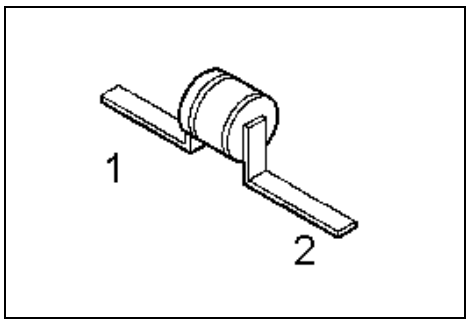
150V HiRel Silicon PIN Diode

BXY43-T1(ES)



Features

- Current controlled RF resistor for RF attenuators and switches
- High reverse voltage
- Hermetically sealed microwave package

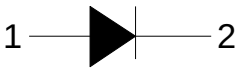
Product validation

- esa **Space Qualified**
  ESCC Detail Spec. No.: 5513/030
  Type Variant No. 02

Description

ESD: **E**lectro**s**tatic **d**ischarge sensitive device,
observe handling precautions!

Table 1 Product information

Type	Comment	Pin Configuration
BXY43-T1(ES)	For flight use	
BXY43-T1(P)[1]	Not for flight use[1]	

[1] (P) parts have the same fit, form and function as (ES) parts,
no screening acc. to Chart F3 in ESCC Generic Specification No. 5010

Table of contents

1 Maximum ratings

Table 2 Maximum ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Reverse Voltage	V_R	-	-	150	V	
Forward Current	I_F	-	-	400	mA	
Power Dissipation [1]	P_{tot}	-	-	500	mW	T_C = 87.5 °C
Operating temperature	T_{op}	-55	-	150	°C	
Storage temperature	T_{stg}	-65	-	175	°C	
Junction temperature	T_j	-	-	150	°C	

[1] For T_C > 87.5°C derating is required.

2 Thermal characteristics

Table 3 Thermal characteristics

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Thermal resistance, junction -case	$R_{th,JC}$	-	-	125	K/W	
Soldering temperature	T_{sol}	-	-	235	°C	Duration 5 seconds maximum and the same terminal shall not be resoldered until 5 minutes have elapsed.

3 Electrical characteristics

at T_A=25°C, unless otherwise specified

Table 4 Static characteristics

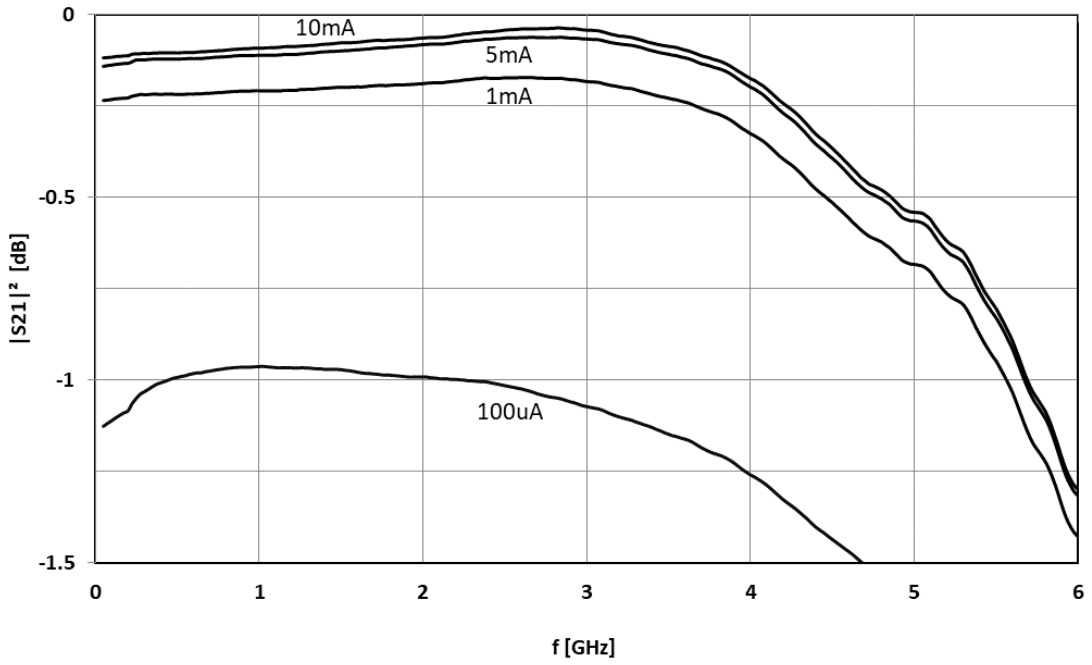
Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Reverse Current 1	I_{R1}	-	-	100	nA	V_{R1}= 150V
Reverse Current 2	I_{R2}	-	-	10	nA	V_{R2}= 100V
Forward Voltage	V_F	-	0.97	1	V	I_F= 100mA

