

# SILICON N-CHANNEL DUAL GATE MOS-FET

Depletion type field-effect transistor in a plastic X-package with source and substrate interconnected, intended for u.h.f. applications, such as u.h.f. television tuners, with 12 V supply voltage.

This MOS-FET tetrode is protected against excessive input voltage surges by integrated back-to-back diodes between gates and source.

## QUICK REFERENCE DATA

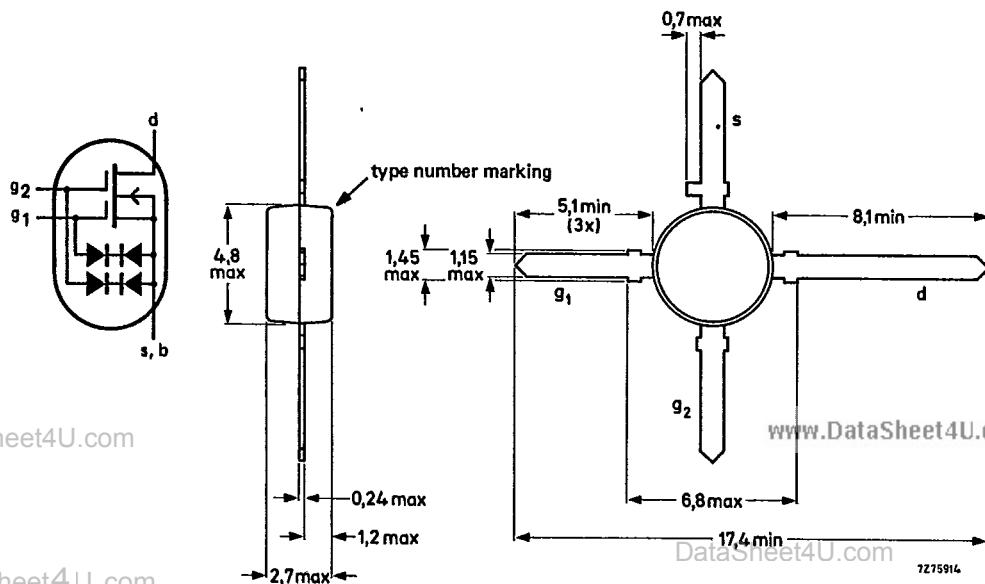
Drain-source voltage	$V_{DS}$	max.	18 V
Drain current	$I_D$	max.	30 mA
Total power dissipation up to $T_{amb} = 75\text{ }^{\circ}\text{C}$	$P_{tot}$	max.	225 mW
Junction temperature	$T_j$	max.	150 $^{\circ}\text{C}$
Transfer admittance at $f = 1\text{ kHz}$ $I_D = 10\text{ mA}$ ; $V_{DS} = 10\text{ V}$ ; $+V_{G2-S} = 4\text{ V}$	$ y_{fs} $	typ.	19 mS
Feedback capacitance at $f = 1\text{ MHz}$ $I_D = 10\text{ mA}$ ; $V_{DS} = 10\text{ V}$ ; $+V_{G2-S} = 4\text{ V}$	$C_{rs}$	typ.	25 fF
Noise figure at $G_S = 5\text{ mS}$ ; $B_S = B_S\text{ opt}$ $I_D = 10\text{ mA}$ ; $V_{DS} = 10\text{ V}$ ; $+V_{G2-S} = 4\text{ V}$ ; $f = 800\text{ MHz}$	$F$	typ.	2,8 dB

## MECHANICAL DATA

DataSheet4U.com

Dimensions in mm

Fig. 1 SOT-103.





## STATIC CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$

Gate cut-off currents

$\pm V_{G1-S} = 7\text{ V}; V_{G2-S} = V_{DS} = 0$	$\pm I_{G1-SS}$	<	25 nA
$\pm V_{G2-S} = 7\text{ V}; V_{G1-S} = V_{DS} = 0$	$\pm I_{G2-SS}$	<	25 nA

Gate-source breakdown voltages

$\pm I_{G1-SS} = 10\text{ mA}; V_{G2-S} = V_{DS} = 0$	$\pm V_{(BR)G1-SS}$	>	8 V
$\pm I_{G2-SS} = 10\text{ mA}; V_{G1-S} = V_{DS} = 0$	$\pm V_{(BR)G2-SS}$	>	8 V

Gate-source cut-off voltages

$I_D = 20\text{ }\mu\text{A}; V_{DS} = 10\text{ V}; +V_{G2-S} = 4\text{ V}$	$-V_{(P)G1-S}$	<	1,3 V
		>	0,2 V
$I_D = 20\text{ }\mu\text{A}; V_{DS} = 10\text{ V}; V_{G1-S} = 0$	$-V_{(P)G2-S}$	<	1,1 V
		>	0,2 V

## DYNAMIC CHARACTERISTICS [DataSheet4U.com](http://DataSheet4U.com)

Measuring conditions (common source):  $I_D = 10\text{ mA}; V_{DS} = 10\text{ V}; +V_{G2-S} = 4\text{ V}; T_{amb} = 25\text{ }^{\circ}\text{C}$

Transfer admittance at $f = 1\text{ kHz}$	$ y_{fs} $	>	17 mS
		typ.	19 mS
Input capacitance at gate 1; $f = 1\text{ MHz}$	$C_{ig1-s}$	<	3,0 pF
		typ.	2,6 pF
Feedback capacitance at $f = 1\text{ MHz}$	$C_{rs}$	<	35 fF
		typ.	25 fF
Output capacitance at $f = 1\text{ MHz}$	$C_{os}$	<	1,3 pF
		typ.	1,1 pF
Noise figure at $f = 800\text{ MHz}; G_S = 5\text{ mS}; B_S = B_S\text{ opt}$	F	<	3,9 dB
		typ.	2,8 dB