

# New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.  
SPRINGFIELD, NEW JERSEY 07081  
U.S.A.

TELEPHONE: (973) 376-2922  
(212) 227-6005  
FAX: (973) 376-8960

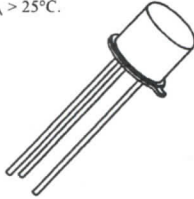
## 2N5114 2N5115 2N5116 P-CHANNEL J-FET

ABSOLUTE MAXIMUM RATINGS ( $T_C = +25^\circ\text{C}$  unless otherwise noted)

Parameters / Test Conditions	Symbol	All Devices	Unit
Gate-Source Voltage <sup>(1)</sup>	$V_{GS}$	30	Vdc
Drain-Source Voltage <sup>(1)</sup>	$V_{DS}$	30	Vdc
Drain-Gate Voltage	$V_{DG}$	30	Vdc
Gate Current	$I_G$	50	mAdc
Power Dissipation $T_A = +25^\circ\text{C}$ <sup>(2)</sup>	$P_T$	0.500	W
Storage Temperature Range	$T_{stg}$	-65 to +200	$^\circ\text{C}$

(1) Symmetrical geometry allows operation of those units with source / drain leads interchanged.

(2) Derate linearly 3.0 mW/ $^\circ\text{C}$  for  $T_A > 25^\circ\text{C}$ .



TO-18  
(TO-206AA)

ELECTRICAL CHARACTERISTICS ( $T_A = +25^\circ\text{C}$ , unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate-Source Breakdown Voltage $V_{DS} = 0, I_G = 1.0 \mu\text{A dc}$	$V_{(BR)GS}$	30		Vdc
Drain-Source "On" State Voltage $V_{GS} = 0\text{V dc}, I_D = -15\text{mA dc}$ 2N5114 $V_{GS} = 0\text{V dc}, I_D = -7.0\text{mA dc}$ 2N5115 $V_{GS} = 0\text{V dc}, I_D = -3.0\text{mA dc}$ 2N5116	$V_{DS(on)}$		-1.3 -0.8 -0.6	Vdc
Gate Reverse Current $V_{DS} = 0, V_{GS} = 20\text{V dc}$	$I_{GSS}$		500	pAdc
Drain Current Cutoff $V_{GS} = 12\text{V dc}, V_{DS} = -15\text{V dc}$ 2N5114 $V_{GS} = 7.0\text{V dc}, V_{DS} = -15\text{V dc}$ 2N5115 $V_{GS} = 5.0\text{V dc}, V_{DS} = -15\text{V dc}$ 2N5116	$I_{D(off)}$		-500 -500 -500	pAdc
Zero Gate Voltage Drain Current $V_{GS} = 0, V_{DS} = -18\text{V dc}$ 2N5114 $V_{GS} = 0, V_{DS} = -15\text{V dc}$ 2N5115 $V_{GS} = 0, V_{DS} = -15\text{V dc}$ 2N5116	$I_{DSS}$	-30 -15 -5.0	-90 -60 -25	mAdc
Gate-Source Cutoff $V_{DS} = -15, I_D = -1.0\text{nA dc}$ 2N5114 $V_{DS} = -15, I_D = -1.0\text{nA dc}$ 2N5115 $V_{DS} = -15, I_D = -1.0\text{nA dc}$ 2N5116	$V_{GS(off)}$	5.0 3.0 1.0	10 6.0 4.0	Vdc

### DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Small-Signal Drain-Source "On" State Resistance $V_{GS} = 0, I_D = -1.0\text{mA dc}$ 2N5114 2N5115 2N5116	$r_{ds(on)1}$		75 100 175	$\Omega$
Small-Signal Drain-Source "On" State Resistance $V_{GS} = 0, I_D = 0; f = 1\text{kHz}$ 2N5114 2N5115 2N5116	$r_{ds(on)2}$		75 100 175	$\Omega$
Small-Signal, Common-Source Short-Circuit Reverse Transfer Capacitance $V_{GS} = 12\text{V dc}, V_{DS} = 0$ 2N5114 $V_{GS} = 7.0\text{V dc}, V_{DS} = 0$ 2N5115 $V_{GS} = 5.0\text{V dc}, V_{DS} = 0$ 2N5116	$C_{rss}$		7.0	pF
Small-Signal, Common-Source Short-Circuit Input Capacitance $V_{GS} = 0, V_{DS} = -15\text{V dc}, f = 1.0\text{MHz}$ 2N5114, 2N5115 2N5116	$C_{iss}$		25 27	pF

### SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Turn-On Delay Time 2N5114 2N5115 2N5116	$t_{don}$		6 10 25	$\eta\text{s}$
Rise Time 2N5114 2N5115 2N5116	$t_r$		10 20 35	$\eta\text{s}$
Turn-Off Delay Time 2N5114 2N5115 2N5116	$t_{doff}$		6 8 20	$\eta\text{s}$

See Figure 2 of MIL-PRF-19500/476



NJ Semi-Cond reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Cond is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Cond assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Cond encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Cond