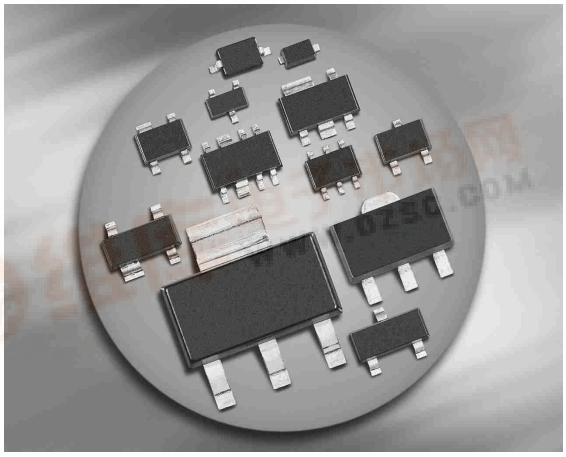
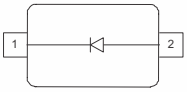
Silicon RF Switching Diode

- For band switching in TV/VTR tuners and mobile applications
- Very low forward resistance (typ. 0.45 Ω @ 3 mA)
- small capacitance



BA592
BA892/-02L
BA892-02V



Type	Package	Configuration	L_S(nH)	Marking
BA592	SOD323	single	1.8	blue S
BA892	SCD80	single	0.6	AA
BA892-02L	TSLP-2-1	single, leadless	0.4	AA
BA892-02V	SC79	single	0.6	A

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	35	V
Forward current	I_F	100	mA
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BA592		≤ 135	
BA892, BA892-02V		≤ 120	
BA892-02L		≤ 70	

1For calculation of R_{thJA} please refer to Application Note Thermal Resistance

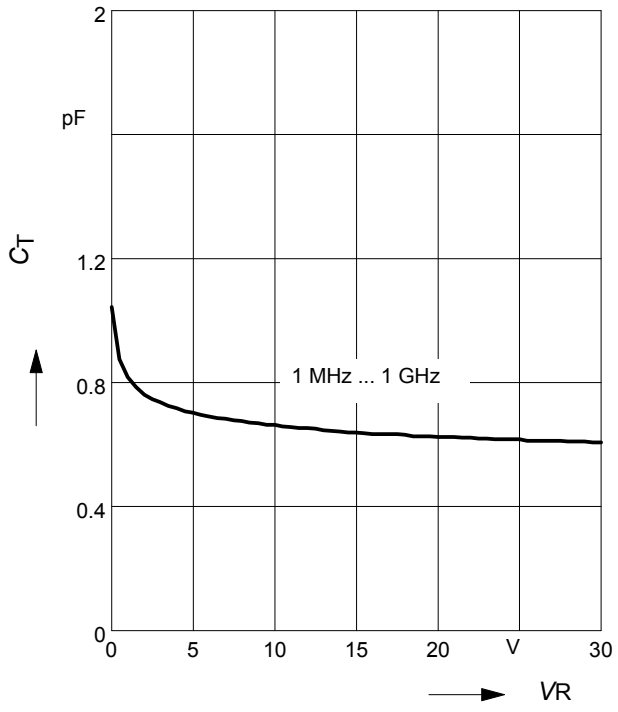
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current V_R = 20 V	I_R	-	-	20	nA
Forward voltage I_F = 100 mA	V_F	-	-	1	V
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		0.65	0.92	1.4	
V_R = 3 V, f = 1 MHz		0.6	0.85	1.1	
V_R = 0 V, f = 100 MHz		-	1	-	
Reverse parallel resistance V_R = 0 V, f = 100 MHz	R_P	-	100	-	kΩ
Forward resistance	r_f				Ω
I_F = 3 mA, f = 100 MHz		-	0.45	0.7	
I_F = 10 mA, f = 100 MHz		-	0.36	0.5	
Charge carrier life time I_F = 10 mA, I_R = 6 mA, measured at I_R = 3mA, R_L = 100 Ω	τ_{rr}	-	120	-	ns
I-region width	W_I	-	3	-	µm
Insertion loss[1)]	$\|S_{21}\|^2$				dB
I_F = 0.1 mA, f = 1 GHz		-	-0.1	-	
I_F = 3 mA, f = 1 GHz		-	-0.05	-	
I_F = 10 mA, f = 1 GHz		-	-0.04	-	
Isolation[1)]	$\|S_{21}\|^2$				
V_R = 0 V, f = 100 MHz		-	-23.5	-	
V_R = 0 V, f = 470 MHz		-	-10.5	-	
V_R = 0 V, f = 1 GHz		-	-5.5	-	

