Ordering number : EN*A2258

TF412

Advance Information

ON Semiconductor®

http://onsemi.com

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

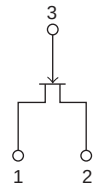
Features

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

Applications

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

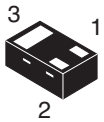
Electrical Connection



1 : Source
2 : Drain
3 : Gate

Top view

Marking



SOT-883

A2 M

M = Date Code

Ordering & Package Information

Device	Package	Shipping (Qty / Packing)
TF412T5G	SOT-883 (Pb-Free / Halogen Free)	8000 / Tape & Reel

Specifications

Absolute Maximum Ratings at Ta = 25°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	TBD	mW
Junction Temperature	Tj	50	°C
Storage Temperature	Tstg	–55 to +150	°C

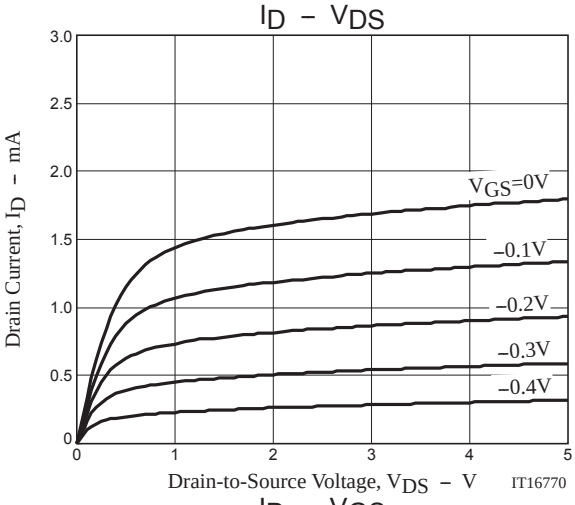
This product is designed to "ESD immunity < 200V*", so please take care when handling.
* Machine Model

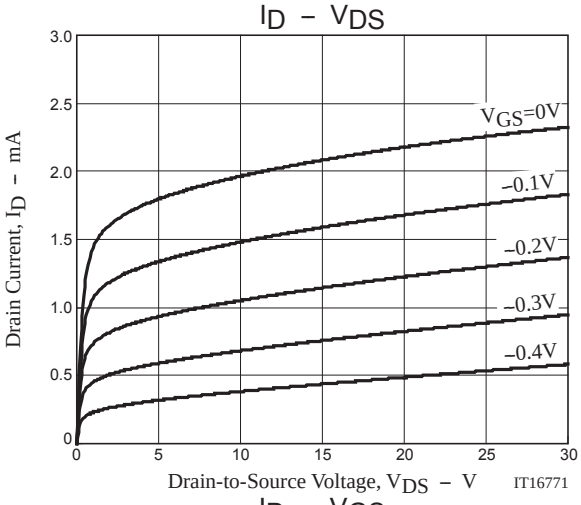
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

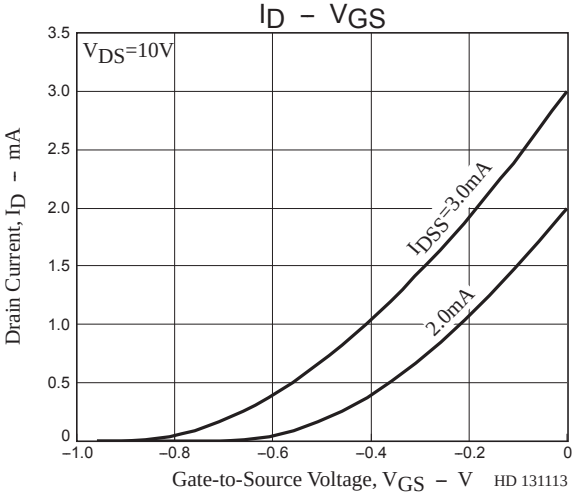
Electrical Characteristics at Ta = 25°C, V_M = 7.2V

