LINEAR SYSTEMS

J108
N-CHANNEL JFET

micross

Linear Systems replaces discontinued Siliconix J108

This n-channel JFET is optimised for low noise high performance switching. The part is particularly suitable for use in low noise audio amplifiers. The SOT-23 package is well suited for cost sensitive applications and mass production.

(See Packaging Information).

J108 Benefits:

- Low On Resistance
- Low insertion loss
- Low Noise

J108 Applications:

- Analog Switches
- Commutators
- Choppers

FEATURES	
DIRECT REPLACEMENT FOR SILICONIX J108	
LOW ON RESISTANCE	$r_{DS(on)} \leq 8\Omega$
FAST SWITCHING	$t_{(on)} \leq 4ns$
ABSOLUTE MAXIMUM RATINGS @ 25°C (unless otherwise noted)	
Maximum Temperatures	
Storage Temperature	-55°C to +150°C
Operating Junction Temperature	-55°C to +150°C
Maximum Power Dissipation	
Continuous Power Dissipation	350mW
MAXIMUM CURRENT	
Gate Current (Note 1)	50mA
MAXIMUM VOLTAGES	
Gate to Drain Voltage	V_{GDS} = -25V
Gate to Source Voltage	V_{GSS} = -25V

J108 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-25	--	--		I_G = 1µA, V_{DS} = 0V
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-3	--	-10		V_{DS} = 5V, I_D = 1µA
$V_{GS(F)}$	Gate to Source Forward Voltage	--	0.7	--	V	I_G = 1mA, V_{DS} = 0V
I_{DSS}	Drain to Source Saturation Current (Note 2)	80	--	--	mA	V_{DS} = 15V, V_{GS} = 0V
I_{GSS}	Gate Reverse Current	--	-0.01	-3		V_{GS} = -15V, V_{DS} = 0V
I_G	Gate Operating Current	--	-0.01	--	nA	V_{DG} = 10V, I_D = 10mA
$I_{D(off)}$	Drain Cutoff Current	--	0.02	3		V_{DS} = 5V, V_{GS} = -10V
$r_{DS(on)}$	Drain to Source On Resistance	--	--	8	Ω	V_{GS} = 0V, $V_{DS} \leq$ 0.1V

J108 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
g_{fs}	Forward Transconductance	--	17	--	mS	V_{DS} = 5V, I_D = 10mA , f = 1kHz
g_{os}	Output Conductance	--	0.6	--		
$r_{DS(on)}$	Drain to Source On Resistance	--	--	8	Ω	V_{GS} = 0V, I_D = 0A, f = 1kHz
C_{iss}	Input Capacitance	--	60	--		V_{DS} = 0V, V_{GS} = 0V, f = 1MHz
C_{rss}	Reverse Transfer Capacitance	--	11	--	pF	V_{DS} = 0V, V_{GS} = -10V, f = 1MHz
e_n	Equivalent Noise Voltage	--	3.5	--	nV/√Hz	V_{DS} = 5V, I_D = 10mA , f = 1kHz

J108 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	3	ns	V_{DD} = 1.5V V_{GS}(H) = 0V See Switching Circuit
t_r	Turn On Rise Time	1		
$t_{d(off)}$	Turn Off Time	4		
t_f	Turn Off Fall Time	18		

Note 1 - Absolute maximum ratings are limiting values above which J108 serviceability may be impaired. Note 2 – Pulse test: PW≤ 300 µs, Duty Cycle ≤ 3%

J108 SWITCHING CIRCUIT PARAMETERS

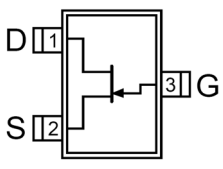
$V_{GS(L)}$	-12V
R_L	150Ω
$I_{D(on)}$	10mA

Available Packages:

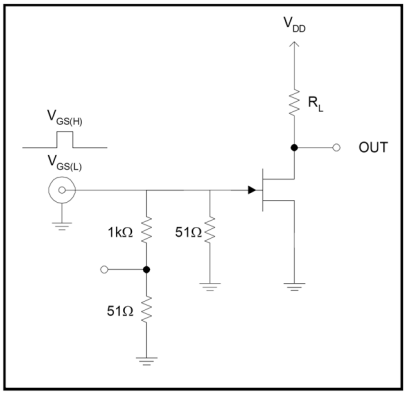
J108 in SOT-23
J108 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)



SWITCHING TEST CIRCUIT



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