Microsemi LAWRENCE

TECHNICAL DATA

N-CHANNEL J-FET DEPLETION MODE

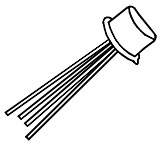
Qualified per MIL-PRF-19500/375

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	$T_A = +25^0C$ (1)	P_T	300		mW
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to +200		^0C

(1) Derate linearly 1.7 mW/^{0}C for T_A +25 ^{0}C.



TO-72*
(TO-206AF)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = 25^0C$ unless otherwise noted)

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

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