

## N-CHANNEL J-FET DEPLETION MODE

Qualified per MIL-PRF-19500/ 375

Devices

Qualified Level

2N3821

2N3822

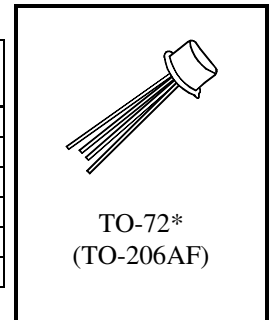
2N3823

**JANTX  
JANTXV**

### MAXIMUM RATINGS

Parameters / Test Conditions	Symbol	2N3821 2N3822	2N3823	Unit
Gate-Source Voltage	$V_{GSR}$	50	30	V
Drain-Source Voltage	$V_{DS}$	50	30	V
Drain-Gate Voltage	$V_{DG}$	50	30	V
Gate Current	$I_{GF}$	10		mA
Power Dissipation	$P_T$	300		mW
Operating Junction & Storage Temperature Range	$T_j, T_{stg}$	-55 to +200		$^{\circ}C$

(1) Derate linearly 1.7 mW/ $^{\circ}C$  for  $T_A = +25^{\circ}C$ .



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}C$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Units
Gate-Source Breakdown Voltage $V_{DS} = 0, I_G = 1.0 \mu A$	$V_{(BR)GSSR}$	50		Vdc
2N3821, 2N3822		30		
2N3823				
Gate Reverse Current $V_{DS} = 0, V_{GS} = 30 Vdc$ $V_{DS} = 0, V_{GS} = 20 Vdc$	$I_{GSSR}$		0.1	$\eta A$
2N3821, 2N3822			0.5	
2N3823				
Zero-Gate-Voltage Drain Current $V_{GS} = 0, V_{DS} = 15 Vdc$	$I_{DSS}$	0.5	2.5	mA
2N3821		2.0	10	
2N3822		4.0	20	
2N3823				
Gate-Source Voltage $V_{DS} = 15 Vdc, I_D = 50 \mu A$ $V_{DS} = 15 Vdc, I_D = 200 \mu A$ $V_{DS} = 15 Vdc, I_D = 400 \mu A$	$V_{GS}$	0.5	2.0	Vdc
2N3821		1.0	4.0	
2N3822		1.0	7.5	
2N3823				
Gate-Source Cutoff Voltage $V_{DS} = 15 Vdc, I_D = 0.5 \eta A$	$V_{GS(off)}$		4.0	Vdc
2N3821			6.0	
2N3822			8.0	
2N3823				

**2N3821, 2N3822, 2N3823 JAN SERIES**

<b>Parameters / Test Conditions</b>	<b>Symbol</b>	<b>Min.</b>	<b>Max.</b>	<b>Units</b>
Small-Signal Common Source, Short-Circuit Forward Transfer Admittance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 1.0 \text{ kHz}$ 2N3821 2N3822 2N3823	$ y_{fs} ^1$	1500 3000 3500	4500 6500 6500	$\mu\text{S}$
Small-Signal Common Source, Short-Circuit Output Admittance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 1.0 \text{ kHz}$ 2N3821 2N3822 2N3823	$ y_{os} $		10 20 35	$\mu\text{S}$
Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{iss}$		6.0	$\text{pF}$
Small-Signal, Common-Source Reverse Transfer Capacitance $V_{DS} = 15 \text{ Vdc}, V_{GS} = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ 2N3821, 2N3822 2N3823	$C_{rss}$		3.0 2.0	$\text{pF}$
Small-Signal Common Source, Short-Circuit Forward Transfer Admittance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 100 \text{ MHz}$ 2N3821 $f = 100 \text{ MHz}$ 2N3822 $f = 200 \text{ MHz}$ 2N3823	$ y_{fs} ^2$	1500 3000 3200		$\mu\text{S}$
Small-Signal, Common-Source Short-Circuit Input Conductance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 200 \text{ MHz}$ 2N3823 (only)	$g_{is}$		800	$\mu\text{S}$
Small-Signal, Common-Source Short-Circuit Output Conductance $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, f = 200 \text{ MHz}$ 2N3823 (only)	$g_{os}$		200	$\mu\text{S}$
Common Source Spot Noise Figure $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, R_G = 1\text{M}\Omega$ $f = 10 \text{ Hz}$ 2N3821, 2N3822 $f = 1.0 \text{ kHz}$ 2N3821, 2N3822, 2N3823	$NF^1$		5.0 2.0	$\text{dB}$
Common Source Spot Noise Figure $V_{GS} = 0, V_{DS} = 15 \text{ Vdc}, R_G = 1\text{k}\Omega$ $f = 105 \text{ MHz}$ 2N3823 (only)	$NF^2$		2.5	$\text{dB}$