RF Low Noise FET

CE3514M4

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

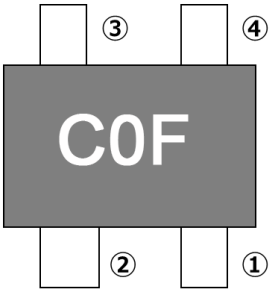
APPLICATIONS

- 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	• Embossed tape 8 mm wide • Pin 1(Source), Pin 2 (Drain) Face the perforation side of the Tape • MOQ 15 kpcs/reel

PIN CONFIGURATION :



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

ABSOLUTE MAXIMUM RATINGS

(T_A = +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

(T_A = +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

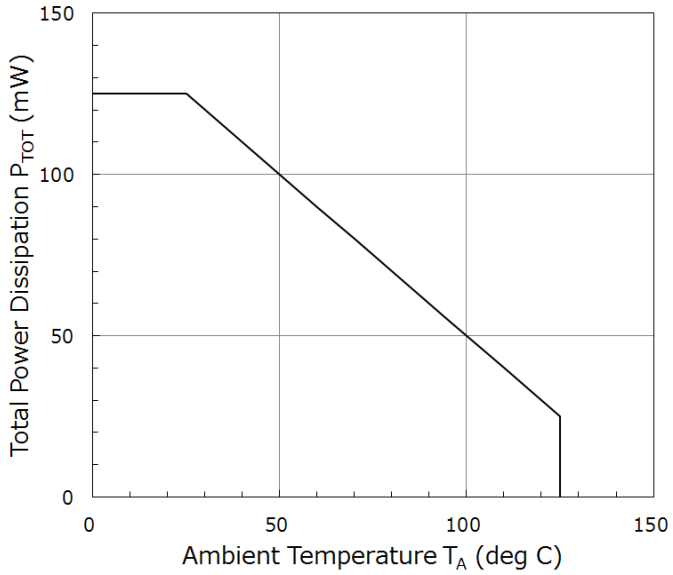
(T_A = +25˚C, unless otherwise specified)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Gate to Source Leak Current	I_{GSO}	V_{GS} = -3.0V	-	0.4	10	µA
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 = 120µA	-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

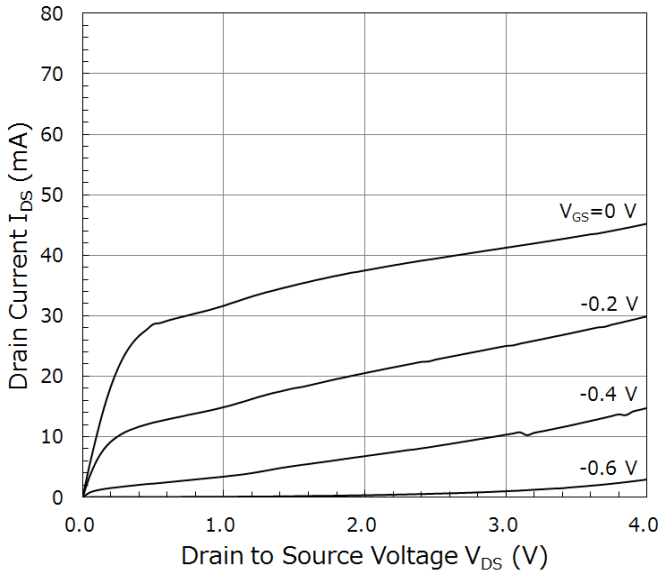
TYPICAL CHARACTERISTICS :

(TA=+25℃, unless otherwise specified)

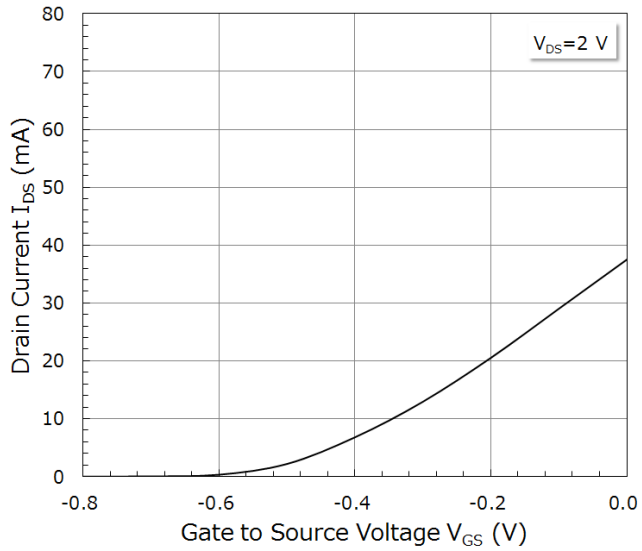
TOTAL POWER DISSIPATION VS. AMBIENT TEMPERATURE



