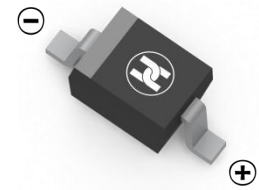
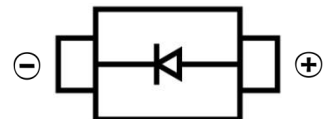


**SCHOTTKY BARRIER DIODE**
**FEATURES**

- Low conduction losses
- Very low reverse current
- Negligible switching losses
- Low capacitance diode
- Low forward and reverse recovery times
- Extremely fast switching


**SOD-323**

**MECHANICAL DATA**

- Case: SOD-323
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.005 grams (approximate)
- Marking:20

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	45	V
Repetitive Peak Forward Current	I <sub>F(RMS)</sub>	2	A
Average forward current(δ= 0.38)	I <sub>F(AV)</sub>	1	A
Non-Repetitive Peak Forward Surge Current @ t=10ms	I <sub>FSM</sub>	25	A
Power Dissipation	P <sub>D</sub>	200	mW
Thermal Resistance From Junction To Ambient*	R <sub>θJA</sub>	600	°C/W
Maximum operating Junction Temperature	T <sub>J</sub>	125	°C
Storage Temperature	T <sub>STG</sub>	-50 ~+125	°C
Maximum temperature for soldering during	T <sub>L</sub>	260	°C

(\*) Mounted on epoxy board without copper heat sink.

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Reverse breakdown voltage	V <sub>(BR)</sub>	45			V	I <sub>R</sub> =100μA
Forward voltage	V <sub>F</sub>		0.28	0.31	V	I <sub>F</sub> =10mA, T <sub>J</sub> =25°C
			0.35	0.40		I <sub>F</sub> =100mA, T <sub>J</sub> =25°C
			0.5	0.53		I <sub>F</sub> =1A, T <sub>J</sub> =25°C
Reverse voltage leakage current (Pulse test tp=380μs, δ<2%)	I <sub>R</sub>		1	5	uA	V <sub>R</sub> =5V, T <sub>J</sub> =25°C
			3	12		V <sub>R</sub> =15V, T <sub>J</sub> =25°C
			10	30		V <sub>R</sub> =45V, T <sub>J</sub> =25°C
Diode capacitance	C <sub>D</sub>		20	30	pF	V <sub>R</sub> =5V, f=1MHz

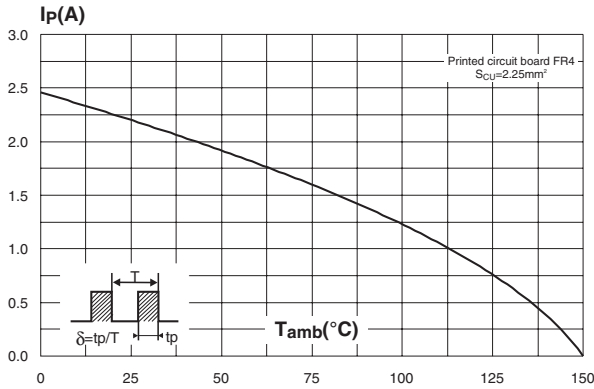
To evaluate the maximum conduction losses, use the following equations :

$$P = 0.32 \times I_{F(AV)} + 0.23 \times I_{F(RMS)} \times I_{F(RMS)}$$

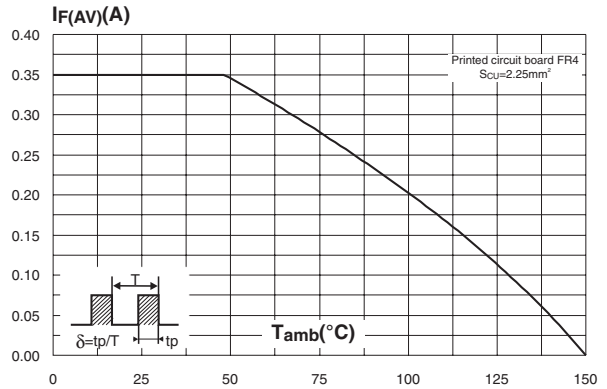
SCHOTTKY BARRIER DIODE

Typical Characteristics

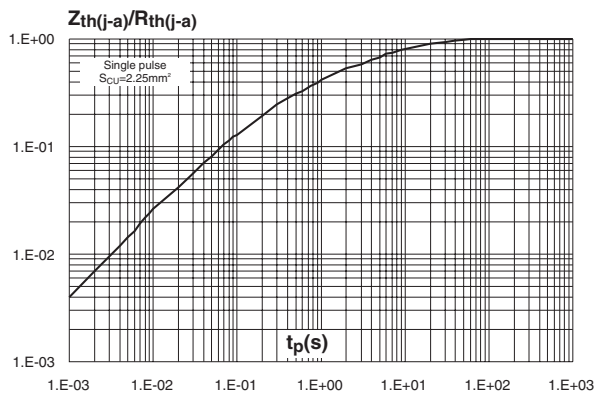
**Fig. 1:** Peak forward current versus ambient temperature ( $\delta = 0.11$ ).



