N-Channel JFET 30 V, 1.2 to 3.0 mA, 5.0 mS, SOT-883

TF412S

ON Semiconductor®

www.onsemi.com

Features

- Small IGSS: Max −1.0 nA (V_{GS} = −20 V, V_{DS} = 0 V)
- Small Ciss: Typ 4 pF (V_{DS} = 10 V, V_{GS} = 0 V, f = 1 MHz)
- Ultrasmall Package Facilitates Miniaturization in End Products
- This is a Pb−Free and Halogen Free Device

Applications

- Low−Frequency General−purpose Amplifier, Impedance Conversion, Infrared Sensor Applications

Specifications

ABSOLUTE MAXIMUM RATINGS (at Ta = 25°C)

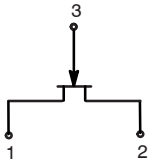
Symbol	Parameter	Value	Unit
V_{DSX}	Drain−to−Source Voltage	30	V
V_{GDS}	Gate−to−Drain Voltage	−30	V
I_G	Gate Current	10	mA
I_D	Drain Current	10	mA
P_D	Power Dissipation	100	mW
T_j	Junction Temperature	150	°C
Tstg	Storage Temperature	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

NOTE: This product is designed to “ESD immunity < 200 V*”, so please take care when handling.

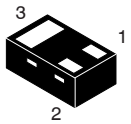
* Machine Model

ELETRICAL CONNECTION



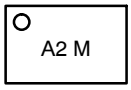
1: Source
2: Drain
3: Gate

Top View



SOT−883 (XDFN3)
CASE 506CB

MARKING DIAGRAM



A2 = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
TF412ST5G	SOT−883	8.000 Tape / Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (at T_A = 25°C)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{(BR)GDS}$	Gate−to−Drain Breakdown Voltage	I_G = −10 μA, V_{DS} = 0 V	−30			V
I_{GSS}	Gate−to−Source Leakage Current	V_{GS} = −20 V, V_{DS} = 0 V			−1.0	nA
V_{GS}(off)	Cutoff Voltage	V_{DS} = 10 V, I_D = 1 μA	−0.18	−0.80	−1.5	V
I_{DSS}	Drain Current	V_{DS} = 10 V, V_{GS} = 0 V	1.2		3.0	mA
| yfs |	Forward Transfer Admittance	V_{DS} = 10 V, V_{GS} = 0 V, f = 1 kHz	3.0	5.0		mS
Ciss	Input Capacitance	V_{DS} = 10 V, V_{GS} = 0 V, f = 1 MHz		4		pF
Crss	Reverse Transfer Capacitance			1.1		pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL CHARACTERISTICS

