Ordering number : ENA2259B

TF414

N-Channel JFET
40V, 50 to 130μA, 0.11mS, SOT-883

ON Semiconductor®

http://onsemi.com

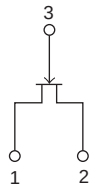
Features

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

Applications

- Impedance conversion, infrared sensor applications

Electrical Connection



1 : Source
2 : Drain
3 : Gate

Top view

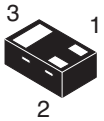
Specifications

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

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

Marking



SOT-883



M = Date Code

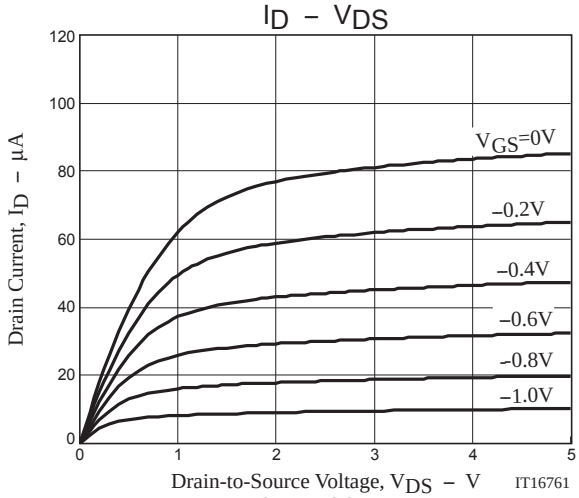
Ordering & Package Information

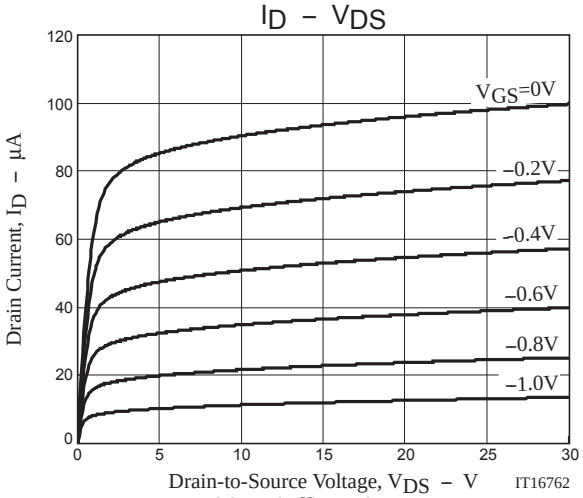
Device	Package	Shipping
TF414T5G Pb-free and Halogen Free	SOT-883	8,000 pcs. / reel

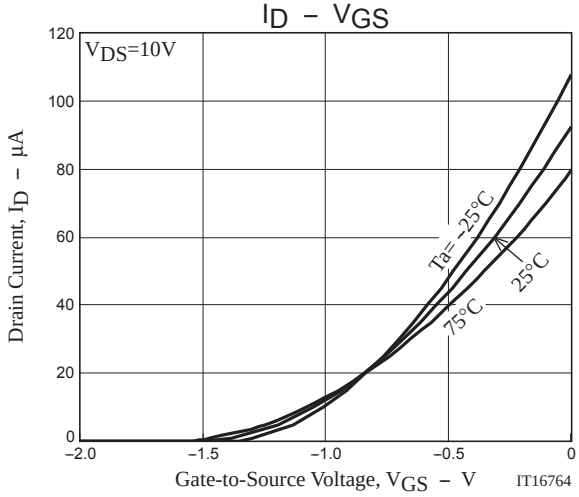
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

