# New Jersey Semi-Conductor Products, Inc.

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# N-channel silicon field-effect transistors

J111; J112; J113

#### **DESCRIPTION**

Symmetrical silicon n-channel junction FETs in plastic TO-92 envelopes. They are intended for applications such as analog switches, choppers, commutators etc.

#### **FEATURES**

- · High speed switching
- Interchangeability of drain and source connections
- Low R<sub>DS on</sub> at zero gate voltage

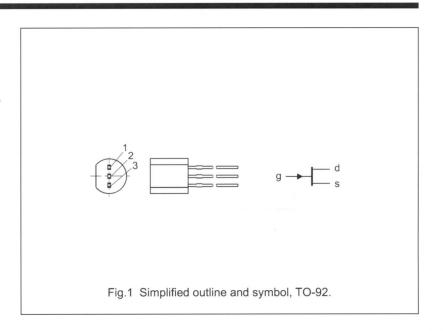
#### **PINNING**

1 = gate

2 = source

3 = drain

Note: Drain and source are interchangeable.



#### QUICK REFERENCE DATA

			J111	J112	J113	
Drain-source voltage	$\pm V_{DS}$	max.	40	40	40	_ V
Drain current						
$V_{DS} = 15 \text{ V}; V_{GS} = 0$	I <sub>DSS</sub>	min.	20	5	2	mA
Total power dissipation						
up to T <sub>amb</sub> = 50 °C	$P_{tot}$	max.	400	400	400	mW
Gate-source cut-off voltage			0		0.5	
$V_{DS} = 5 \text{ V}; I_{D} = 1 \mu \text{A}$	$-V_{GS off}$	min.	3	1	0.5	V
	33 011	max.	10	5	3	V
Drain-source on-state resistance						
$V_{DS} = 0.1 V; V_{GS} = 0$	R <sub>DS on</sub>	max.	30	50	100	Ω



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RAT	IN	GS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

$\pm V_{DS}$	max.	40	V
$-V_{GSO}$	max.	40	V
$-V_{GDO}$	max.	40	V
$I_{G}$	max.	50	mA
$P_{tot}$	max.	400	mW
T <sub>stg</sub>		-65  to + 150	°C
$T_{j}$	max.	150	°C
	-V <sub>GSO</sub> -V <sub>GDO</sub> I <sub>G</sub>	$\begin{array}{lll} -V_{GSO} & \text{max.} \\ -V_{GDO} & \text{max.} \\ I_G & \text{max.} \\ \end{array}$ $P_{tot} & \text{max.} \\ T_{stg} & \end{array}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

## THERMAL RESISTANCE

From junction to ambient in free air

 $R_{th j-a} =$ 

250 K/W

## STATIC CHARACTERISTICS

T<sub>j</sub> = 25 °C unless otherwise specified

			J111	J112	J113	
Gate reverse current						_
$-V_{GS} = 15 \text{ V}; V_{DS} = 0$	$-I_{GSS}$	max.	1	1	1	nA
Drain cut-off current						
$V_{DS}$ = 5 V; $-V_{GS}$ = 10 V	$-I_{DSX}$	max.	1	1	1	nA
Drain saturation current						
$V_{DS} = 15 \text{ V}; V_{GS} = 0$	I <sub>DSS</sub>	min.	20	5	2	mA
Gate-source breakdown voltage						
$-I_G = 1 \mu A; V_{DS} = 0$	$-V_{(BR)GSS}$	min.	40	40	40	V
Gate-source cut-off voltage						
$V_{DS}$ = 5 V; $I_D$ = 1 $\mu A$	$-V_{GS\ off}$	min.	3	1	0.5	V
		max.	10	5	3	V
Drain-source on-state resistance						
$V_{DS} = 0.1 V; V_{GS} = 0$	$R_{DSon}$	max.	30	50	100	Ω