

LINEAR SYSTEMS

Linear Integrated Systems

2N5114 SERIES

SINGLE P-CHANNEL JFET

FEATURES

DIRECT REPLACEMENT FOR SILICONIX 2N5114

LOW ON RESISTANCE 75Ω

LOW CAPACITANCE 6pF

ABSOLUTE MAXIMUM RATINGS¹

@ 25 °C (unless otherwise stated)

Maximum Temperatures

Storage Temperature -55 to 200°C

Junction Operating Temperature -55 to 200°C

Maximum Power Dissipation

Continuous Power Dissipation 500mW

Maximum Currents

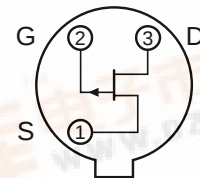
Gate Current -50mA

Maximum Voltages

Gate to Drain 30V

Gate to Source 30V

TO-18
BOTTOM VIEW



STATIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC	TYP	2N5114		2N5115		2N5116		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
BV _{GSS}	Gate to Source Breakdown Voltage		30		30		30		V	I _G = 1μA, V _{DS} = 0V
V _{GS(off)}	Gate to Source Cutoff Voltage		5	10	3	6	1	4		V _{DS} = -15V, I _D = -1nA
V _{GS(F)}	Gate to Source Forward Voltage	-0.7		-1		-1		-1		I _G = -1mA, V _{DS} = 0V
V _{DS(on)}	Drain to Source On Voltage	-1.0		-1.3						V _{GS} = 0V, I _D = -15mA
		-0.7				-0.8				V _{GS} = 0V, I _D = -7mA
		-0.5						-0.6		V _{GS} = 0V, I _D = -3mA
I _{DSS}	Drain to Source Saturation Current ²		-30	-90					mA	V _{DS} = -18V, V _{GS} = 0V
					-15	-60	-5	-25		V _{DS} = -15V, V _{GS} = 0V
I _{GSS}	Gate Leakage Current	5		500		500		500	pA	V _{GS} = 20V, V _{DS} = 0V
I _G	Gate Operating Current	-5								V _{DS} = -15V, I _D = -1mA
I _{D(off)}	Drain Cutoff Current	-10		-500						V _{DS} = -15V, V _{GS} = 12V
		-10				-500				V _{DS} = -15V, V _{GS} = 7V
		-10						-500		V _{DS} = -15V, V _{GS} = 5V
r _{DS(on)}	Drain to Source On Resistance			75		100		150	Ω	V _{GS} = 0V, I _D = -1mA

DYNAMIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

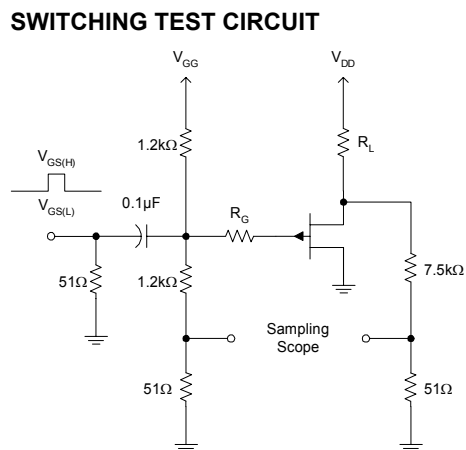
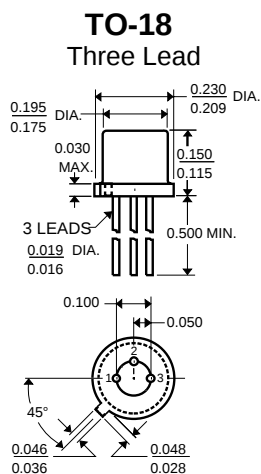
SYM.	CHARACTERISTIC	TYP	2N5114		2N5115		2N5116		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
g_{fs}	Forward Transconductance	4.5							mS	$V_{DS} = -15V, I_D = -1mA$ $f = 1kHz$
g_{os}	Output Conductance	20							μS	
$r_{ds(on)}$	Drain to Source On Resistance			75		100		150	Ω	$V_{GS} = 0V, I_D = 0mA$ $f = 1kHz$
C_{iss}	Input Capacitance	20		25		25		25	pF	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1MHz$
C_{rss}	Reverse Transfer Capacitance	5		7						$V_{DS} = 0V, V_{GS} = 12V$ $f = 1MHz$
		6				7				$V_{DS} = 0V, V_{GS} = 7V$ $f = 1MHz$
		6						7		$V_{DS} = 0V, V_{GS} = 5V$ $f = 1MHz$
e_n	Equivalent Noise Voltage	20							nV/ $\sqrt{Hz}$	$V_{DG} = 10V, I_D = 10mA$ $f = 1 kHz$

SWITCHING CHARACTERISTICS (max)

SYM.	CHARACTERISTIC	2N5114	2N5115	2N5116	UNITS
t _{d(on)}	Turn On Time	6	10	12	ns
t _r		10	20	30	
t _{d(off)}	Turn Off Time	6	8	10	
t _f		15	30	50	

SWITCHING CIRCUIT CHARACTERISTICS

SYM.	2N5114	2N5115	2N5116
V _{DD}	-10V	-6V	-6V
V _{GG}	20V	12V	8V
R _L	430Ω	910Ω	2kΩ
R _G	100Ω	220Ω	390Ω
I _{D(on)}	-15mA	-7mA	-3mA
V _{GS(H)}	0V	0V	0V
V _{GS(L)}	-11V	-7V	-5V



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse test: $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$

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