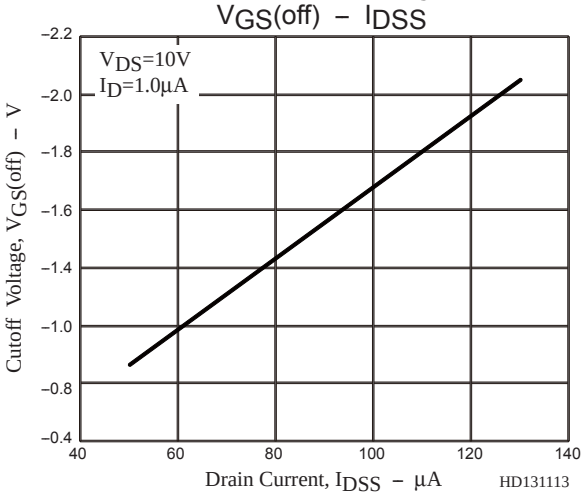
Electrical Characteristics at Ta = 25°C

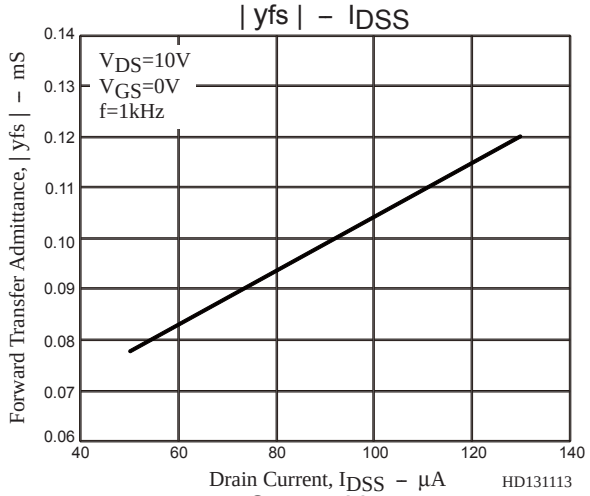
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Gate to Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G = –10μA, V_{DS}=0V	–40			V
Gate to Source Leakage Current	I_{GSS}	V_{GS} = –20V, V_{DS}=0V			–500	pA
Cutoff Voltage	$V_{GS}(off)$	V_{DS} = 10V, I_D = 1μA		–1.4	–4.0	V
Drain Current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0V	50		130	μA
Forward Transfer Admittance	| yfs |	V_{DS} = 10V, V_{GS}=0V, f = 1kHz	0.05	0.11		mS
Input Capacitance	Ciss	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz		0.7		pF
Reverse Transfer Capacitance	Crss			0.3		pF

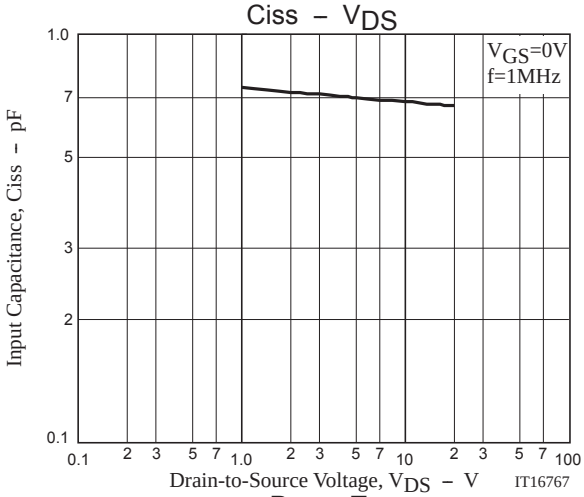

ID – VDS
Drain Current, ID – µA
VGS=0V
–0.2V
–0.4V
–0.6V
–0.8V
–1.0V
Drain-to-Source Voltage, VDS – V
IT16761

