


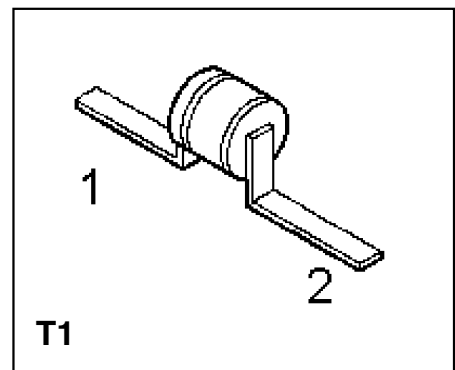
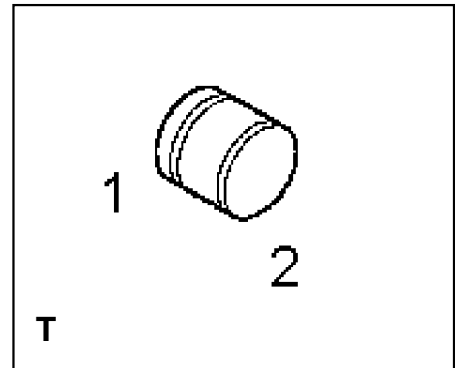
HiRel Silicon PIN Diode



BXY 42

Features

- **HiRel Discrete and Microwave Semiconductor**
- PIN Diode for high speed switching of RF signals
- Very low capacitance
- Hermetically sealed microwave package
-  qualified
- ESA/SCC Detail Spec. No.: 5513/017

ESD: Electrostatic discharge sensitive device, observe handling precautions!



Type	Marking	Ordering Code	Pin Configuration	Package
BXY 42-T (ql)	–	see below		T
BXY 42-T1 (ql)	–	see below		T1

(ql) Quality Level: P: Professional Quality, Ordering Code: Q62702X143
 H: High Rel Quality, Ordering Code: on request
 S: Space Quality, Ordering Code: on request
 ES: ESA Space Quality, Ordering Code: Q62702X168

(see **Chapter Order Instructions** for ordering example)

Table 1 Maximum Ratings

Parameter	Symbol	Limit Values	Unit
Reverse voltage	V_R	50	V
Peak forward current ¹⁾	I_{FM}	5	A
Power dissipation BXY 42-T BXY 42-T1	P_{tot}	600 350	mW
Operating temperature range	T_{op}	- 55 to + 150	°C
Storage temperature range	T_{stg}	- 65 to + 175	°C
Soldering temperature	T_{sol}	+ 250	°C
Junction temperature	T_j	175	°C
Thermal resistance junction-case BXY 42-T BXY 42-T1	$R_{th(j-c)}$	200 350	K/W

¹⁾ At $t_p = 1.0 \mu s$, duty cycle = 0.001%.

Electrical Characteristics

Table 2 DC Characteristics at $T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Reverse current 1 $V_{R1} = 50\text{ V}$	I_{R1}	–	–	10	μA
Reverse current 2 $V_{R2} = 40\text{ V}$	I_{R2}	–	–	5	nA
Forward voltage $I_F = 100\text{ mA}$	V_F	–	0.97	1.1	V

Table 3 AC Characteristics at $T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Symbol	Limit Values			Unit
		min.	typ.	max.	
Total capacitance $V_R = 50\text{ V}, f = 1\text{ MHz}$	C_T	–	0.20	0.24	μF
Forward resistance $f = 100\text{ MHz}, I_{F1} = 1\text{ mA}$	R_{F1}	–	2	3.5	Ω
Forward resistance $f = 100\text{ MHz}, I_{F2} = 10\text{ mA}$	R_{F2}	–	1	2.5	Ω
Minority carrier lifetime $I_F = 10\text{ mA}, I_R = 6\text{ mA}, I_R = 3\text{ mA}$	τ_L	35	50	–	ns

Order Instructions

Full type variant including package variant and quality level must be specified by the orderer. For HiRel Discrete and Microwave Semiconductors the ordering code specifies device family and quality level only.

Ordering Form:

Ordering Code: Q...
BXY42- (x) (ql)
(x): Package Variant
(ql): Quality Level

Ordering Example:

Ordering Code: Q62702X168
BXY42-T1 ES
For BXY42 in T1 Package; ESA Space Quality Level

Further Information

See our WWW-Pages:

- Discrete and RF-Semiconductors (Small Signal Semiconductors)
www.siemens.de/semiconductor/products/35/35.htm
- HiRel Discrete and Microwave Semiconductors
www.siemens.de/semiconductor/products/35/353.htm

Please contact also our marketing division:

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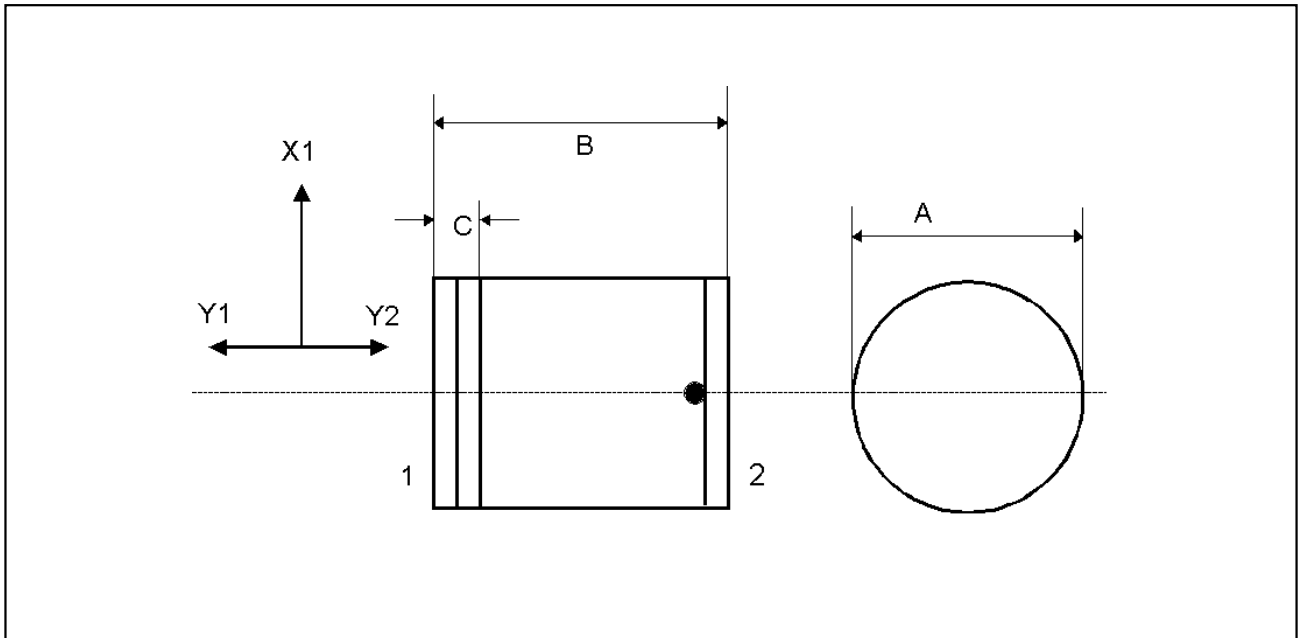


Figure 1 T Package

Symbol	Millimetre	
	min.	max.
A	1.30	1.45
B	1.15	1.35
C	–	0.40

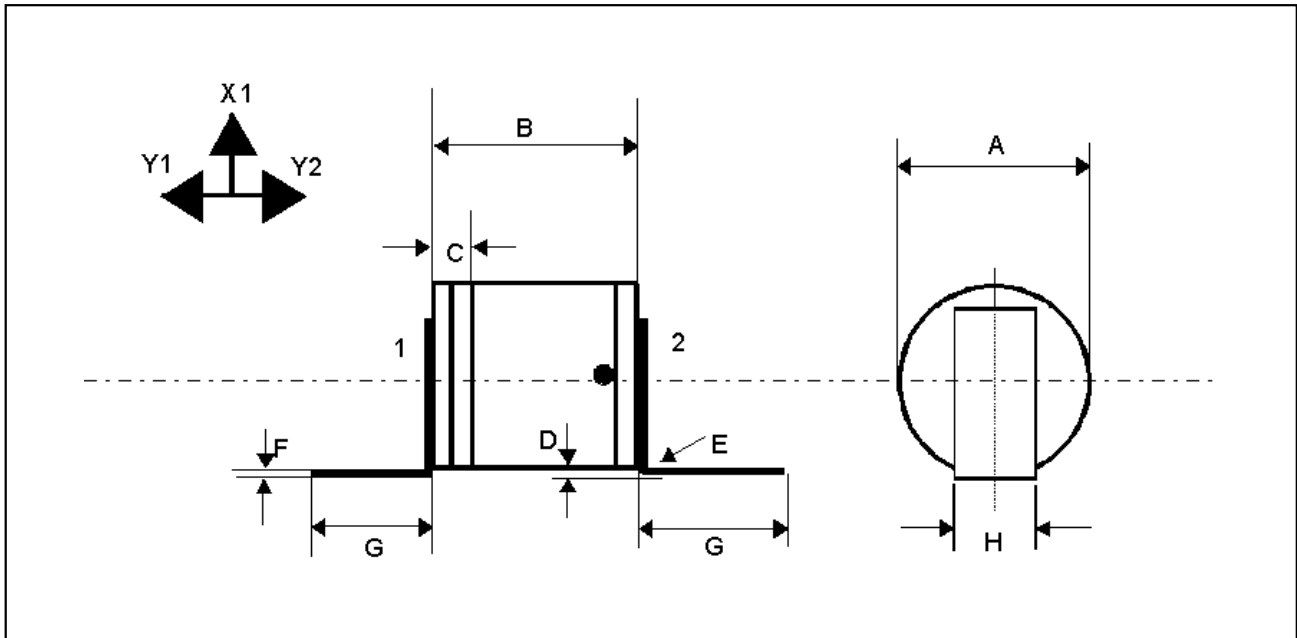


Figure 2 T1 Package

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