Linear Systems replaces discontinued Siliconix SST5114

This analog switch is designed for inverting switching into inverting input of an Operational Amplifier.

The SOT-23 package provides ease of manufacturing, and a lower cost assembly option.

(See Packaging Information).

SST5114 Benefits:
- Low On Resistance
- $I_{D(off)} \leq 500$ pA
- Switches directly from TTL logic

SST5114 Applications:
- Analog Switches
- Commutators
- Choppers

FEATURES	
DIRECT REPLACEMENT FOR SILICONIX SST5114	
LOW ON RESISTANCE	$r_{DS(on)} \leq 75\Omega$
LOW CAPACITANCE	6pF
ABSOLUTE MAXIMUM RATINGS @ 25°C (unless otherwise noted)	
Maximum Temperatures	
Storage Temperature	-55°C to +200°C
Operating Junction Temperature	-55°C to +200°C
Maximum Power Dissipation	
Continuous Power Dissipation	500mW
MAXIMUM CURRENT	
Gate Current (Note 1)	$I_G = -50$mA
MAXIMUM VOLTAGES	
Gate to Drain Voltage	$V_{GDS} = 30$V
Gate to Source Voltage	$V_{GSS} = 30$V

SST5114 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	30	--	--		$I_G = 1\mu A$, $V_{DS} = 0$V
$V_{GS(off)}$	Gate to Source Cutoff Voltage	4	--	10	V	$V_{DS} = -15$V, $I_D = -1$nA
$V_{GS(F)}$	Gate to Source Forward Voltage	--	-0.7	-1		$I_G = -1$mA, $V_{DS} = 0$V
$V_{DS(on)}$	Drain to Source On Voltage	--	-1.0	-1.3		$V_{GS} = 0$V, $I_D = -15$mA
		--	-0.7	--		$V_{GS} = 0$V, $I_D = -7$mA
		--	-0.5	--		$V_{GS} = 0$V, $I_D = -3$mA
I_{DSS}	Drain to Source Saturation Current (Note 2)	-30	--	-90	mA	$V_{DS} = -18$V, $V_{GS} = 0$V
I_{GSS}	Gate Reverse Current	--	5	500		$V_{GS} = 20$V, $V_{DS} = 0$V
I_G	Gate Operating Current	--	-5	--		$V_{DS} = -15$V, $I_D = -1$mA
$I_{D(off)}$	Drain Cutoff Current	--	-10	-500	pA	$V_{DS} = -15$V, $V_{GS} = 12$V
		--	-10	--		$V_{DS} = -15$V, $V_{GS} = 7$V
		--	-10	--		$V_{DS} = -15$V, $V_{GS} = 5$V
$r_{DS(on)}$	Drain to Source On Resistance	--	--	75	Ω	$I_D = -1$mA, $V_{GS} = 0$V

SST5114 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
g_{fs}	Forward Transconductance	--	4.5	--	mS	$V_{DS} = -15$V, $I_D = 1$mA , $f = 1$kHz
g_{os}	Output Conductance	--	20	--	μS	
$r_{DS(on)}$	Drain to Source On Resistance	--	--	75	Ω	$I_D = 0$A, $V_{GS} = 0$V, $f = 1$kHz
C_{iss}	Input Capacitance	--	20	25		$V_{DS} = -15$V, $V_{GS} = 0$V, $f = 1$MHz
C_{rss}	Reverse Transfer Capacitance	--	5	7	pF	$V_{DS} = 0$V, $V_{GS} = 12$V, $f = 1$MHz
		--	6	--		$V_{DS} = 0$V, $V_{GS} = 7$V, $f = 1$MHz
		--	6	--		$V_{DS} = 0$V, $V_{GS} = 5$V, $f = 1$MHz
e_n	Equivalent Noise Voltage	--	20	--	nV/√Hz	$V_{DG} = 10$V, $I_D = 10$mA, $f = 1$kHz

SST5114 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	6		$V_{GS}(L) = -11$V
t_r	Turn On Rise Time	10	ns	$V_{GS}(H) = 0$V
$t_{d(off)}$	Turn Off Time	6		
t_f	Turn Off Fall Time	15		See Switching Circuit

Note 1 - Absolute maximum ratings are limiting values above which SST5114 serviceability may be impaired. Note 2 – Pulse test: PW≤ 300 µs, Duty Cycle ≤ 3%

SST5114 SWITCHING CIRCUIT PARAMETERS

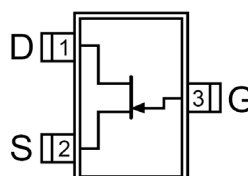|	
V_{DD}	-10V
V_{GG}	20V
R_L	430Ω
R_G	100Ω
$I_{D(on)}$	-15mA

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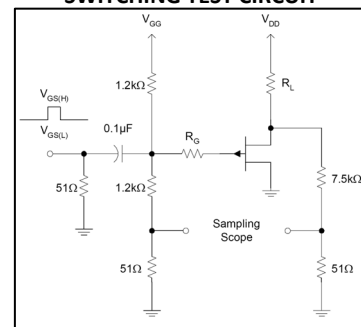
micross

Available Packages:

SST5114 in SOT-23
SST5114 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)

D 1
S 2
3 G

SWITCHING TEST CIRCUIT