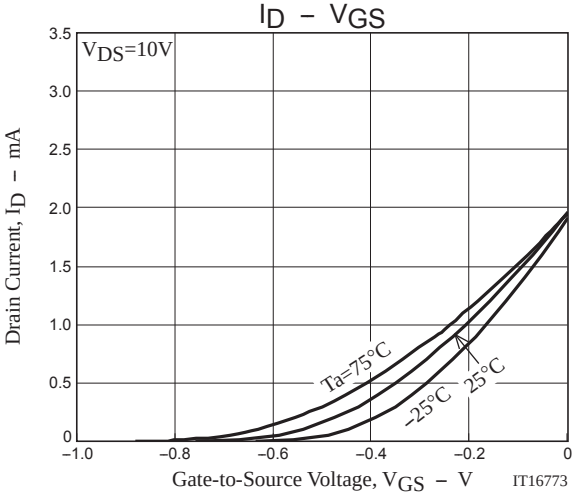
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G = –10μA, V_{DS}=0V	–30			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS} = –20V, V_{DS}=0V			–10	nA
Cutoff Voltage	$V_{GS}(off)$	V_{DS} = 10V, I_D = 1μA	–1.18	–0.60	–1.5	V
Drain Current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0V	1.2		3.0	mA
Forward Transfer Admittance	| yfs |	V_{DS} = 10V, V_{GS}=0V, f = 1kHz	3.0	5.0		mS
Input Capacitance	Ciss	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz		4		pF
Reverse Transfer Capacitance	Crss			1.1		pF

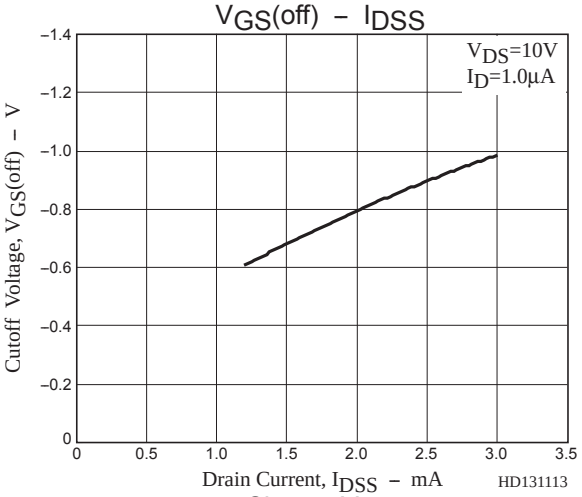
This document contains information on a new product. Specifications and information herein are subject to change without notice.

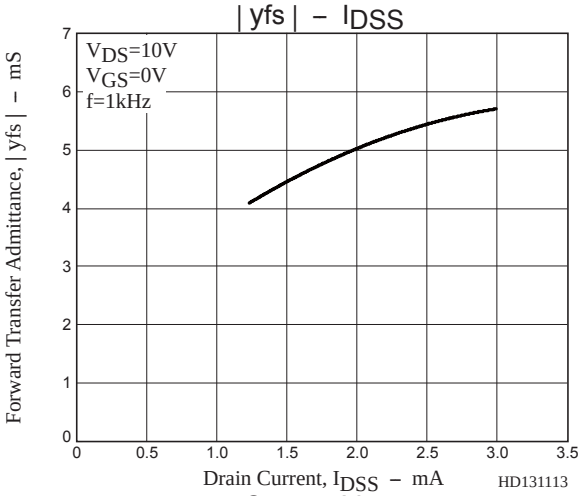

ID – VDS
Drain Current, ID – mA
VGS=0V
–0.1V
–0.2V
–0.3V
–0.4V
Drain-to-Source Voltage, VDS – V
IT16770

