



ON Semiconductor®

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# TF414

## N-Channel JFET

### 40V, 50 to 130 $\mu$ A, 0.11mS, SOT-883

#### Features

- Small  $I_{GSS}$  : max  $-500\text{pA}$  ( $V_{GS} = -20\text{V}$ ,  $V_{DS} = 0\text{V}$ )
- Small  $C_{iss}$  : typ  $0.7\text{pF}$  ( $V_{DS} = 10\text{V}$ ,  $V_{GS} = 0\text{V}$ ,  $f = 1\text{MHz}$ )
- Ultrasmall package facilitates miniaturization in end products
- Halogen free compliance

#### Applications

- Impedance conversion, infrared sensor applications

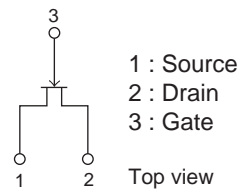
#### Specifications

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

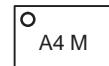
Parameter	Symbol	Value	Unit
Drain to Source Voltage	$V_{DSS}$	40	V
Gate to Drain Voltage	$V_{GDS}$	-40	V
Gate Current	$I_G$	10	mA
Drain Current	$I_D$	1	mA
Power Dissipation	$P_D$	100	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

#### Electrical Connection



#### Marking



M = Date Code

#### Ordering & Package Information

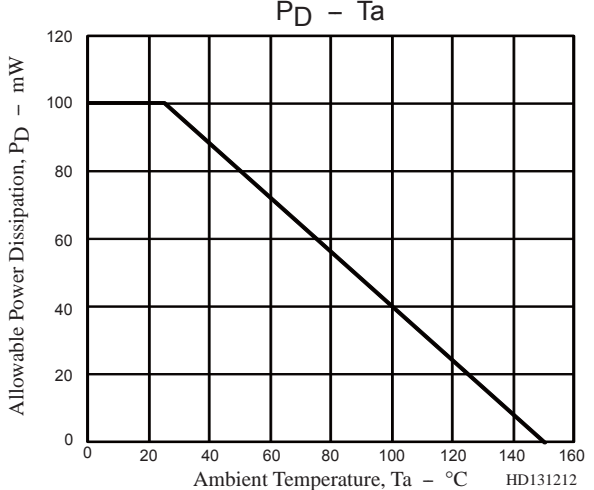
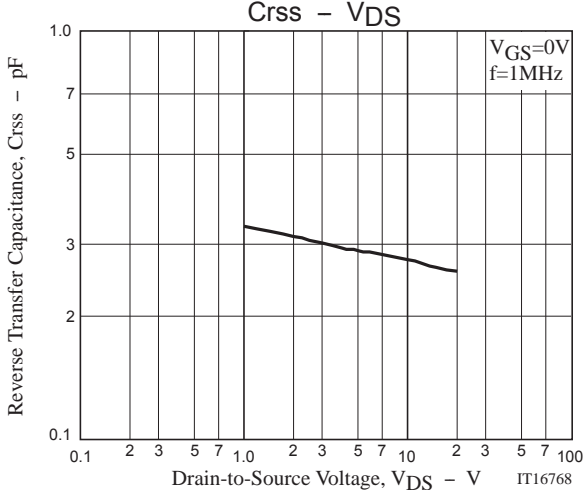
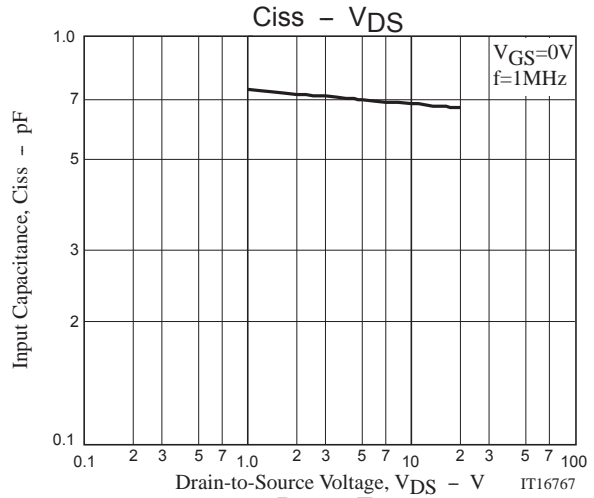
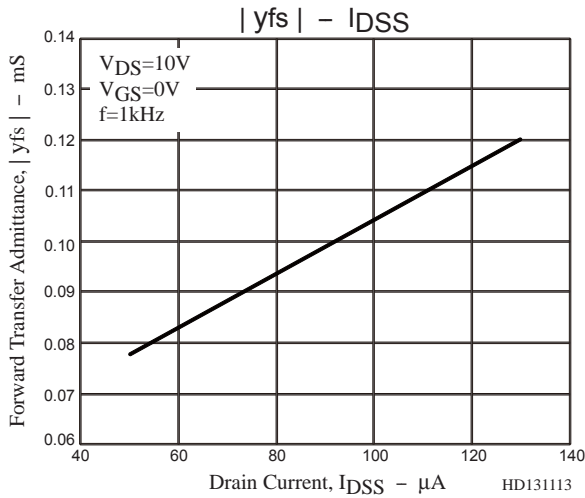
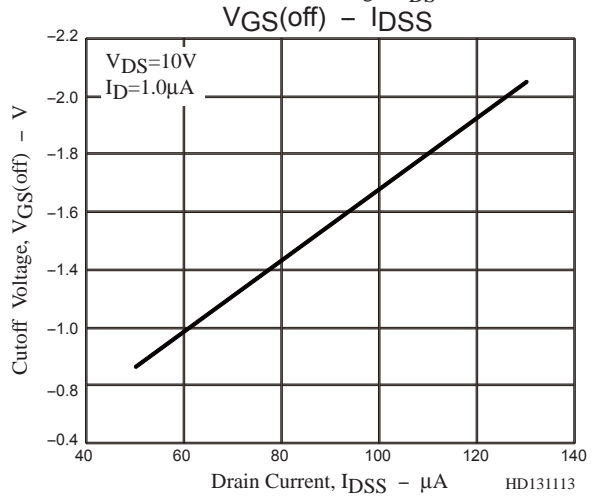
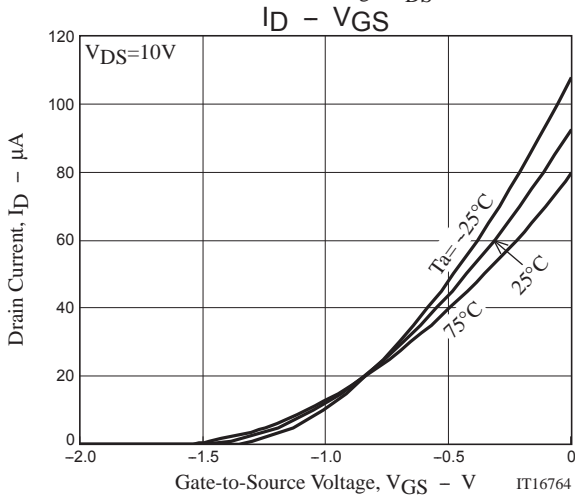
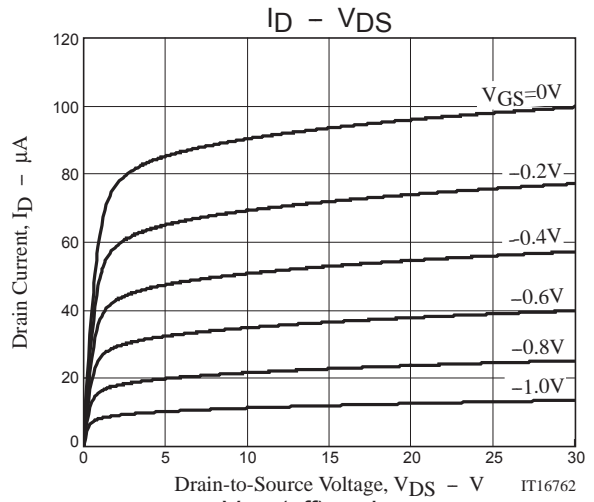
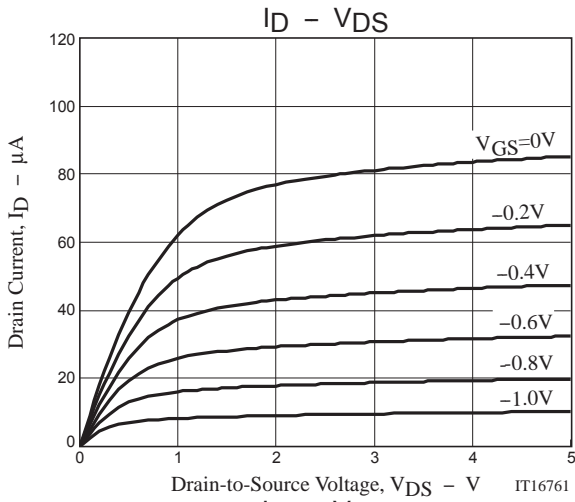
Device	Package	Shipping
TF414T5G Pb-free and Halogen Free	SOT-883	8,000 pcs. / reel