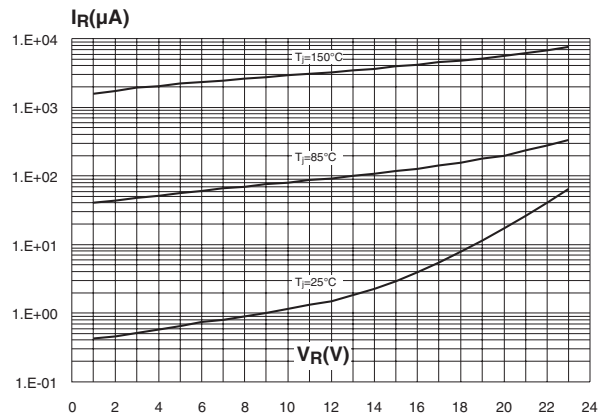
**Fig. 2:** Average forward current versus ambient temperature ( $\delta = 0.5$ ).



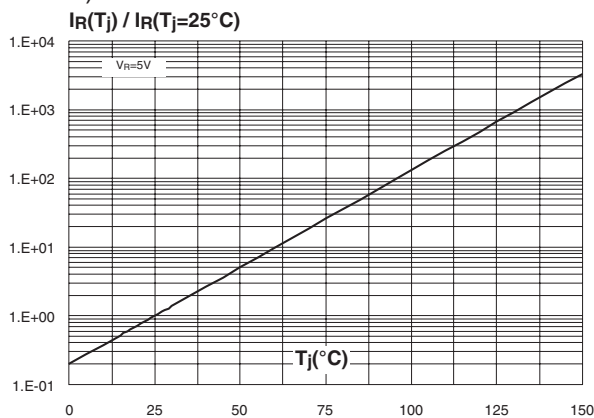
**Fig. 3:** Relative variation of thermal impedance junction to ambient versus pulse duration.



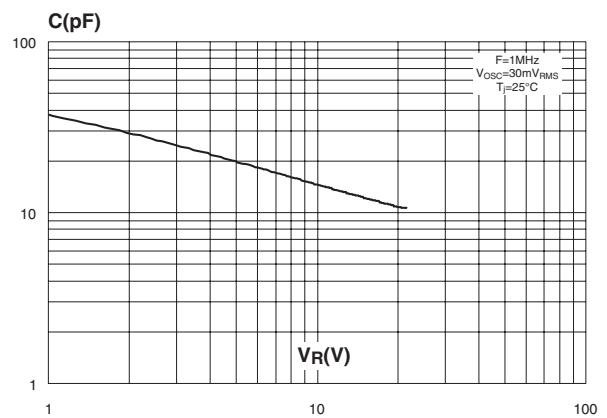
**Fig. 4:** Reverse leakage current versus reverse voltage applied (typical values).



