

高壓開關二極管

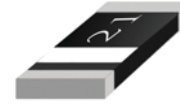
CDBAV21W (1206)  
200V / 0.2A

High Voltage Chip Switching Diode

FEATURE:

- Silicon epitaxial planer diode.
- SMD chip pattern, available in various dimension included 0805
- Lead free and **RoHS** compliance components.

Figure

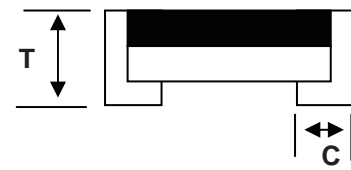
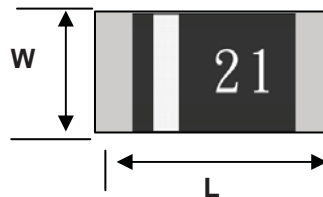


MECHANICAL CHARACTERISTICS:

- Size : 1206
- Weight: Approx 10.0mg.
- Marking: Bar as cathode terminal;  
21 as  $V_{RRM}$  200V high voltage switching diode.

DIMENSION:

Dimension (mm)	Type: 1206
L	3.2 ± 0.2
W	1.50 ± 0.2
T	0.85 ± 0.1
C	0.55 ± 0.2



THERMAL CHARACTERISTICS<sup>1)</sup>:

Parameter at Tamb = 25°C	Symbol	Value	Unit
Forward Power Dissipation	P <sub>tot</sub>	400	mW
Power rerating above 25°C		3.2	mW/°C
Junction Temperature	T <sub>j</sub>	150	°C
Thermal Resistance Junction to Ambient air	Ro <sub>ja</sub>	375	°C/W
Storage Temperature range	T <sub>stg</sub>	-55 to 150	°C

1. Valid provided that electrodes are kept at ambient temperature.

MAXIMUM RATING:

Parameter at Tamb = 25°C <sup>1)</sup>	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	200	V
Average rectified current sin half wave rectification with resistive load.	$I_{F(AV)}$	200	mA
Repetitive Peak Forward Current at $f \geq 50\text{Hz}$ , $\theta = 180^\circ$ , Tamb = 25°C	$I_{FRM}$	300	mA
Non-repetitive surge forward current at $t_1 < 1\text{s}$ and $T_j = 25^\circ\text{C}$ . at $t \leq 8.3\text{ms}$ and $T_j = 25^\circ\text{C}$	$I_{FSM}$	500	mA
		1000	mA

1. Valid provided that electrodes are kept at ambient temperature.

ELECTRICAL CHARACTERISTICS:

Parameter at Tamb = 25°C <sup>1)</sup>	Symbol	Value	Unit
Forward Voltage at $I_F = 100\text{mA}$ at $I_F = 200\text{mA}$	$V_F$	1.0 max	V
		1.25 max	V
Leakage Current at $V_R = 200\text{V}$	$I_R$	0.1 max	uA
Capacitance at $V_R = 0\text{V}$ , $f = 1\text{MHz}$	$C_{tot}$	5 max	pF
Reverse Recovery Time at $I_F = I_R = 30\text{mA}$ , $R_L = 100 \Omega$	$t_{rr}$	50 max	ns

1). Valid provided that electrodes are kept ambient temperature.



