INTERSIL

2N5114-2N5116 JAN, JTX P-Channel JFET

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FEATURES

- ON Resistance < 75 ohms (2N5114)
- $I_{D(off)}$ < 500 pA
- Switches directly from T^2L Logic (2N5116)

GENERAL DESCRIPTION

Ideal for inverting switching or "Virtual Gnd" switching into inverting input of Op. Amp. No driver is required and ±10 VAC signals can be handled using only +5V logic (T^2L or CMOS).

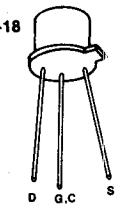
ABSOLUTE MAXIMUM RATINGS

@25°C (unless otherwise noted)

Maximum Temperatures	
Storage Temperature	-65°C to +200°C
Operating Junction Temperature	+200°C
Lead Temperature (Soldering, 10 sec time limit)	+260°C
Maximum Power Dissipation	
Device Dissipation @ Free Air Temperature	500 mW
Linear Derating	3.0 mW/°C
Maximum Voltages & Current	
V_{GS} Gate to Source Voltage	30 V
V_{GD} Gate to Drain Voltage	30 V
I_G Gate Current	50 mA

PIN CONFIGURATION

TO-18



CHIP TOPOGRAPHY

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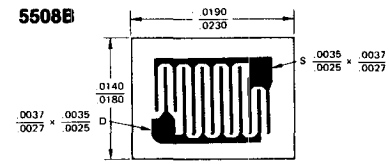

NOTE: SUBSTRATE IS GATE

ORDERING INFORMATION

TO18*	WAFER	DICE
2N5114	2N5114/W	2N5114/D
2N5115	2N5115/W	2N5115/D
2N5116	2N5116/W	2N5116/D

*add JAN, JTX to basic part number to specify these devices (To 18 package only)

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

CHARACTERISTIC		2N5114 MIN	2N5114 MAX	2N5115 MIN	2N5115 MAX	2N5116 MIN	2N5116 MAX	UNIT	TEST CONDITIONS	
BV_{GSS}	Gate-Source Breakdown Voltage	30		30		30		V	I_G = 1 μA, V_{DS} = 0	
I_{GSS}	Gate Reverse Current		500		500		500	pA	V_{GS} = 20 V, V_{DS} = 0	25°C
			1.0		1.0		1.0	μA		150°C
$I_{D(OFF)}$	Drain Cutoff Current		-500		-500		-500	pA	V_{DS} = -15 V, V_{GS} = 2N5114 = 12 V, 2N5115 = 7 V, 2N5116 = 5 V	25°C
			-1.0		-1.0		-1.0	μA		150°C
V_P	Gate-Source Pinch-Off Voltage	5	10	3	6	1	4	V	V_{DS} = -15 V, I_D = -1 nA	
I_{DSS}	Drain Current at Zero Gate Voltage	-30	-90	-15	-60	-5	-25	mA	V_{GS} = 0, V_{DS} = 2N5114 = -18 V, 2N5115 = -15 V, 2N5116 = -15 V	
V_{GSSF}	Forward Gate-Source Voltage		-1		-1		-1	V	Pulse Test Duration = 2 ms, I_G = -1 mA, V_{DS} = 0	
$V_{DS(ON)}$	Drain-Source ON Voltage		-1.3		-0.8		-0.6	V	V_{GS} = 0, I_D = 2N5114 = -15 mA, 2N5115 = - 7 mA, 2N5116 = - 3 mA	
$r_{DS(on)}$	Static Drain-Source ON Resistance		75		100		150	Ω	V_{GS} = 0, I_D = -1 mA	
$r_{ds(on)}$	Small-Signal Drain-Source ON Resistance		75		100		150	Ω	V_{GS} = 0, I_D = 0, f = 1 kHz	
	Jan TX only		75		100		175	Ω		
C_{iss}	Common-Source Input Capacitance		25		25		25	pF	V_{DS} = -15 V, V_{GS} = 0, f = 1 MHz	
	Jan TX only		25		25		27	pF		
C_{rss}	Common-Source Reverse Transfer Capacitance		7		7		7	pF	V_{DS} = 0, V_{GS} = 2N5114 = 12 V, 2N5115 = 7 V, 2N5116 = 5 V, f = 1 MHz	