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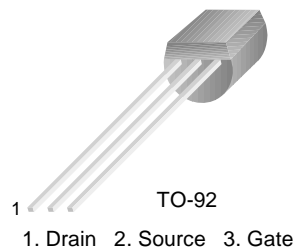
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# PN4117A

## N-Channel Switch

- This device is designed for low current DC and audio application. These devices provide excellent performance as input stages for sub-picoamp instrumentation or any high impedance signal sources.
- Sourced from process 53.



## Absolute Maximum Ratings \* $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{DG}$	Drain-Gate Voltage	40	V
$V_{GS}$	Gate-Source Voltage	-40	V
$I_{GF}$	Forward Gate Current	50	mA
$T_{STG}$	Operating and storage Temperature Range	- 55 ~ 150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired

### NOTES:

- These ratings are based on a maximum junction temperature of 150degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

## Electrical Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$V_{DS} = 0, I_G = -1\mu\text{A}$	-40			V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = -10\text{V}, I_D = 1.0\text{nA}$	-0.6		-1.8	V
$I_{GSS}$	Gate Reverse Current	$V_{DS} = 0\text{V}, V_{GS} = -20\text{V}$			-1.0	pA
<b>On Characteristics</b>						
$I_{DSS}$	Zero-Gate Voltage Drain Current *	$V_{DS} = 10\text{V}, V_{GS} = 0$	30		90	$\mu\text{A}$
<b>Small Signal Characteristics</b>						
$g_{fs}$	Common Source Forward Transconductance	$V_{DS} = 10\text{V}, V_{GS} = 0$ $f = 1.0\text{KHz}$	70		210	mmhos
$g_{OSS}$	Common Source Output Conductance	$V_{DS} = 10\text{V}, V_{GS} = 0$ $f = 1\text{KHz}$			3.0	mmhos
$R_{E(YFS)}$	Common Source Forward Conductance	$V_{DS} = 10\text{V}, V_{GS} = 0$ $f = 30\text{MHz}$	60			mmhos
$C_{iss}$	Input Capacitance	$V_{DS} = 10\text{V}, V_{GS} = 0$ $f = 1.0\text{KHz}$			3.0	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 10\text{V}, V_{GS} = 0$ $f = 1.0\text{MHz}$			1.5	pF

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 1.0\%$

## Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation Derate above $25^\circ\text{C}$	350 2.8	mW mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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