

# SD10PU120

## High Current Density Surface Mount Schottky Rectifier

### Description

This Schottky rectifier is designed for switch mode power supply and high frequency DC to DC converters.

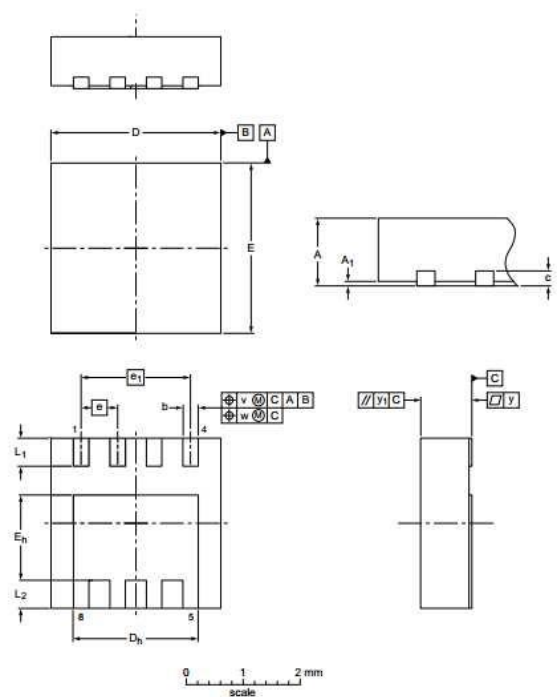
Packaged in DFN 3.3mmx3.3mm, this device is intended for use in low voltage, high frequency, inverters, free-wheeling, by-pass diode and polarity protection applications. Its low profile was especially designed to be used in applications with space-saving constraints.

### Features

- Very low conduction losses
- Negligible switching losses
- Extremely fast switching
- Low thermal resistance
- Avalanche capacity specified
- High junction temperature
- RoHS compliant package

### Packing & Order Information

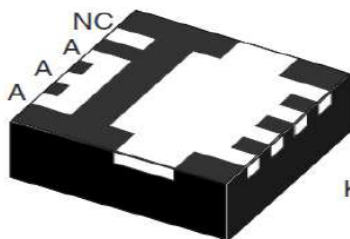
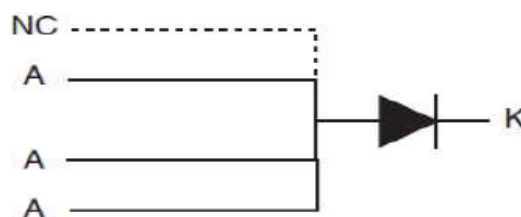
3,000/Reel



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b	c	D	D <sub>H</sub>	E	E <sub>H</sub>	e	e <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	v	w	y	y <sub>1</sub>
mm	1	0.05 0.00	0.45 0.25	0.2	3.4 3.2	2.4 2.2	3.4 3.2	1.80 1.58	0.65	1.95	0.55 0.45	0.52 0.35	0.1	0.05	0.1	0.1

aphic symbol



**RoHS  
COMPLIANT**

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum Ratings (T<sub>c</sub>=25°C unless otherwise noted)

Parameter	Symbol	SD10PU120	Unit
Maximum repetitive peak reverse voltage	VRRM	120	V
Working peak reverse voltage	VRWM	105	V
Maximum DC blocking voltage	VDC	120	V
Maximum average forward rectified current Total device	IF(AV)	10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	IFSM	100	A

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#### Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	SD10PU120	Unit
Non-repetitive avalanche energy at 25 °C IAS = 2 A per diode	EAS	10	m'J
Operating junction temperature range	TJ	-55 to +150	°C
Storage temperature range	TSTG	-55 to +150	°C

#### Electrical characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value		Unit
		Typical	Max	
Instantaneous forward voltage at IF=5A, Tj=25°C at IF=10A, Tj=25°C at IF=5A, Tj=125°C at IF=10A, Tj=125°C	VF	0.60 0.80 0.55 0.68	0.66 0.85 0.60 0.72	V
Maximum reverse current per leg Tj=25°C	IR	100		u'A
at working peak reverse voltage Tj=125°C		5		m'A

Note:

- (1) Pulse test: 300 µs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

#### Thermal characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Typical thermal resistance	RθJM	4 <sup>(1)</sup>	°C/W
	RθJA	90 <sup>(2)</sup>	

Notes:

- (1) Mounted on 30 mm x 30 mm Al P.C.B.; thermal resistance RθJM - junction to mount
- (2) Free air, mounted on recommended copper pad area