[1]BA892-02L in series configuration, Z = 50Ω

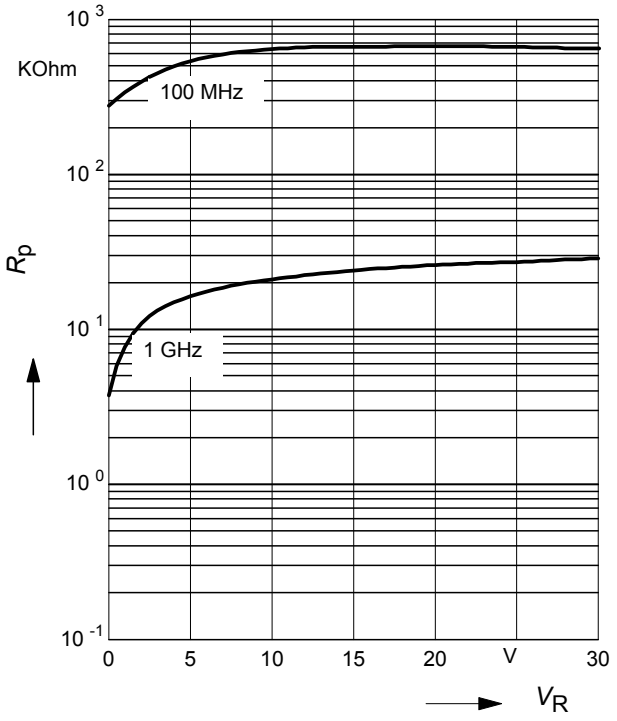
Diode capacitance $C_T = f(V_R)$

f = Parameter



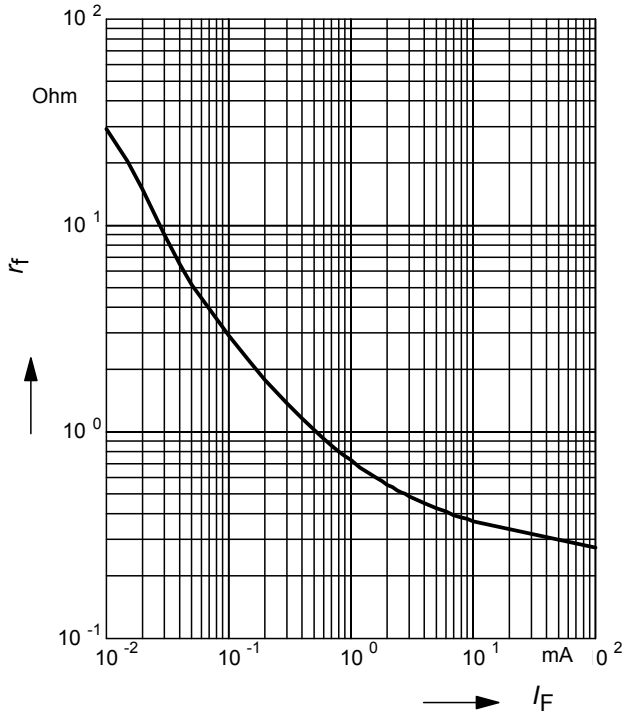
Reverse parallel resistance $R_P = f(V_R)$

f = Parameter



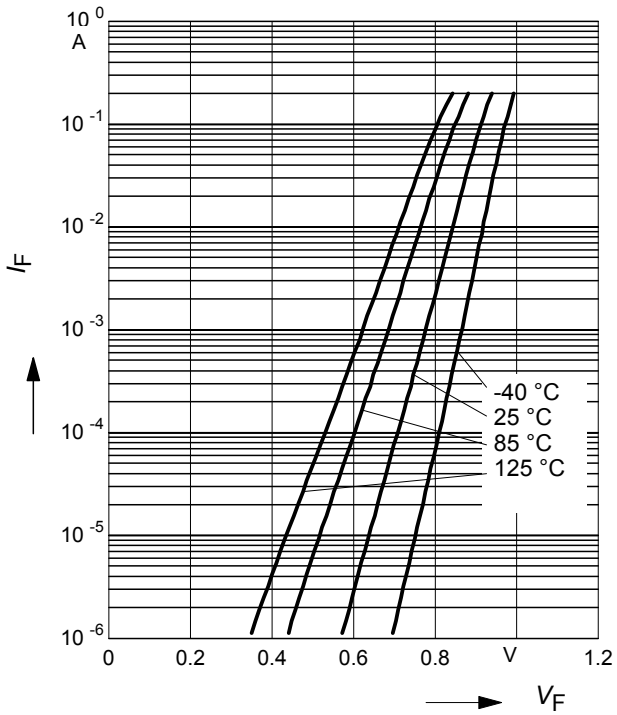
Forward resistance $r_f = f(I_F)$

f = 100MHz



Forward current $I_F = f(V_F)$

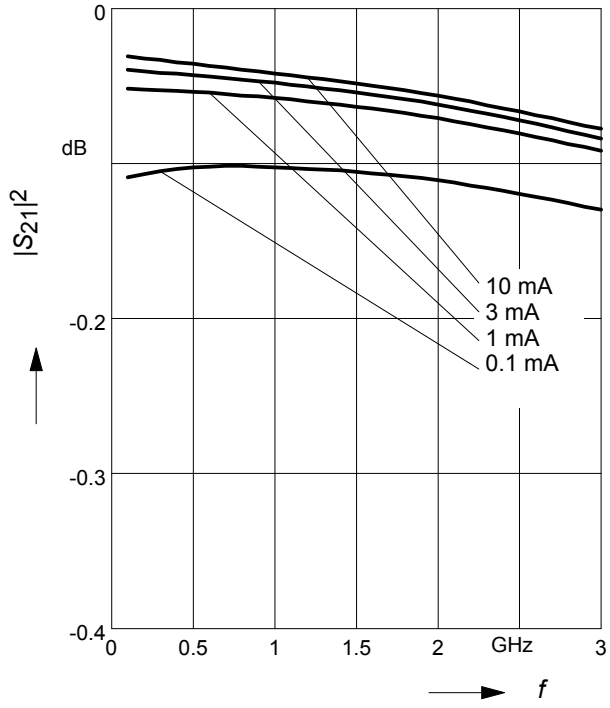
T_A = Parameter



Insertion loss $|S_{21}|^2 = f(f)$

I_F = Parameter

BA892-02L in series configuration, $Z = 50\Omega$



Isolation $|S_{21}|^2 = f(f)$

V_R = Paramter

BA892-02L in series configuration, $Z = 50\Omega$