



ON Semiconductor®

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TF412S

N-Channel JFET

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

Features

- Small IGSS : max -1.0nA ($V_{GS} = -20\text{V}$, $V_{DS} = 0\text{V}$)
- Small Ciss : typ 4pF ($V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{MHz}$)
- Ultrasmall package facilitates miniaturization in end products
- Halogen free compliance

Applications

- Low-Frequency general-purpose amplifier, impedance conversion, infrared sensor applications

Specifications

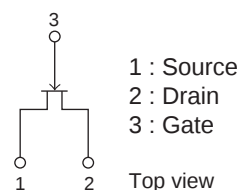
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSX}	30	V
Gate-to-Drain Voltage	V_{GDS}	-30	V
Gate Current	I_G	10	mA
Drain Current	I_D	10	mA
Power Dissipation	P_D	100	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

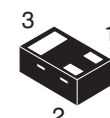
This product is designed to "ESD immunity $< 200\text{V}^*$ ", so please take care when handling.

* Machine Model

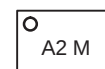
Electrical Connection



Marking



SOT-883



M = Date Code

Ordering & Package Information

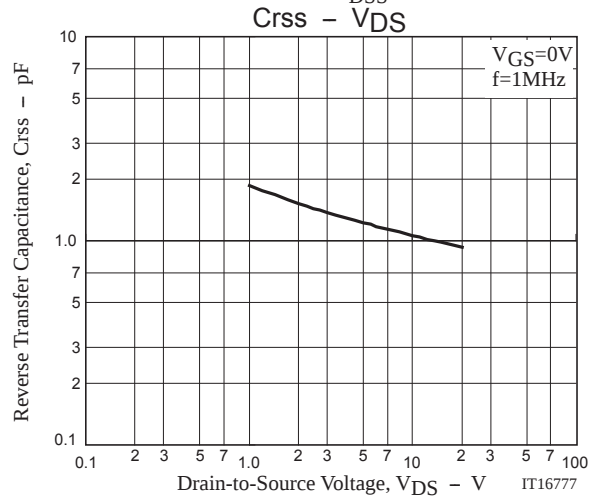
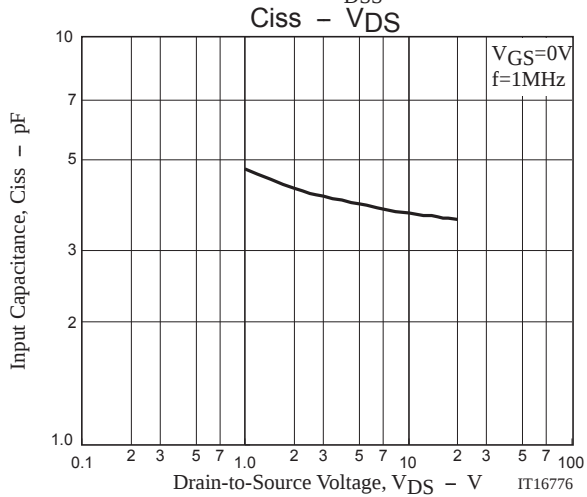
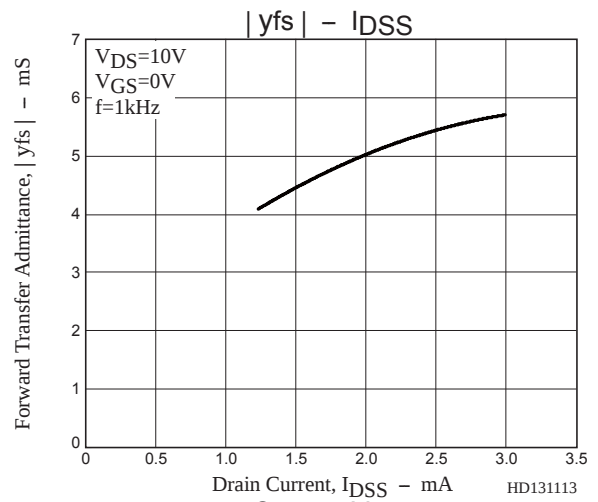
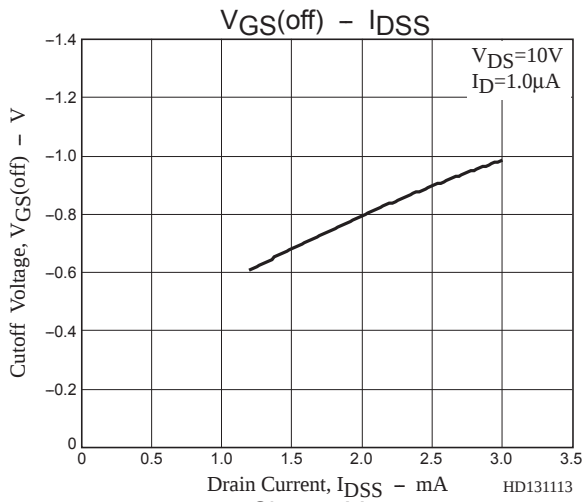
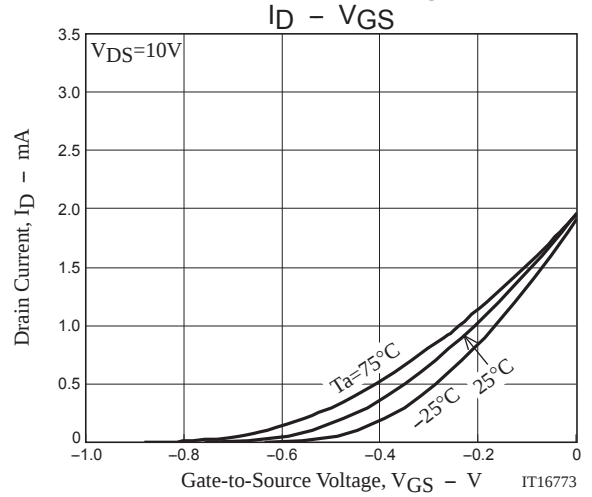
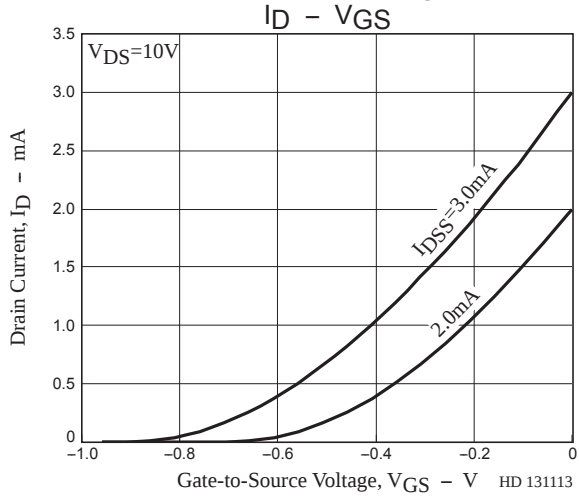
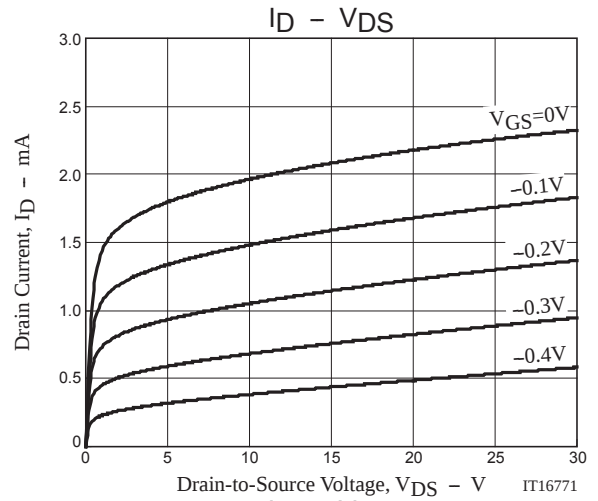
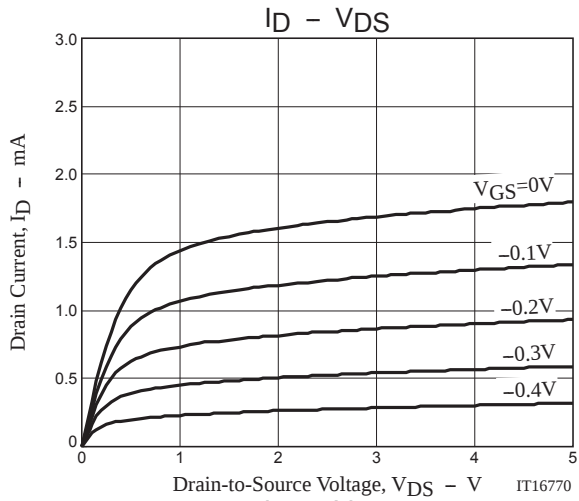
Device	Package	Shipping
TF412ST5G Pb-free and Halogen Free	SOT-883	8,000 pcs. / reel