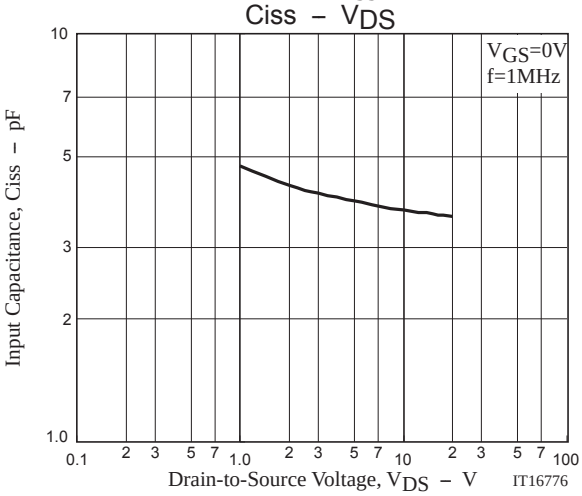

ID – VDS
Drain Current, ID – mA
VGS=0V
–0.1V
–0.2V
–0.3V
–0.4V
Drain-to-Source Voltage, VDS – V
IT16771

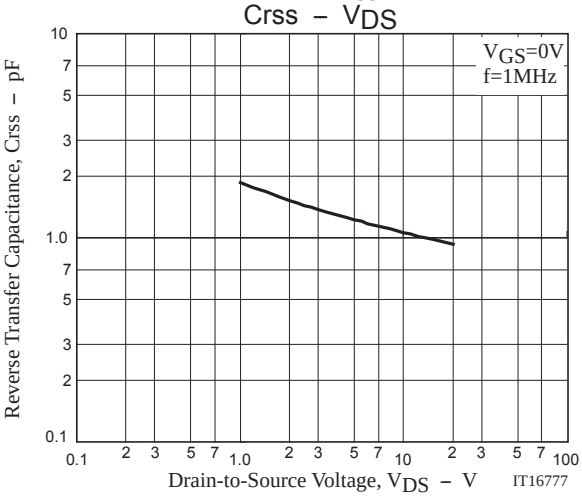

ID – VGS
VDS=10V
IDSS=3.0mA
2.0mA
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
HD 131113


ID – VGS
VDS=10V
Ta=75°C
25°C
–25°C
Drain Current, ID – mA
Gate-to-Source Voltage, VGS – V
IT16773


VGS(off) – IDSS
VDS=10V
ID=1.0µA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
HD131113


| yfs | – IDSS
VDS=10V
VGS=0V
f=1kHz
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
HD131113

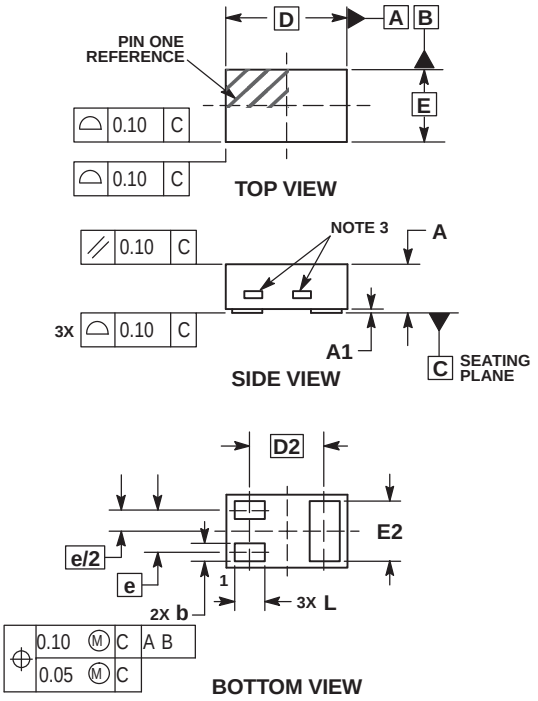

Ciss – VDS
VGS=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
IT16776


Crss – VDS
VGS=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
IT16777

Package Dimensions

unit : mm

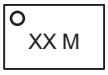
SOT-883 (XDFN3), 1.0x0.6, 0.35P
CASE 506CB
ISSUE A



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

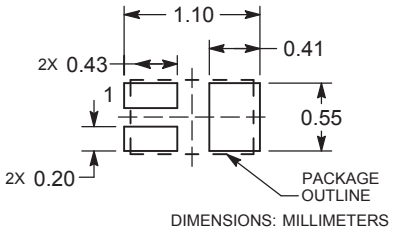
GENERIC MARKING DIAGRAM*



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.