

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

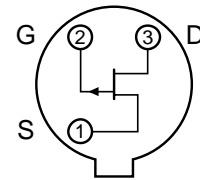
Gate Current -50mA

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	$I_G = 1\mu A, V_{DS} = 0V$
$V_{GS(off)}$	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	$V_{GS} = 0V, I_D = -15mA$
		-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								$V_{DG} = -15V, I_D = -1mA$
$I_{D(off)}$	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	430 Ω	910 Ω	2k Ω
R_G	100 Ω	220 Ω	390 Ω
$I_{D(on)}$	-15mA	-7mA	-3mA
$V_{GS(H)}$	0V	0V	0V
$V_{GS(L)}$	-11V	-7V	-5V

TO-18
Three Lead

SWITCHING TEST CIRCUIT

NOTES

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

Information furnished by Linear Integrated Systems is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.