

ATF523

N-CHANNEL SILICON JUNCTION

FIELD EFFECT TRANSISTOR

TAG[®]

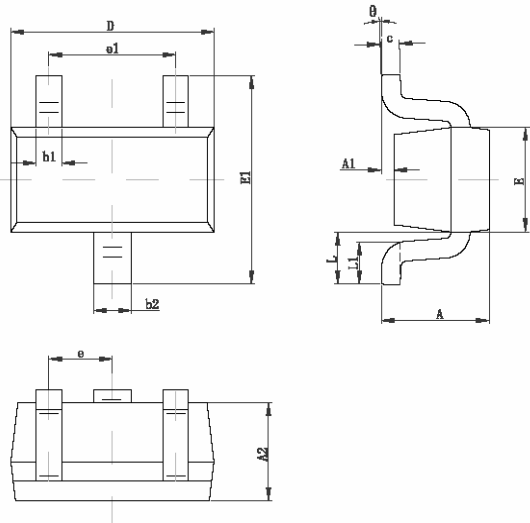
Features

- The **ATF523** is suitable for Impedance Converter of **ECM**.
- Excellent Forward Transfer Admittance
 $I_{DSS}=200\mu A, 1200\mu S$ (Typ.)
- Excellent Frequency Characteristics
- Low Noise
- Available in **Pb-Free** Plating

Mechanical Data

- Case: SOT-523
- Case Material: Molded Plastic
- Available in **Pb-Free/RoHS** Compliant
- Marking: **J5R**
- Ordering & Code Information
See Page 2

Package Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.325	0.010	0.013
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.750	0.850	0.030	0.033
E1	1.450	1.750	0.057	0.069
e	0.500 TYP		0.020 TYP	
e1	0.900	1.100	0.035	0.043
L	0.550 REF		0.022 REF	
L1	0.280	0.440	0.011	0.017
θ	0°	4°	0°	4°

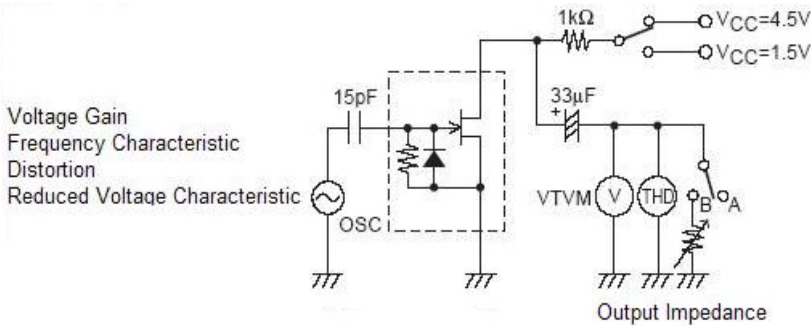
Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Parameter	Symbol	Ratings	Unit
Drain to Source Voltage	V_{DSX}	20	V
Gate to Drain Voltage	V_{GDO}	-20	V
Drain Current	I_D	10	mA
Gate Current	I_G	10	mA
Total Power Dissipation	P_T	100	mW
Junction Temperature	T_J	125	°C
Storage Temperature	T_{stg}	-55 to +125	°C

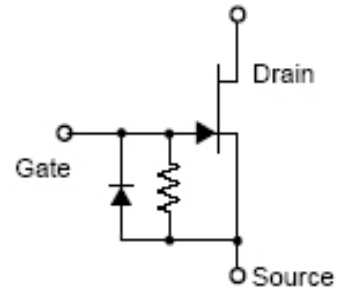
Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Rating			Unit
			Min	Typ	Max	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=5V, V_{GS}=0V$	150	250	350	μA
	$ I_{DSS} $		0	10	30	
Gate Cut-off Voltage	$V_{GS}(\text{off})$	$V_{DS}=5V, I_D=1\mu\text{A}$	-0.2		-0.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=5V, V_{GS}=0V, f=1\text{KHz}$	0.8	1.2	1.6	mS
Voltage Gain	G_V	$V_{IN}=10\text{mV}, f=1\text{KHz}$	-0.6	-3.0	-1.5	dB
Reduced Voltage Characteristics	ΔG_{VV}	$V_{in}=10\text{mV}, f=1\text{kHz}, V_{CC}=4.5\text{-}1.5\text{V}$		-1.2	-3.5	dB
Frequency Characteristics	ΔG_{Vf}	$f=1\text{kHz to } 110\text{Hz}$			-1.0	dB
Input Capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0V, f=1\text{MHz}$		7.0	8.0	pF
Drain to Source Voltage	V_{DSX}	-	20			V
Gate to Drain Voltage	V_{GDO}	-	-20			V

Test Circuit



Equivalent Circuit



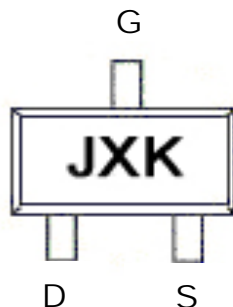
Ordering Information

The ATF523 series is classified by I_{DSS} as follows

Rank	J5R-1	J5R-2	J5R-3	J5R-4
$I_{DSS}(\mu\text{A})$	150-200	200-250	250-300	300-350

Device	Marking	Package	Shipping
ATF523	J5R	SOT-523	3000/Tape & Reel

Marking Information



J = JFET
X = Package Code
K = Rake Electronics

G=Gate
D=Drain
S=Source

X	1	2	3	5	7
Package	TO-92S	SC-59(MM)	SOT-23	SOT-523	SOT-723

Typical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