**Fig. 5:** Relative variation of reverse leakage current versus junction temperature (typical values).

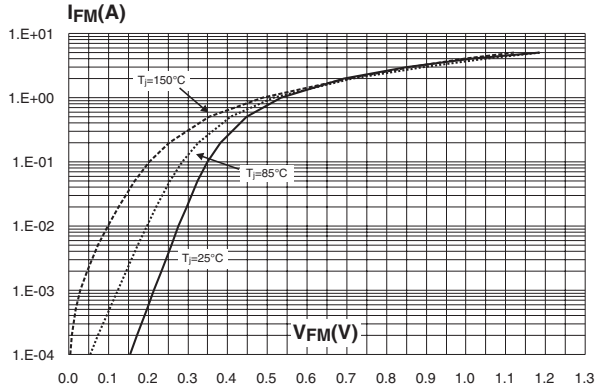


**Fig. 6:** Junction capacitance versus reverse voltage applied (typical values).

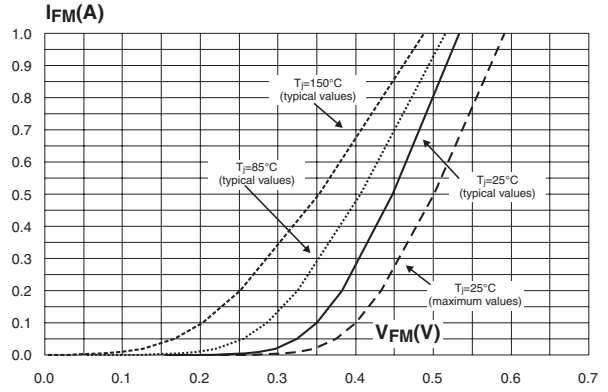


SCHOTTKY BARRIER DIODE

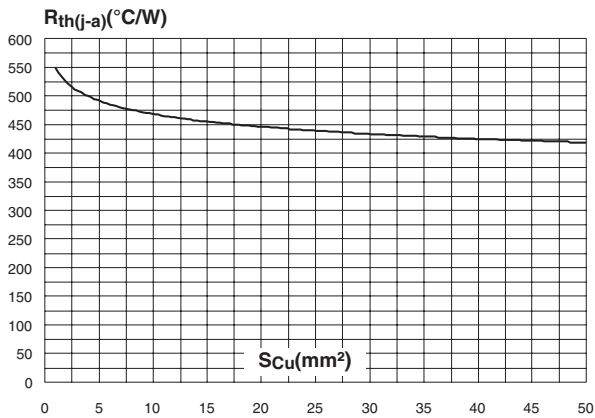
**Fig. 7-1:** Forward voltage drop versus forward current (typical values, high level).



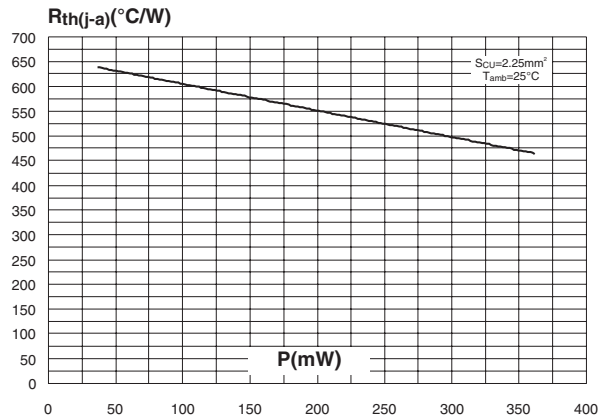
**Fig. 7-2:** Forward voltage drop versus forward current (low level).

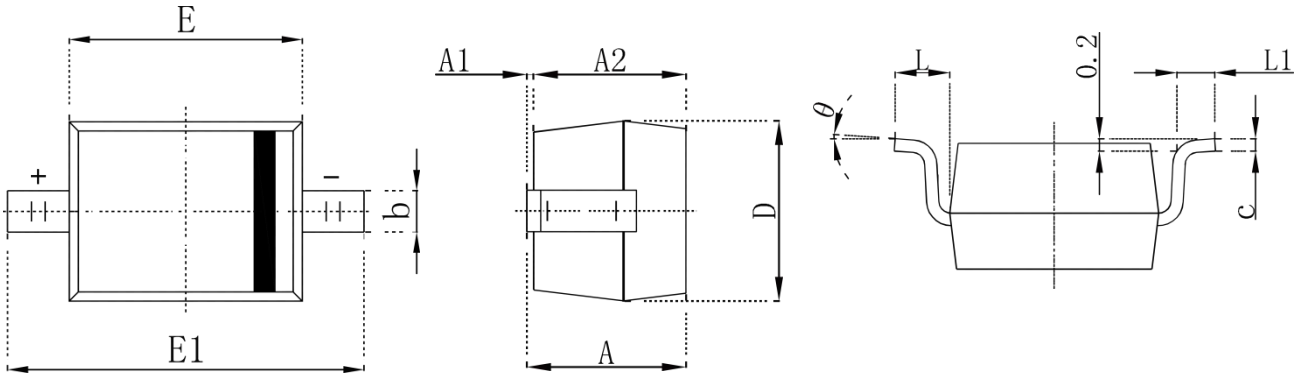


**Fig. 8:** Thermal resistance junction to ambient versus copper surface under tab (epoxy printed circuit board FR4,  $e_{CU}=35\mu m$ , typical values).



**Fig. 9:** Thermal resistance junction to ambient versus power dissipation (epoxy printed circuit board FR4,  $e_{CU}=35\mu m$ , typical values).



