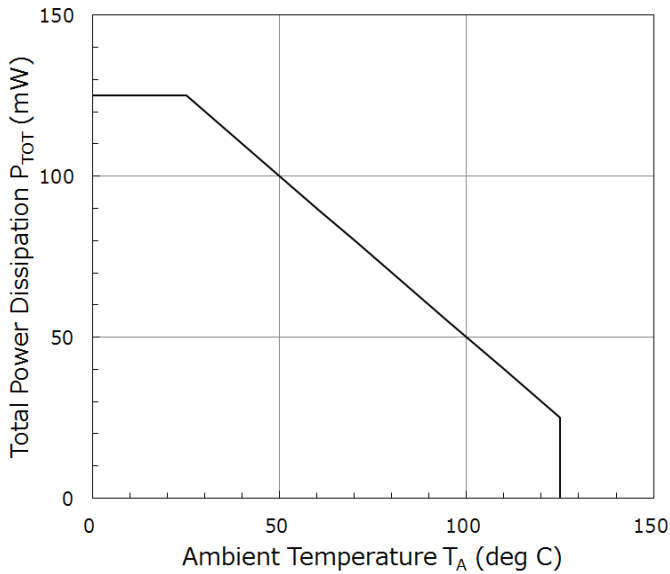
(TA = +25°C, unless otherwise specified)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Gate to Source Leak Current	I_{GSO}	$V_{GS} = -3.0V$	TBD	0.4	TBD	μA
Saturated Drain Current	I_{DSS}	$V_{DS} = 2V, V_{GS} = 0V$	TBD	40	TBD	mA
Gate to Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 2V, I_D = 100\mu A$	TBD	-0.75	TBD	V
Transconductance	Gm	$V_{DS} = 2V, I_D = 10mA$	TBD	62	-	mS
Noise Figure	NF	$V_{DS} = 2V, I_D = 10mA,$ $f = 24GHz$	TBD	0.84	TBD	dB
Associated Gain	Ga		TBD	13.4	TBD	dB

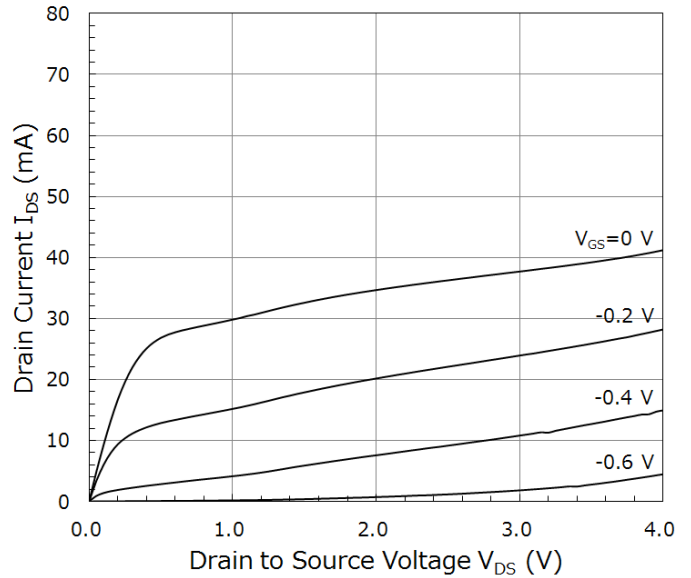
TYPICAL CHARACTERISTICS :

(TA=+25°C, unless otherwise specified)

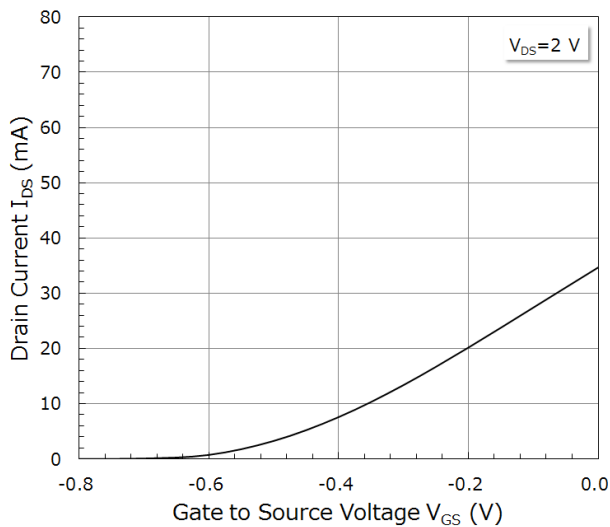
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



