

MPF112 (SILICON)

SILICON N-CHANNEL JUNCTION FIELD-EFFECT TRANSISTOR

Depletion Mode (Type A) device designed for VHF amplifier and mixer applications.

- Low Cross-Modulation Distortion
- Low Transfer Capacitance — $C_{rss} = 3.0$ pF (Typ) @ $V_{DS} = 10$ Vdc
- Low Input Capacitance — $C_{iss} = 8.0$ pF (Typ) @ $V_{DS} = 10$ Vdc
- Unibloc Plastic Encapsulated Package

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	25	Vdc
Drain-Gate Voltage	V_{DG}	25	Vdc
Gate-Source Voltage	V_{GS}	-25	Vdc
Gate Current	I_G	10	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	$P_D(2)$	200 2.0	mW mW/ $^\circ\text{C}$
Operating Junction Temperature	$T_J(2)$	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +135	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage ($I_G = -10$ μAdc , $V_{DS} = 0$)	BV_{GSS}	-25	—	—	Vdc
Gate Reverse Current ($V_{GS} = -10$ Vdc, $V_{DS} = 0$)	I_{GSS}	—	—	100	nAdc
Gate-Source Cutoff Voltage ($V_{DS} = 10$ Vdc, $I_D = 1.0$ μAdc)	$V_{GS(off)}$	-0.5	—	-10	Vdc

ON CHARACTERISTICS

Zero-Gate-Voltage Drain Current ^① ($V_{DS} = 10$ Vdc, $V_{GS} = 0$)	I_{DSS}	1.0	—	25	mAdc
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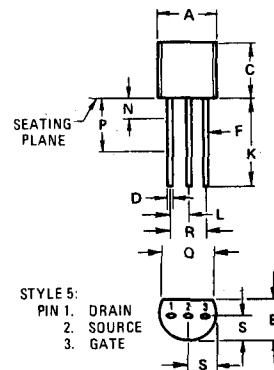
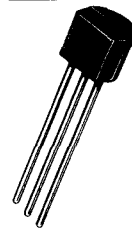
DYNAMIC CHARACTERISTICS

Forward Transfer Admittance ($V_{DS} = 10$ Vdc, $V_{GS} = 0$, $f = 1.0$ kHz) ^① ($V_{DS} = 10$ Vdc, $V_{GS} = 0$, $f = 100$ MHz)	$ y_{fs} $	1000 800	— —	7500 —	μmhos
Input Capacitance ($V_{DS} = 10$ Vdc, $V_{GS} = 0$, $f = 1.0$ MHz)	C_{iss}	—	8.0	—	pF
Reverse Transfer Capacitance ($V_{DS} = 10$ Vdc, $V_{GS} = 0$, $f = 1.0$ MHz)	C_{rss}	—	3.0	—	pF

^① Pulse Test: Pulse Width ≤ 630 ms; Duty Cycle $\leq 10\%$.

(2) Continuous package improvements have enhanced these guaranteed Maximum Ratings as follows: $P_D = 1.0$ W @ $T_C = 25^\circ\text{C}$, Derate above $25^\circ\text{C} - 8.0$ mW/ $^\circ\text{C}$, $T_J = -65$ to $+150^\circ\text{C}$, $\theta_{JC} = 125^\circ\text{C/W}$.

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DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.450	5.200	0.175	0.205
B	3.180	4.190	0.125	0.165
C	4.320	5.330	0.170	0.210
D	0.407	0.533	0.016	0.021
E	0.407	0.482	0.016	0.019
F	12.700	—	0.500	—
G	1.150	1.390	0.045	0.055
H	—	1.270	—	0.050
I	6.350	—	0.250	—
J	3.430	—	0.135	—
K	2.410	2.670	0.095	0.105
L	2.030	2.670	0.080	0.105

CASE 29-02
TO-92