

## 12GHz Super Low Noise FET in Hollow Plastic PKG

### DESCRIPTION

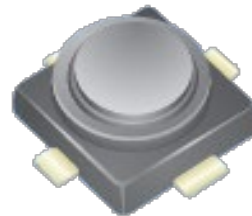
- Super Low Noise and High Gain
- Hollow (Air Cavity) Plastic package

### FEATURES

- Super Low noise figure and high associated gain:  
NF = 0.32 dB TYP., Ga = 14.0 dB TYP.  
@VDS=2V, ID=10mA, f=12GHz

### PACKAGE

- Micro-X plastic package



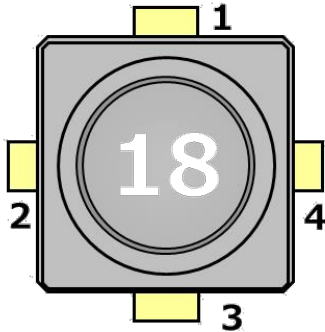
### APPLICATIONS

- KU Band LNB (Low Noise Block)  
Suitable for 1<sup>st</sup> Stage

### ORDERING INFORMATION

Part Number	Order Number	Package	Marking	Description
CE3522K2	CE3522K2-C1	Micro-X plastic package	18	<ul style="list-style-type: none"><li>• Embossed tape 8 mm wide</li><li>• Pin 4 (Gate) faces the perforation side of the tape</li><li>• MOQ 10kpcs/reel</li></ul>

## 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	$\mu A$
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 <sup>Note</sup>	°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	$V_{DS}$	+1	+2	+3	V
Drain Current	$I_D$	5	10	15	mA

## ELECTRICAL CHARACTERISTICS

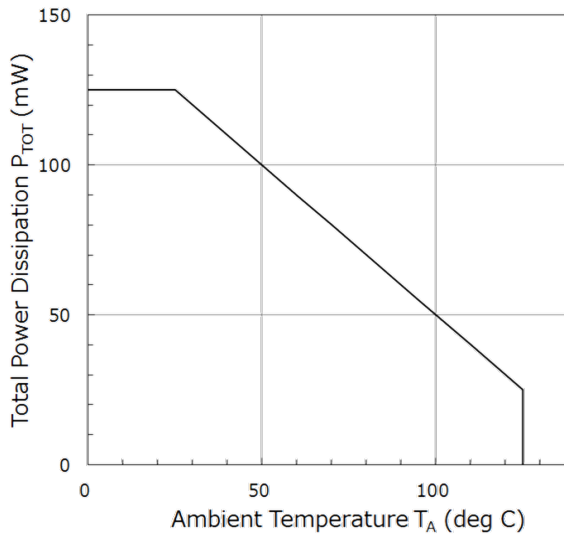
(TA = +25°C, unless otherwise specified)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Gate to Source Leak Current	$I_{GSO}$	$V_{GS} = -3.0V$	-	0.4	10	$\mu A$
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 2V, V_{GS} = 0V$	23	40	57	mA
Gate to Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 2V, I_D = 100\mu A$	-1.10	-0.75	-0.39	V
Transconductance	Gm	$V_{DS} = 2V, I_D = 10mA$	47	62	-	mS
Noise Figure	NF	$V_{DS} = 2V, I_D = 10mA,$ $f = 12GHz$	-	0.32	0.52	dB
Associated Gain	Ga		12.8	14	-	dB

### Typical Characteristics:

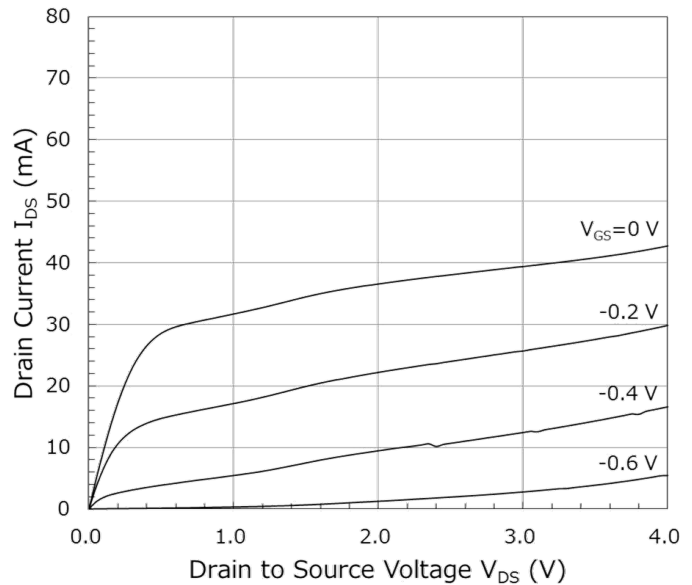
( $T_A = +25^\circ\text{C}$ , unless otherwise specified)