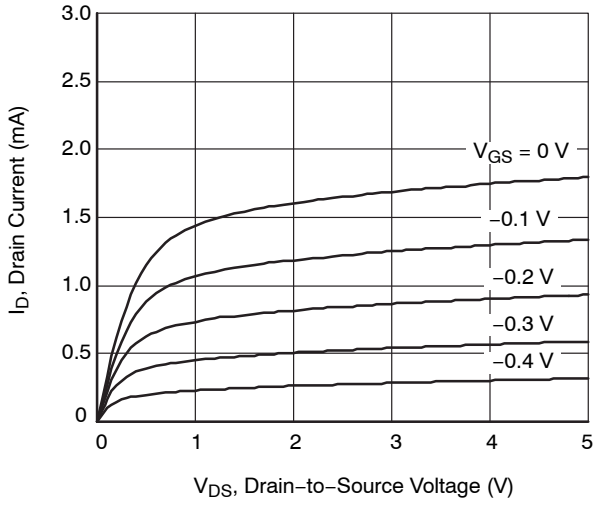


Figure 1. I_D – V_{DS}

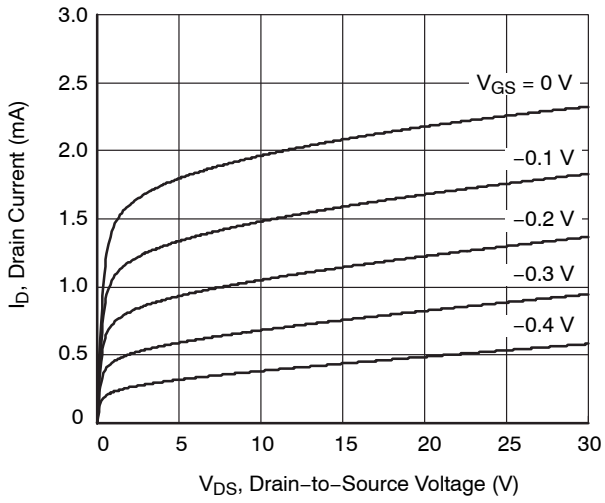


Figure 2. I_D – V_{DS}

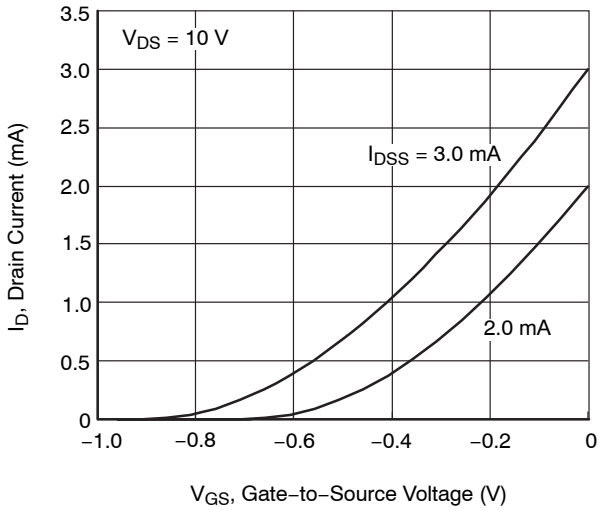


Figure 3. I_D – V_{GS}

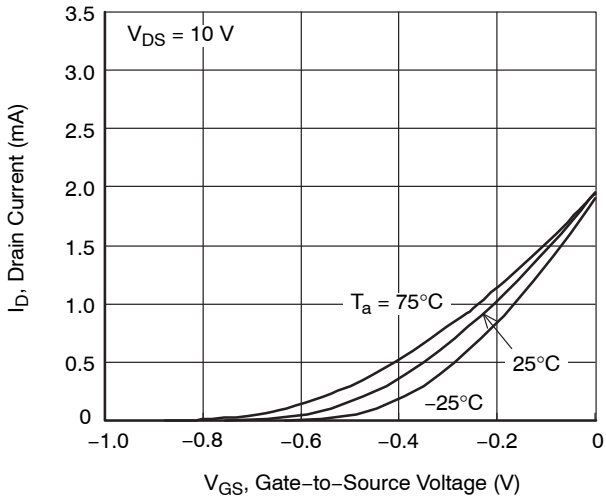


Figure 4. I_D – V_{GS}

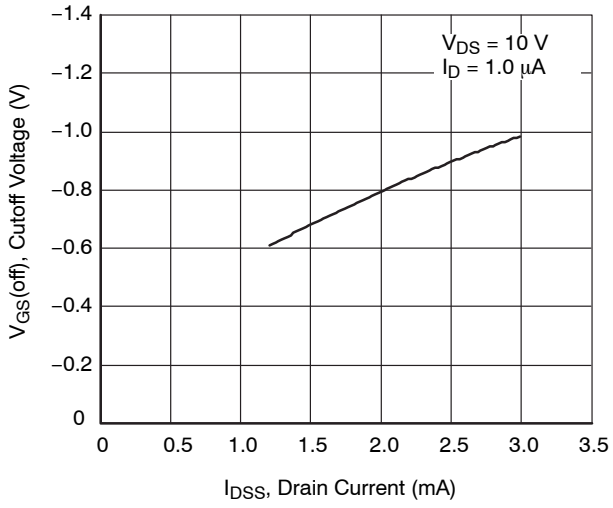


Figure 5. V_{GS}(off) – I_{DSS}

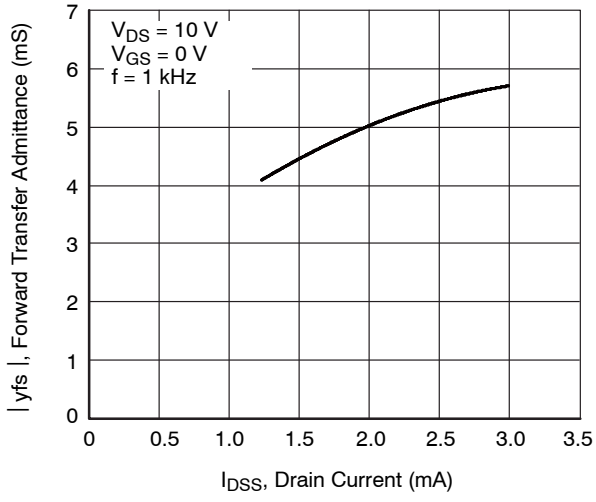


Figure 6. |yfs| – I_{DSS}

TYPICAL CHARACTERISTICS (continued)