Table 5 Dynamic characteristics

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Total Capacitance	C_T	-	0.3	0.45	pF	V_R= 50V, f= 1.0MHz
Forward Resistance 1	R_{F1}	-	55	70	Ω	f= 100MHz, I_{F1}= 20µA
Forward Resistance 2	R_{F2}	-	2.2	3.0	Ω	f= 100MHz, I_{F2}= 1mA
Forward Resistance 3	R_{F3}	-	0.9	1.5	Ω	f= 100MHz, I_{F1}= 10mA
Minority Carrier Lifetime	τ_L	250	650	-	ns	I_F= 10mA, I_R= 6mA

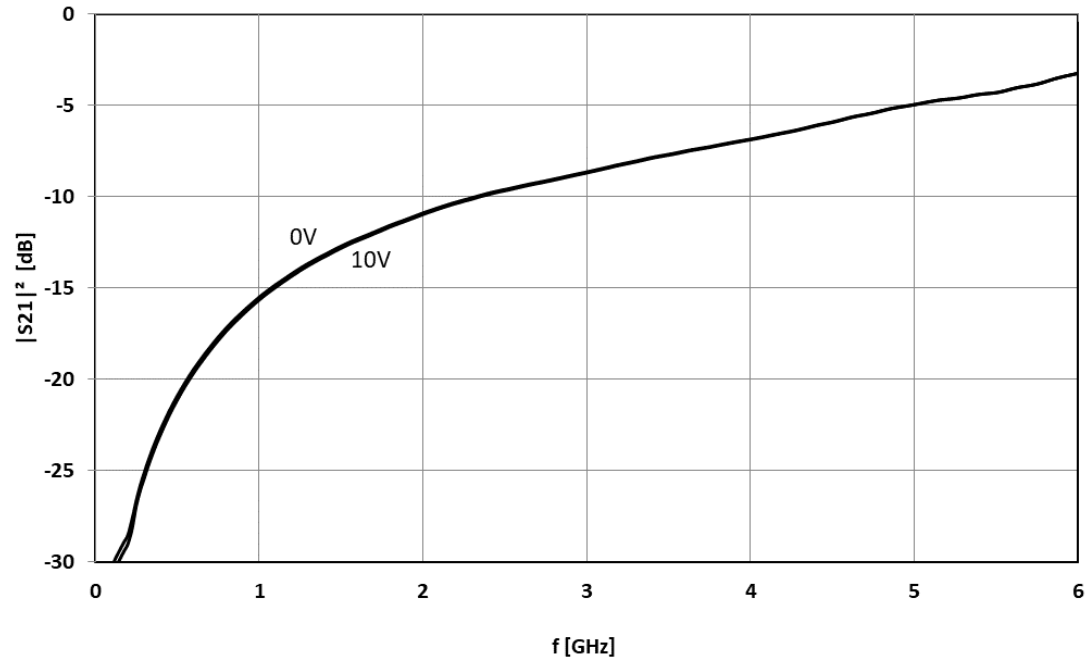
4 Electrical performance in test fixture

Diagram 1: Typical insertion loss vs. frequency



T_C = 25°C; parameter: I_F

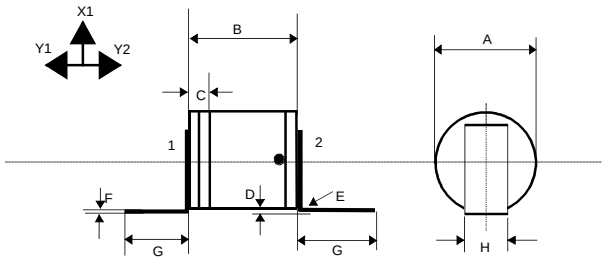
Diagram 2: Typical isolation vs. frequency



T_C = 25°C; parameter: V_R

Note: The curves shown in this chapter have been generated using typical devices but shall not be understood as a guarantee that all devices have identical characteristic curves

5 Package outlines



Symbol	Millimetre	
	min	max
A	1,30	1,45
B	1,15	1,35
C	-	0,40
D	0,10	0,50
E	-	0,30
F	0,06	0,10
G	5,50	-
H	0,40	0,60

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