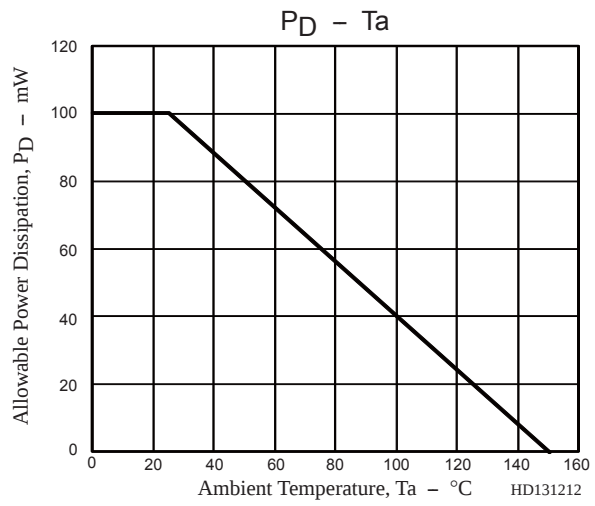
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10\mu\text{A}$, $V_{DS} = 0\text{V}$	-30			V
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS} = -20\text{V}$, $V_{DS} = 0\text{V}$			-1.0	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$, $I_D = 1\mu\text{A}$	-0.18	-0.80	-1.5	V
Drain Current	I_{DSS}	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$	1.2		3.0	mA
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{kHz}$	3.0	5.0		mS
Input Capacitance	Ciss	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{MHz}$		4		pF
Reverse Transfer Capacitance	Crss			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.





Package Dimensions

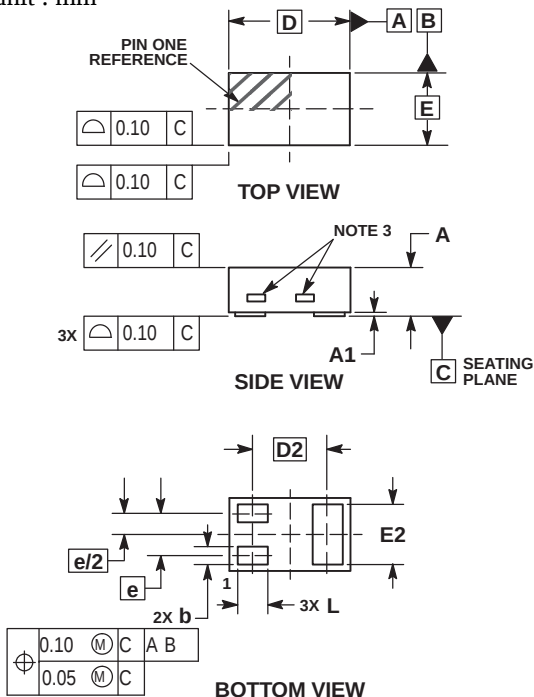
TF412ST5G

SOT-883 (XDFN3), 1.0x0.6, 0.35P

CASE 506CB

ISSUE A

unit : mm

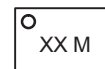


NOTES:

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.

*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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