High Voltage Switching Diode

□ TYPICAL CHARACTERISTICS

Figure 1. Forward Characteristic

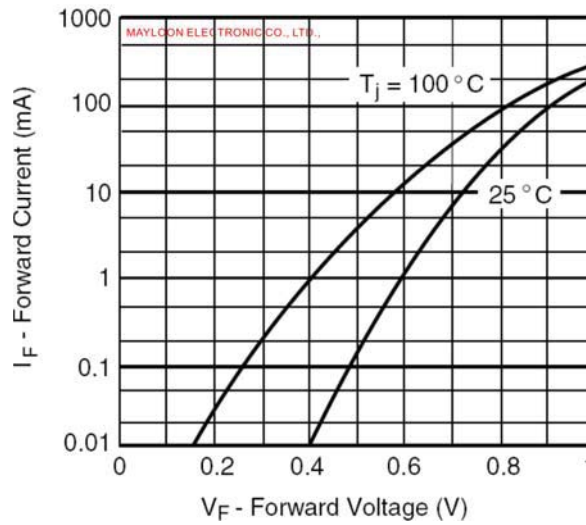


Figure 2. Power De-Rating

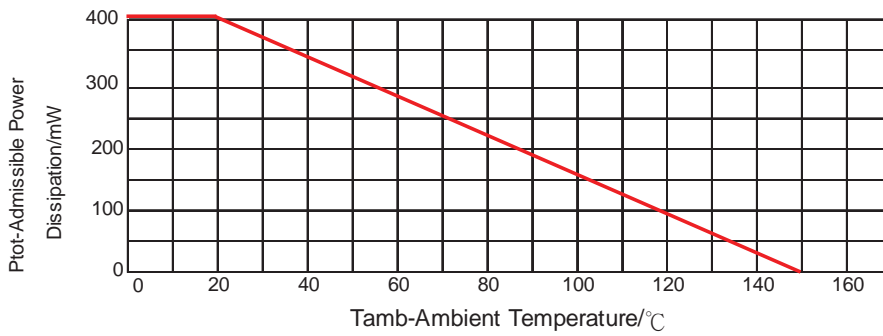


Figure 3. Forward Current De-Rating

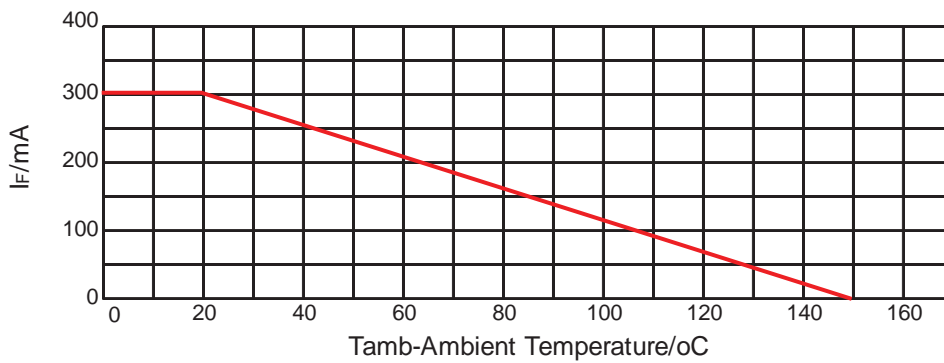
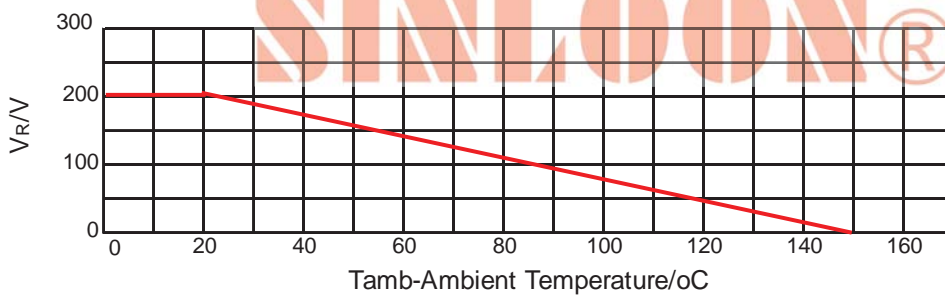


Figure 4. Reverse Voltage De-Rating



**High Voltage Switching Diode**

**TEST CHARACTERISTICS:**

Test Item	Test Condition	Requirement
Solder ability	Sn bath at 245±5°C for 2±0.5s	>95% area tin covered
Resistance to Soldering Heat	Sn bath at 260±5°C for 10±0.5s	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec, no mechanical damage
Humidity Steady State	At 85°C 85%RH for 168hrs	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec
Continue Forward Operating Life	At 25°C I <sub>F</sub> = 1.1 I <sub>F</sub> for 1000hrs	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec
Hi-Temperature Reverse Bias	At 150°C V <sub>R</sub> = 0.8V <sub>R</sub> rated for 1000hrs	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec
Thermal Shock	-55±5°C/5min to 150±5°C/5min for 10cycles	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec
Bending Strength	Bending up to 2mm for 1 cycle	V <sub>F</sub> , V <sub>Z</sub> , & I <sub>R</sub> Within spec, no mechanical damage