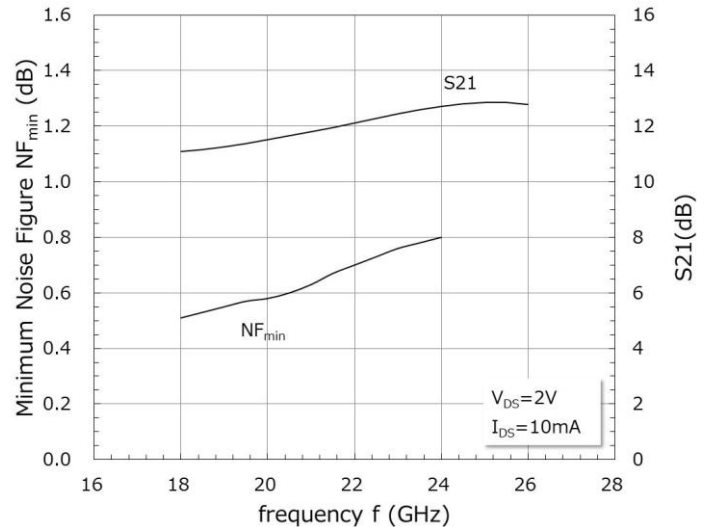
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE



MINIMUM NOISE FIGURE & ASSOCIATED GAIN vs. DRAIN CURRENT



S-PARAMETERS

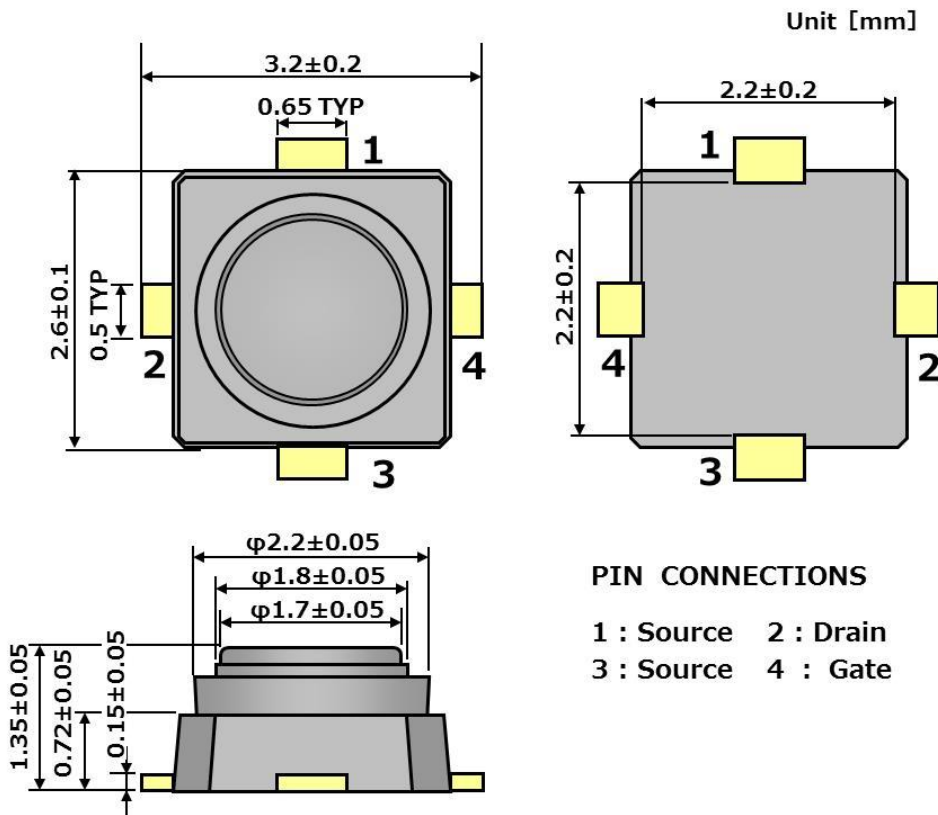
S-Parameters are available on CEL's Part Summary page under S-parameters

RECOMMENDED SOLDERING CONDITIONS

Recommended Soldering Conditions are available on CEL's Part Summary page under Associated Documents

PACKAGE DIMENSIONS

Micro-X plastic package



REVISION HISTORY

Version	Change to current version	Page(s)
CDS-0036-01 (Issue A) October 19, 2016	Preliminary datasheet	N/A

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This product uses gallium arsenide (GaAs) of the toxic substance appointed in laws and ordinances. GaAs vapor and powder are hazardous to human health if inhaled or ingested.

- Do not dispose in fire or break up this product.
- Do not chemically make gas or powder with this product.
- When discarding this product, please obey the laws of your country.
- Do not lick the product or in any way allow it to enter the mouth.

[CAUTION]

Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions should be used at all times.

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