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Schottky Rectifier

### CHARACTERISTICS CURVE

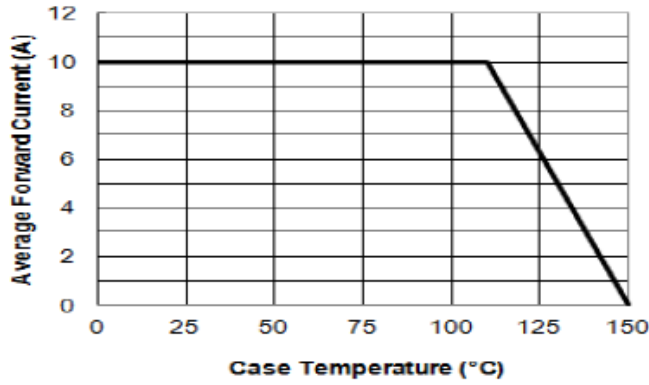


Figure 1. Forward Current Derating Curve

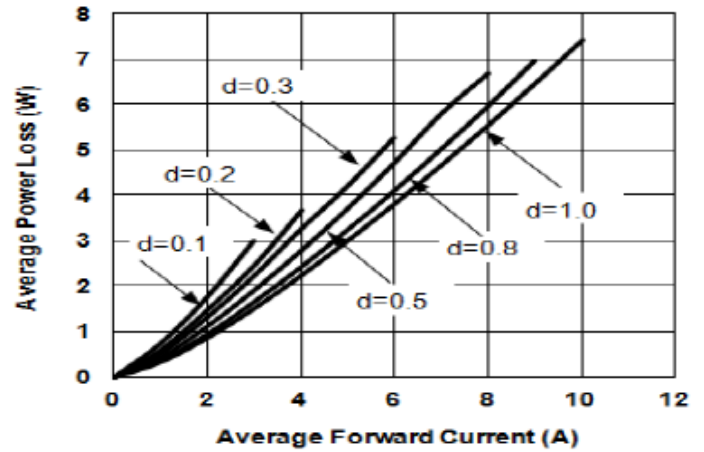


Figure 2. Forward Power Loss Characteristics

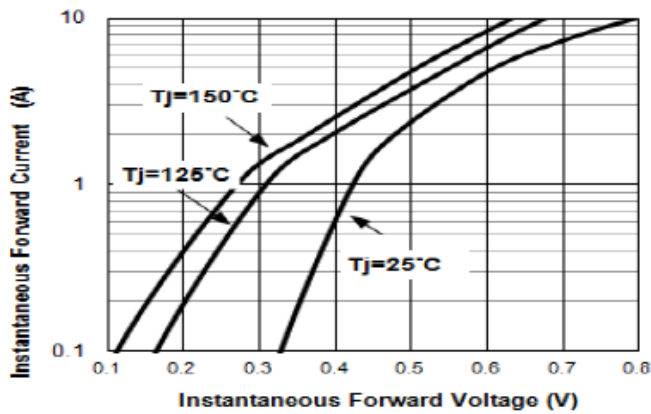


Figure 3. Typical Instantaneous Forward Characteristics

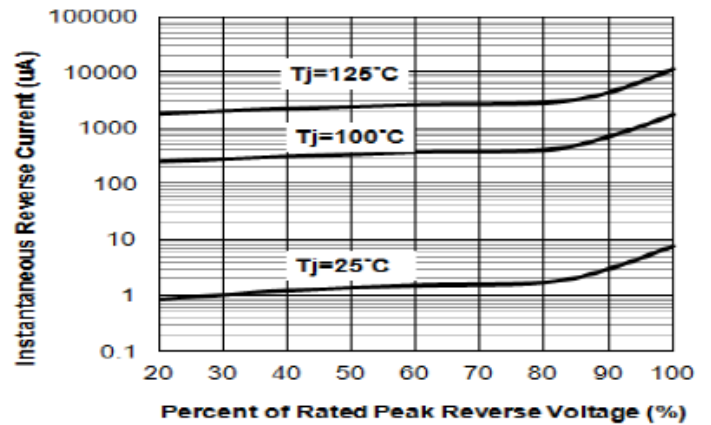


Figure 4. Typical Reverse Characteristics

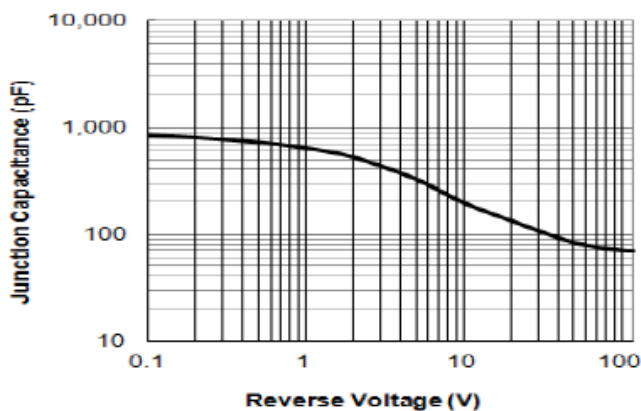


Figure 5. Typical Junction Capacitance

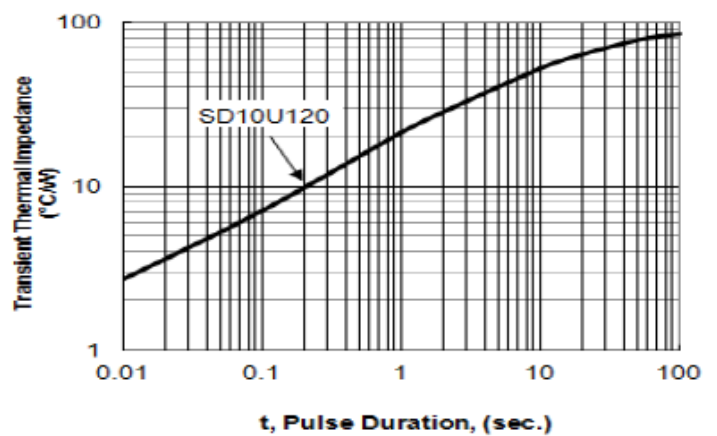


Figure 6. Typical Transient Thermal Impedance

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