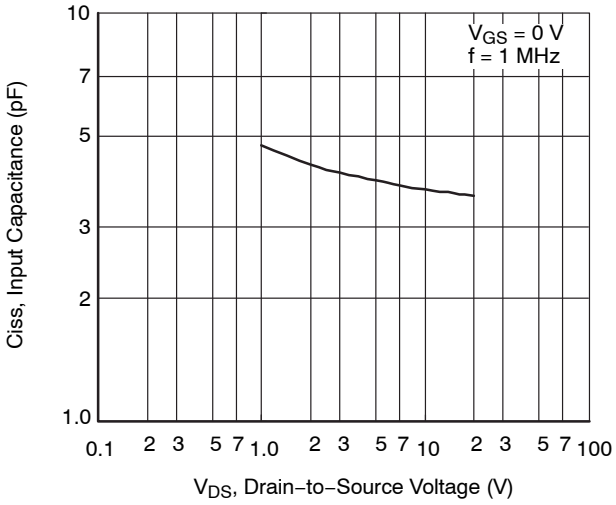


Figure 7. Ciss – V_{DS}

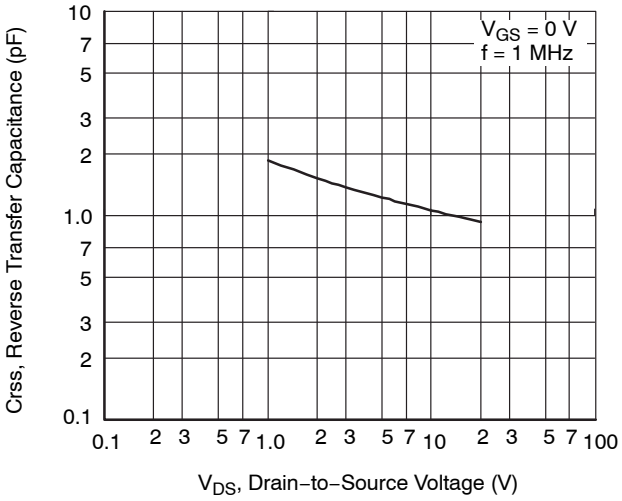


Figure 8. Crss – V_{DS}

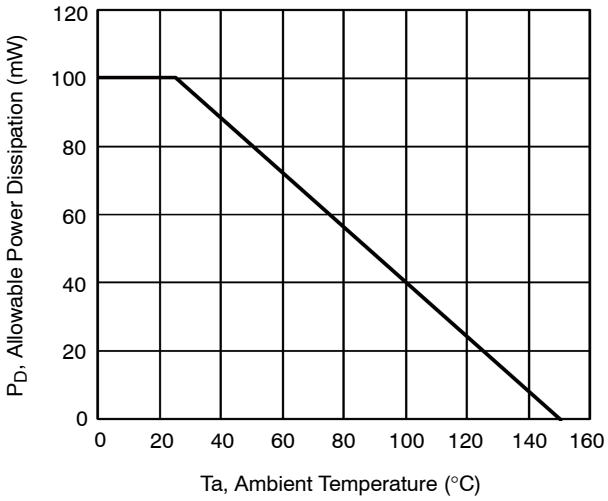


Figure 9. P_D – Ta

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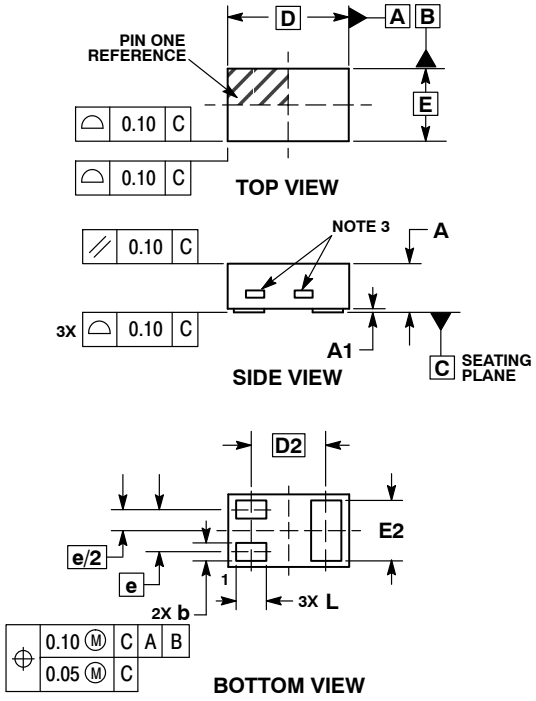
CASE 506CB
ISSUE A

DATE 30 MAR 2012

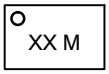
SCALE 8:1



NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. EXPOSED COPPER ALLOWED AS SHOWN.

	MILLIMETERS	
DIM	MIN	MAX
A	0.340	0.440
A1	0.000	0.030
b	0.075	0.200
D	0.950	1.075
D2	0.620 BSC	
e	0.350 BSC	
E	0.550	0.675
E2	0.425	0.550
L	0.170	0.300

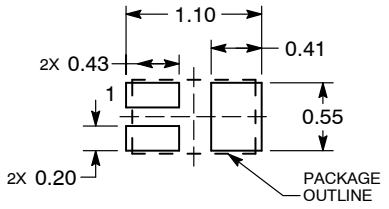
GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G”, may or not be present.

RECOMMENDED SOLDER FOOTPRINT*



DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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DESCRIPTION:	**SOT−883 (XDFN3), 1.0X0.6, 0.35P**	**PAGE 1 OF 1**

PUBLICATION ORDERING INFORMATION

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