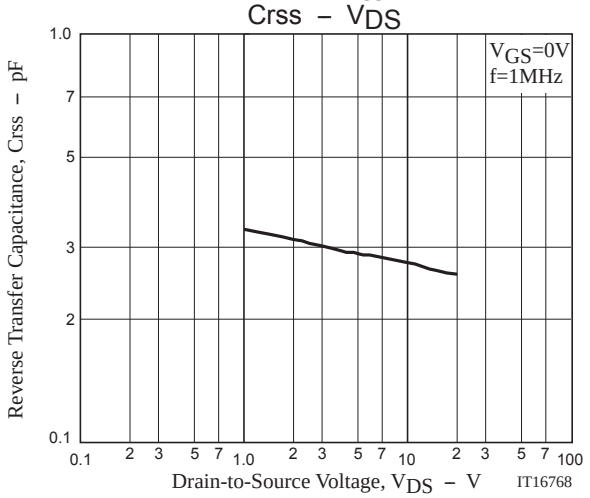

ID – VDS
Drain Current, ID – µA
VGS=0V
–0.2V
–0.4V
–0.6V
–0.8V
–1.0V
Drain-to-Source Voltage, VDS – V
IT16762

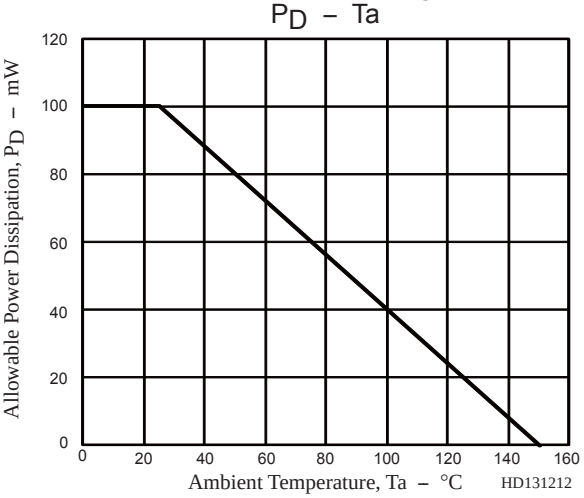

ID – VGS
VDS=10V
Drain Current, ID – µA
Ta= –25°C
25°C
75°C
Gate-to-Source Voltage, VGS – V
IT16764


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


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


Ciss – VDS
VGS=0V
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
IT16767

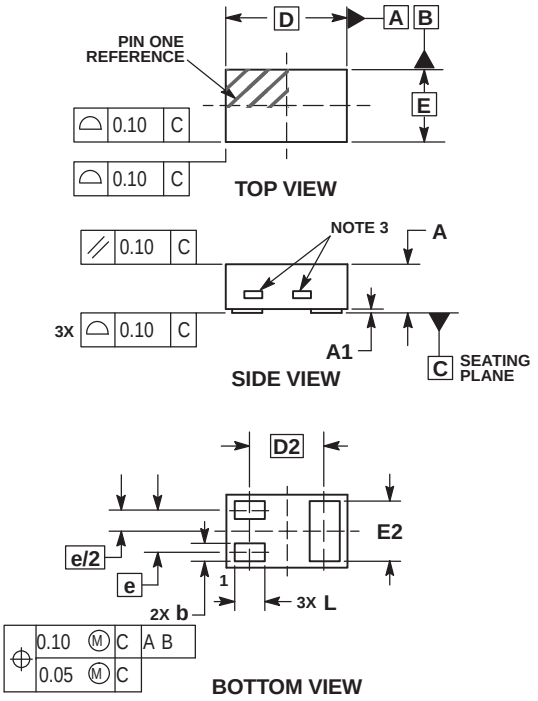

Crss – VDS
VGS=0V
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
IT16768


PD – Ta
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
HD131212

Package Dimensions

unit : mm

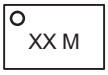
SOT-883 (XDFN3), 1.0x0.6, 0.35P
CASE 506CB
ISSUE A



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

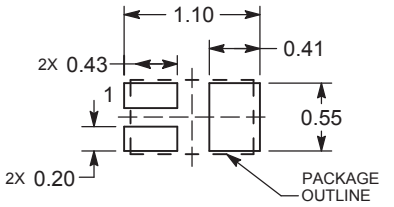
GENERIC MARKING DIAGRAM*



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.

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