



SST304 SERIES

N-Channel JFETs

T-31-25

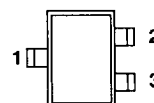
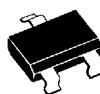
The SST304 Series of n-channel JFETs is designed to provide high-performance amplification, especially at high-frequency. These parts feature low noise, high gain and provide wide bandwidth.

PART NUMBER	$V_{GS(OFF)}$ MAX (V)	$V_{(BR)GSS}$ MIN (V)	g_{fs} MIN (mS)	I_{DSS} MAX (mA)
SST304	-6	-30	4.5	15
SST305	-3	-30	3	8

For additional design information please see performance curves NH.

SOT-23

TOP VIEW



1 DRAIN
2 SOURCE
3 GATE

SIMILAR PRODUCTS

- TO-92, See J304 Series
- Chips, See NH Series Die

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Gate-Drain Voltage	V_{GD}	-30	V
Gate-Source Voltage	V_{GS}	-30	
Gate Current	I_G	10	mA
Power Dissipation	P_D	360	mW
Power Derating		3.27	mW/°C
Operating Junction Temperature Range	T_J	-55 to 135	°C
Storage Temperature Range	T_{stg}	-55 to 150	
Lead Temperature ($1/16"$ from case for 10 sec.)	T_L	300	

SST304 SERIES



SPECIFICATIONS ^a			LIMITS					
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ^b	SST304		SST305		UNIT
				MIN	MAX	MIN	MAX	
STATIC								
Gate-Source Breakdown Voltage	V _{(BR)GSS}	I _G = -1 μA, V _{DS} = 0 V	-35	-30		-30		V
Gate-Source Cutoff Voltage	V _{GS(OFF)}	V _{DS} = 15 V, I _D = 1 nA		-2	-6	-0.5	-3	
Saturation Drain Current ^c	I _{DSS}	V _{DS} = 15 V, V _{GS} = 0 V		5	15	1	8	mA
Gate Reverse Current	I _{GSS}	V _{GS} = -20 V, V _{DS} = 0 V	-2		-250		-250	pA
		T _A = 100°C	-0.2					nA
Gate Operating Current	I _G	V _{DG} = 10 V, I _D = 1 mA	-20					pA
Drain Cutoff Current	I _{D(OFF)}	V _{DS} = 10 V, V _{GS} = -6 V	2					
Drain-Source On-Resistance	r _{DS(ON)}	V _{GS} = 1 V, I _D = 1 mA	200					Ω
Gate-Source Forward Voltage	V _{GS(F)}	I _G = 1 mA, V _{DS} = 0 V	0.7					V
DYNAMIC								
Common-Source Forward Transconductance	g _{fs}	V _{DG} = 15 V, V _{GS} = 0 V f = 1 kHz		4.5	7.5	3		mS
Common-Source Output Conductance	g _{os}				50		50	μS
Common-Source Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 MHz	2.2					pF
Common-Source Reverse Transfer Capacitance	C _{rss}		0.7					
Common-Source Output Capacitance	C _{oss}		1					
Equivalent Input Noise Voltage	e _n	V _{DS} = 10 V, V _{GS} = 0 V f = 100 Hz	10					nV/ √Hz

SPECIFICATIONS ^a			LIMITS (Typical)				
PARAMETER	SYMBOL	TEST CONDITIONS	SST304		SST305		UNIT
			100 MHz	400 MHz	100 MHz	400 MHz	
HIGH-FREQUENCY							
Common-Source Input Conductance	g_{iss}	$V_{DS} = 15\text{ V}, V_{GS} = 0\text{ V}$	80	800	80		μS
Common-Source Input Susceptance	b_{iss}		2	7.5	2		mS
Common-Source Output Conductance	g_{oss}		60	80	60		μS
Common-Source Output Susceptance	b_{oss}		0.8	3.6	0.8		mS
Common-Source Forward Transconductance	g_{fs}			4.2	3		
Common-Source Power Gain	G_{ps}	$V_{DS} = 15\text{ V}, I_G = 5\text{ mA}$	20	11			dB
Noise Figure	NF	$R_G = 1\text{ k}\Omega$	1.7	3.8			

NOTES:

a. $T_A = 25^\circ C$ unless otherwise noted.

b. For design aid only, not subject to production testing

c. Pulse test, $PW = 300 \mu s$, duty cycle $\leq 2\%$