**TOTAL POWER DISSIPATION vs. AMBIEN**

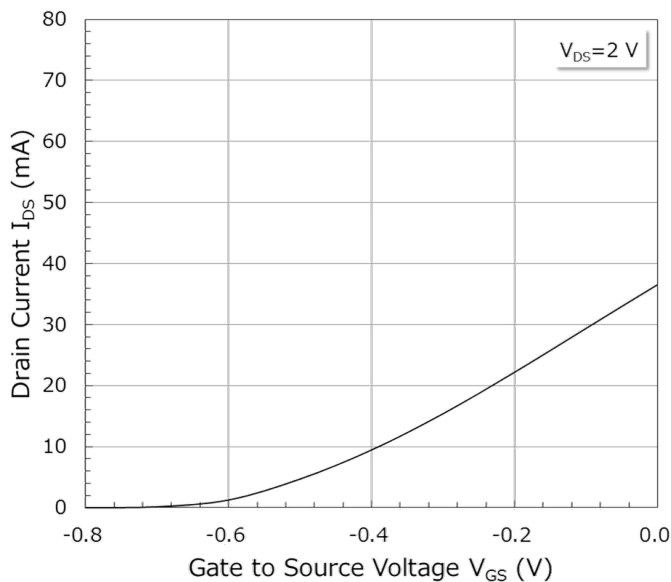


**T TEMPERATURE**

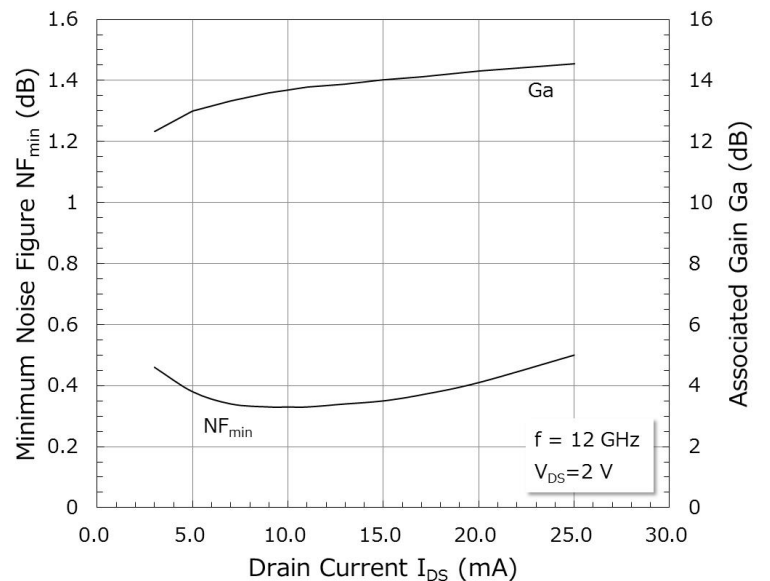
**DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE**



**DRAIN CURRENT vs. GATE TO SOURCE VOLTAGE**



**MINIMUM NOISE FIGURE & ASSOCIATED GAIN vs. DRAIN CURRENT**



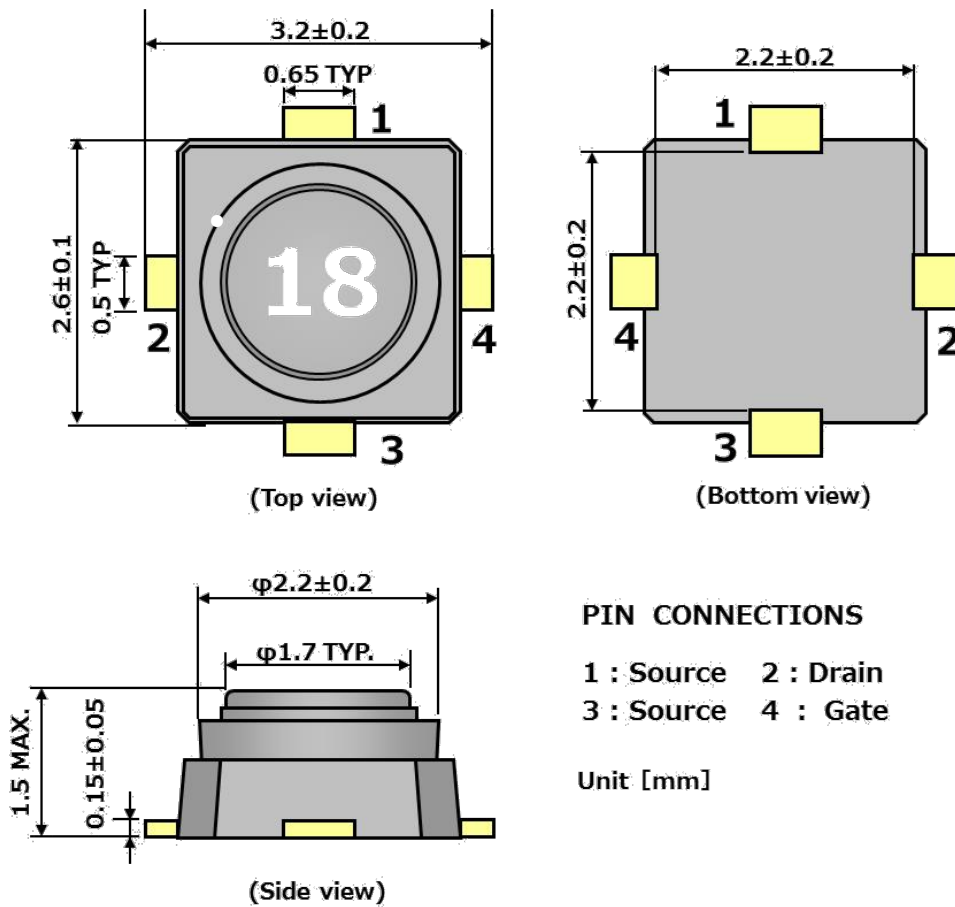
## S-PARAMETERS

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:



## REVISION HISTORY

Version	Change to current version	Page(s)
CDS-0018-04 (Issue A) January 12,2023	Initial datasheet	N/A

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- Do not lick the product or in any way allow it to enter the mouth.

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