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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 $R_{DS\ on}$ at zero gate voltage

PINNING

1 = gate
2 = source
3 = drain

Note: Drain and source are interchangeable.

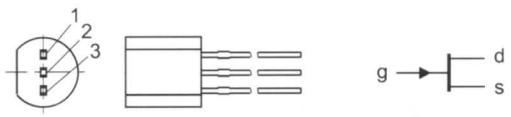

Fig.1 Simplified outline and symbol, TO-92.

QUICK REFERENCE DATA

			J111	J112	J113	
Drain-source voltage	$\pm V_{DS}$	max.	40	40	40	V
Drain current						
V_{DS} = 15 V; V_{GS} = 0	I_{DSS}	min.	20	5	2	mA
Total power dissipation						
up to T_{amb} = 50 °C	P_{tot}	max.	400	400	400	mW
Gate-source cut-off voltage						
V_{DS} = 5 V; I_D = 1 µA	$-V_{GS\ off}$	min.	3	1	0.5	V
		max.	10	5	3	V
Drain-source on-state resistance						
V_{DS} = 0.1 V; V_{GS} = 0	$R_{DS\ on}$	max.	30	50	100	Ω

RATINGS

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

Drain-source voltage	$\pm V_{DS}$	max.	40	V
Gate-source voltage	$-V_{GSO}$	max.	40	V
Gate-drain voltage	$-V_{GDO}$	max.	40	V
Gate forward current (DC)	I_G	max.	50	mA
Total power dissipation				
up to T_{amb} = 50 °C	P_{tot}	max.	400	mW
Storage temperature range	T_{stg}		−65 to + 150	°C
Junction temperature	T_j	max.	150	°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\text{-}a}$	=	250	K/W

STATIC CHARACTERISTICS

T_j = 25 °C unless otherwise specified

			J111	J112	J113	
Gate reverse current						
$-V_{GS}$ = 15 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 V; V_{GS} = 0	I_{DSS}	min.	20	5	2	mA
Gate-source breakdown voltage						
$-I_G$ = 1 μA; V_{DS} = 0	$-V_{(BR)GSS}$	min.	40	40	40	V
Gate-source cut-off voltage						
V_{DS} = 5 V; I_D = 1 μA	$-V_{GS\ off}$	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