**SCHOTTKY BARRIER DIODE**
**SOD-323 Package Outline Dimensions**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.250	2.750	0.100	0.108
L	0.475 REF		0.019 REF	
L1	0.250	0.400	0.010	0.016
$\theta$	0°	8°	0°	8°

**SOD-323 Suggested Pad Layout**

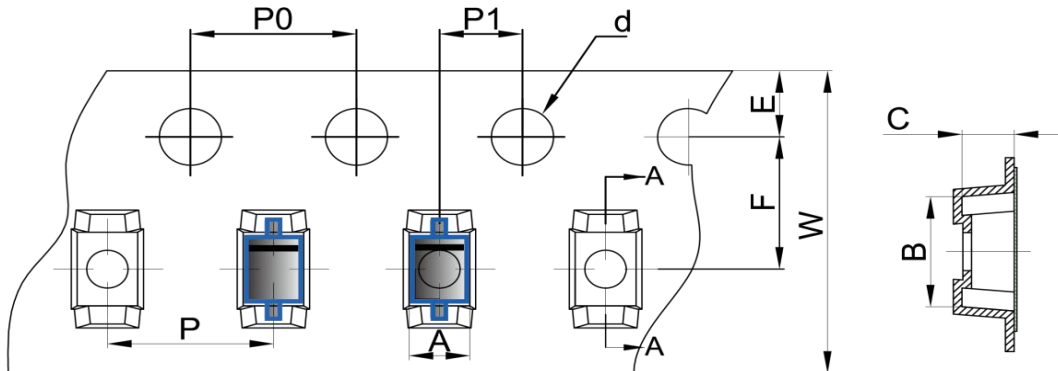
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

SCHOTTKY BARRIER DIODE

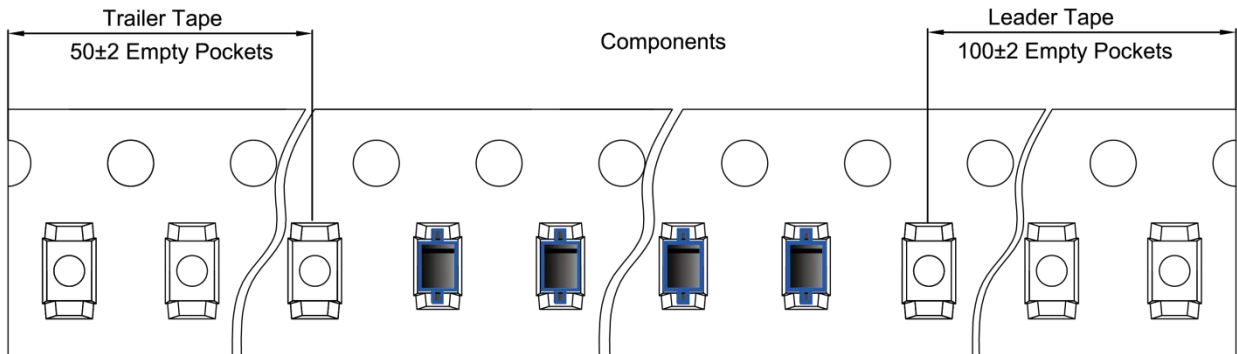
### SOD-323 Tape and Reel

#### SOD-323 Embossed Carrier Tape

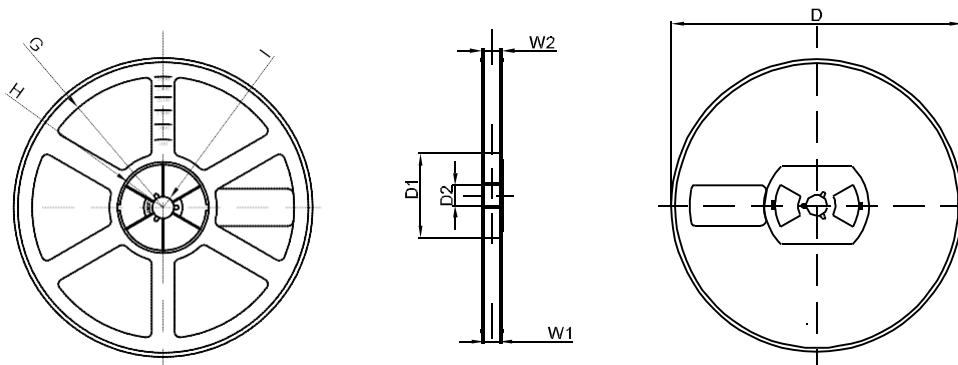


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.48	3.3	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

#### SOD-323 Tape Leader and Trailer



#### SOD-323 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1