

## 12GHz Low Noise FET in Dual Mold Plastic PKG

### DESCRIPTION

- Low Noise and High Gain
- Original Dual Mold Plastic package

### FEATURES

- Low noise figure and high associated gain  
NF=0.42dB TYP., Ga=12.2dB TYP. @VDS=2V,  
ID=10mA, f=12GHz

### PACKAGE

- Flat-lead 4-pin thin-type super minimold package



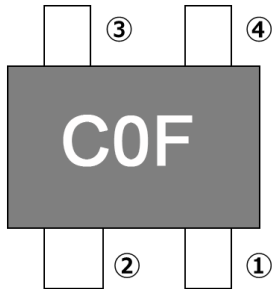
### APPLICATIONS

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

### ORDERING INFORMATION

Part Number	Order Number	Package	Marking	Description
CE3514M4	CE3514M4-C2	Flat-lead 4-pin thin-type super minimold package	C0F	<ul style="list-style-type: none"> <li>• Embossed tape 8 mm wide</li> <li>• Pin 1(Source), Pin 2 (Drain) Face the perforation side of the Tape</li> <li>• MOQ 15 kpcs/reel</li> </ul>

## PIN CONFIGURATION :



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

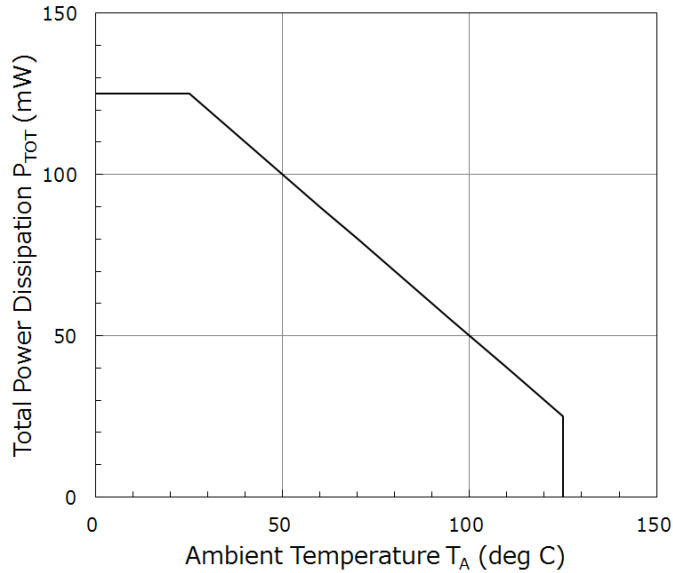
(TA = +25°C, unless otherwise specified)

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	$I_{DSS}$	$V_{DS} = 2V, V_{GS} = 0V$	27	47.5	68	mA
Gate to Source Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 2V, I_D = 120\mu A$	-1.10	-0.75	-0.39	V
Transconductance	Gm	$V_{DS} = 2V, I_D = 10mA$	54	69	-	mS
Noise Figure	NF	$V_{DS} = 2V, I_D = 10mA,$ $f = 12GHz$	-	0.42	0.62	dB
Associated Gain	Ga		10.5	12.2	-	dB

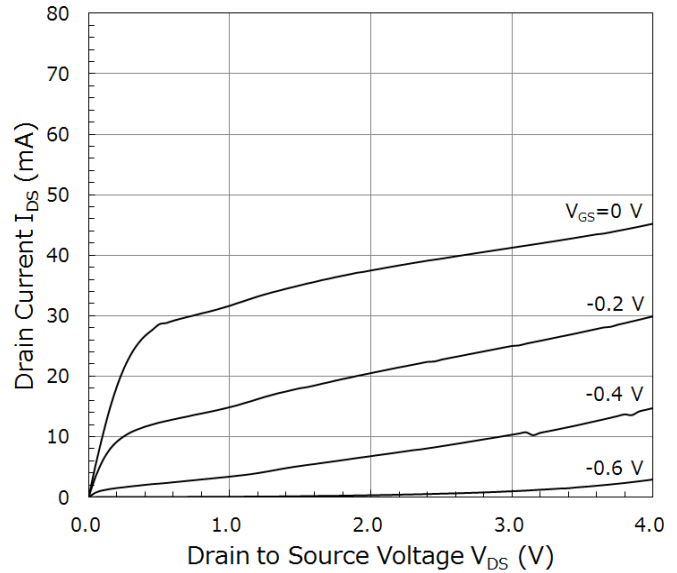
## TYPICAL CHARACTERISTICS :