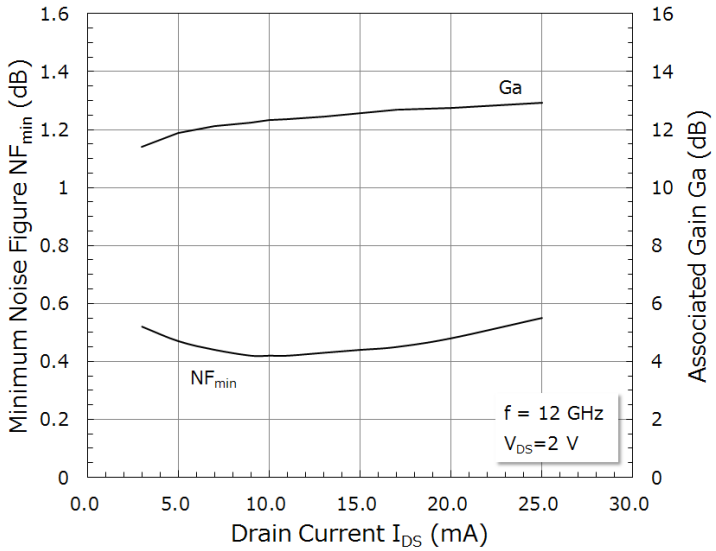
DRAIN CURRENT VS. DRAIN TO SOURCE VOLTAGE



DRAIN CURRENT VS. GATE TO SOURCE VOLTAGE



MINIMUM NOISE FIGURE & ASSOCIATED GAIN VS. DRAIN CURRENT



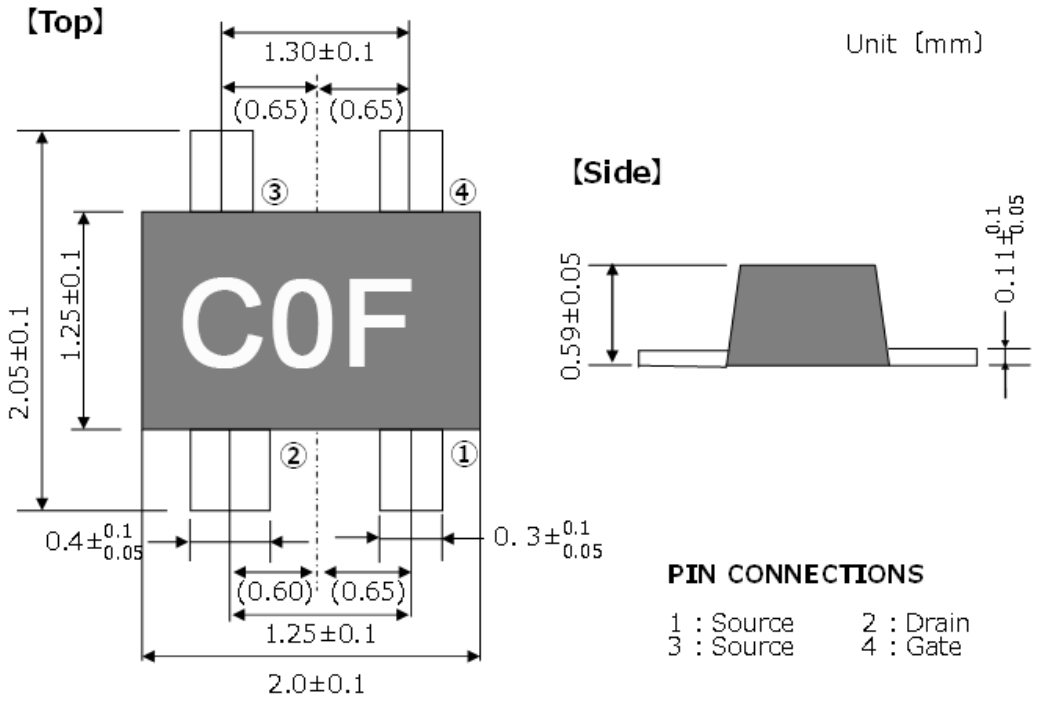
S-PARAMETERS

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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[CAUTION]

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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