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  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Gate to Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10\mu\text{A}$ , $V_{DS} = 0\text{V}$	-40			V
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = -20\text{V}$ , $V_{DS} = 0\text{V}$			-500	pA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10\text{V}$ , $I_D = 1\mu\text{A}$		-1.4	-4.0	V
Drain Current	$I_{DSS}$	$V_{DS} = 10\text{V}$ , $V_{GS} = 0\text{V}$	50		130	$\mu\text{A}$
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{kHz}$	0.05	0.11		mS
Input Capacitance	$C_{iss}$	$V_{DS} = 10\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{MHz}$		0.7		pF
Reverse Transfer Capacitance	$C_{rss}$			0.3		pF



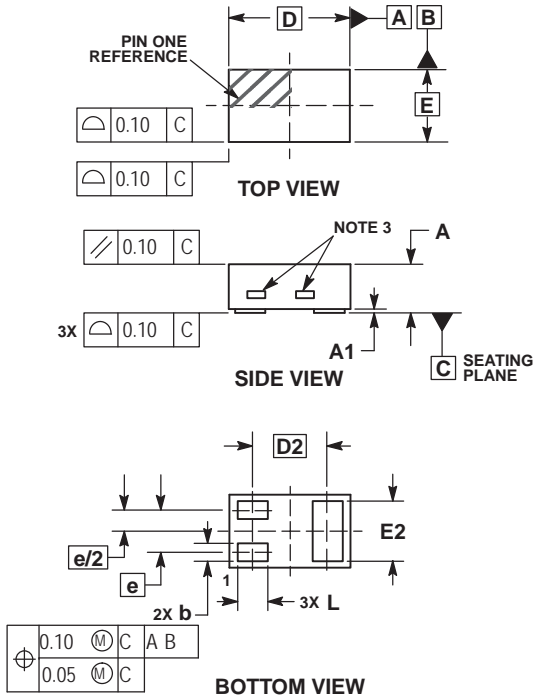
**Package Dimensions**

unit : mm

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

CASE 506CB

ISSUE A

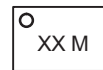


NOTES:

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

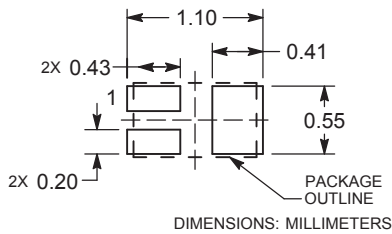
**GENERIC MARKING DIAGRAM\***



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\***



\*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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