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

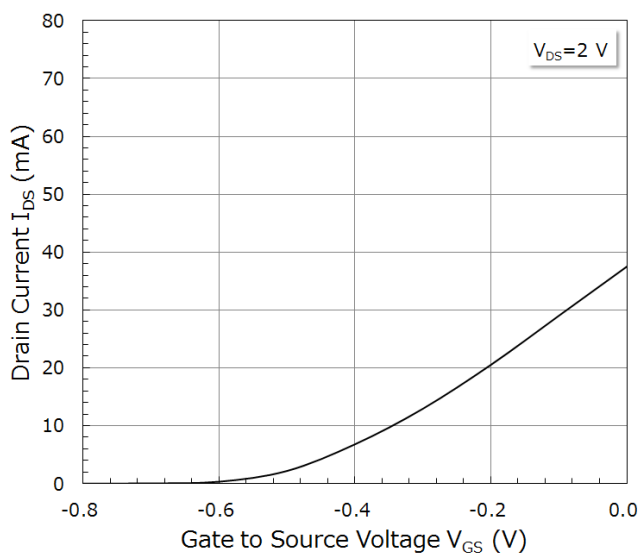
### TOTAL POWER DISSIPATION VS. AMBIENT TEMPERATURE



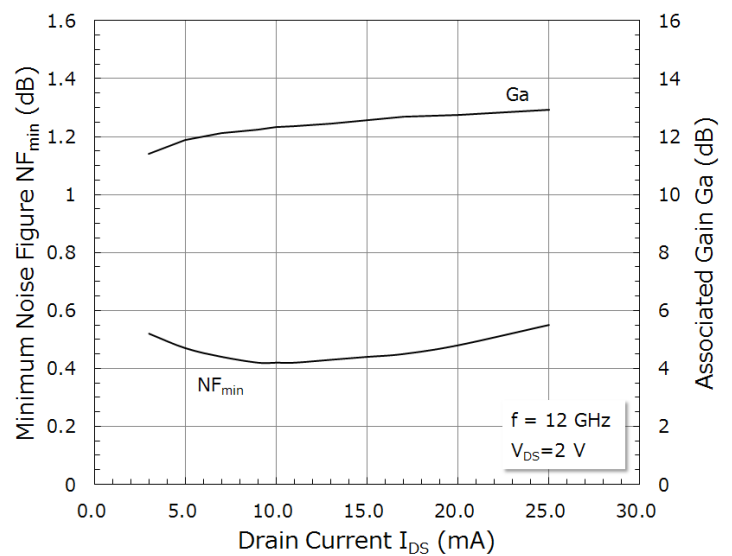
### DRAIN CURRENT VS. DRAIN TO SOURCE VOLTAGE



### DRAIN CURRENT VS. GATE TO SOURCE VOLTAGE



### MINIMUM NOISE FIGURE & ASSOCIATED GAIN VS. DRAIN CURRENT



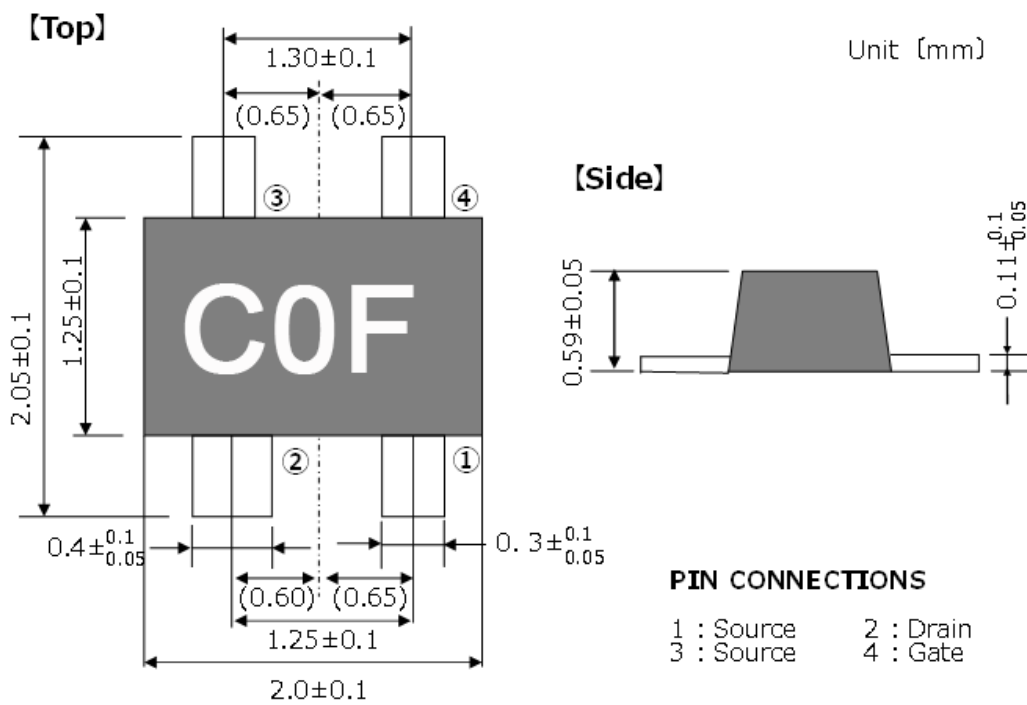
## S-PARAMETERS

S-Parameters are available on the CEL web site.

## RECOMMENDED SOLDERING CONDITIONS

Recommended Soldering Conditions are provided on the CEL web site.

## PACKAGE DIMENSIONS



## REVISION HISTORY

Version	Change to current version	Page(s)
CDS-0021-02 (Issue A) July 28, 2016	Initial datasheet	N/A

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