

# SST5115 P-CHANNEL JFET



# Linear Systems replaces discontinued Siliconix SST5115

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

The SOT-23 provides a low cost option and ease of manufacturing.

(See Packaging Information).

#### SST5115 Benefits:

- Low On Resistance
- $I_{D(off)} \le 500 \text{ pA}$
- Switches directly from TTL logic

### SST5115 Applications:

- **Analog Switches**
- Commutators
- Choppers

FEATURES					
DIRECT REPLACEMENT FOR SILICONIX SST5115					
LOW ON RESISTANCE	$r_{DS(on)} \le 100\Omega$				
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 <sub>G</sub> = -50mA				
MAXIMUM VOLTAGES					
Gate to Drain Voltage	V <sub>GDS</sub> = 30V				
Gate to Source Voltage	V <sub>GSS</sub> = 30V				

SST5115 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

3313113 ELECTRICAL CHARACTERISTICS @ 25 C (utiless ottlerwise floted)						
SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
$BV_GSS$	Gate to Source Breakdown Voltage	30				$I_{G} = 1\mu A$ , $V_{DS} = 0V$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	3		6		$V_{DS} = -15V, I_{D} = -1nA$
$V_{GS(F)}$	Gate to Source Forward Voltage		-0.7	-1	V	$I_G = -1mA$ , $V_{DS} = 0V$
			-1.0			$V_{GS} = 0V, I_D = -15mA$
$V_{DS(on)}$	(on) Drain to Source On Voltage		-0.7	-0.8		$V_{GS} = 0V, I_{D} = -7mA$
			-0.5			$V_{GS} = 0V, I_{D} = -3mA$
I <sub>DSS</sub>	Drain to Source Saturation Current (Note 2)	-15		-60	mA	$V_{DS} = -15V, V_{GS} = 0V$
I <sub>GSS</sub>	Gate Reverse Current		5	500		$V_{GS} = 20V, V_{DS} = 0V$
l <sub>G</sub>	Gate Operating Current		-5			$V_{DS} = -15V, I_{D} = -1mA$
	Drain Cutoff Current		-10		pA	$V_{DS} = -15V, V_{GS} = 12V$
I <sub>D(off)</sub>			-10	-500		$V_{DS} = -15V, V_{GS} = 7V$
			-10			$V_{DS} = -15V, V_{GS} = 5V$
r <sub>DS(on)</sub>	Drain to Source On Resistance			100	Ω	$I_D = -1 \text{mA}, V_{GS} = 0 \text{V}$

SST5115 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
<b>g</b> fs	Forward Transconductance		4.5	-	mS	$V_{DS} = -15V, I_{D} = 1mA, f = 1kHz$
g <sub>os</sub>	Output Conductance		20	-	μS	
r <sub>DS(on)</sub>	Drain to Source On Resistance			100	Ω	$I_D = 0A$ , $V_{GS} = 0V$ , $f = 1kHz$
C <sub>iss</sub>	Input Capacitance		20	25		$V_{DS} = -15V$ , $V_{GS} = 0V$ , $f = 1MHz$
			5		pF	$V_{DS} = 0V, V_{GS} = 12V, f = 1MHz$
$C_{rss}$	Reverse Transfer Capacitance		6	7		$V_{DS} = 0V$ , $V_{GS} = 7V$ , $f = 1MHz$
			6			$V_{DS} = 0V$ , $V_{GS} = 5V$ , $f = 1MHz$
e <sub>n</sub>	Equivalent Noise Voltage		20		nV/√Hz	$V_{DG} = 10V, I_D = 10mA, f = 1kHz$

SST5115 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

	SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS	
Ì	t <sub>d(on)</sub>	Turn On Time	10		$V_{GS}(L) = -7V$	
Ì	t <sub>r</sub>	Turn On Rise Time	20	ns	ns	$V_{GS}(H) = 0V$
Ì	t <sub>d(off)</sub>	Turn Off Time	8			See Switching Circuit
Ì	t <sub>f</sub>	Turn Off Fall Time	30		, and the second	

Note 1 - Absolute maximum ratings are limiting values above which SST5115 serviceability may be impaired. Note 2 - Pulse test: PW≤ 300 µs, Duty Cycle ≤ 3%

#### **SST5115 SWITCHING CIRCUIT PARAMETERS**

V <sub>DD</sub>	-6V
$V_{GG}$	12V
$R_L$	910Ω
$R_G$	220Ω
I <sub>D(on)</sub>	-7mA

Micross Components Europe

Available Packages:

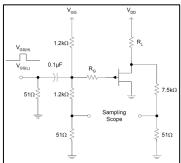
SST5115 in SOT-23 SST5115 in bare die.

Please contact Micross for full package and die dimensions

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SOT-23 (Top View)

## SWITCHING TEST CIRCUIT





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