**APPLICATIONS:**

- Function: Fast Switching, suit for fast ac switching input and high reverse voltage.
- Soldering Condition:

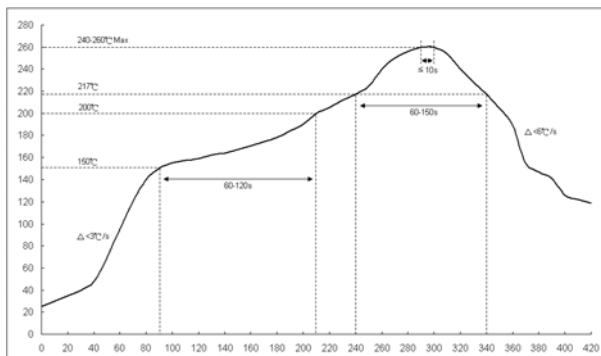
**Soldering Condition & Caution:**

■ Recommended Soldering Condition (Refer to IPC/JEDEC J-STD-020D 4-1&5.2)

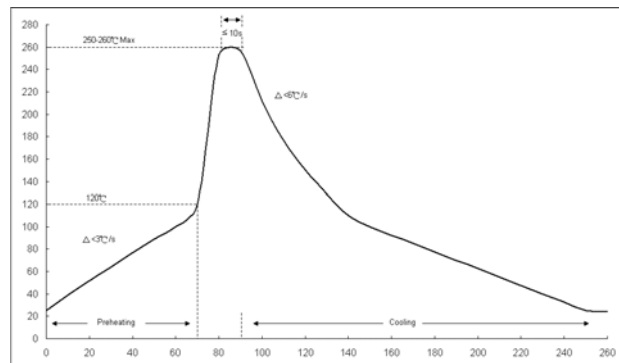
Recommended Profile Condition	Sn-Pb Soldering	Lead-free Soldering	Wave Soldering
Ramp-up rate (from pre-heat stage)	<3°C/s	<3°C/s	ΔT<150°C
Pre-heat Temperature & Time	100-150°C, 60~120s	100-200°C, 60~120s	100-150°C, 60~120s
Soldering Temperature & Time	183°C, 60~150s	270°C, 60~150s	260±5°C, 5±2s
Peak Temperature	230±5°C, <260°C	245±5°C, <260°C	260±5°C
Time within 5°C of peak temperature	10~20s	20~30s	-
Ramp-down rate	<6°C/s	<6°C/s	<6°C/s
Time 25°C to peak temperature	<6min	<8min	-

Manual Soldering: Approx. 350°C for 3s, avoid solder iron tip direct touch the components body.

**RECOMMENDED SOLDERING PROFILE:**



Reflow soldering profile for lead-free solder (SnAgCu)



Wave Soldering Profile

- 1). The recommended profiles are referring to IPC/JEDEC J-STD-020D & IEC-600068-2-58
- 2). Chip diode are able to stand maximum soldering temperature up to 260°C max for 10s, and the soldering cycles with max 3 times, referring to IEC-60068-2-58.

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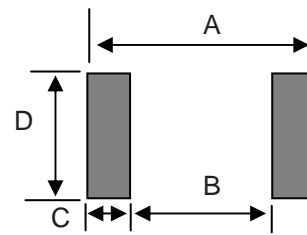
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**High Voltage Switching Diode**

■ **RECOMMENDED SOLDERING FOOTPRINT**

Refloe/Wave Soldering:

Size:	Dimension (mm)			
	A	B	C	D
0805	2.2~3.0	1.1~1.2	0.5~0.9	1.2~1.4
1206	3.8~4.6	2.1~2.2	0.8~1.2	1.5~1.7



- **Storage Condition:** Product termination solderability can degrade due high temperature and humidity or chemical environment, Storage condition must be in an ambient temperature of <40°C and ambient humidity of <75%RH, and free from chemical.

■ **ENVIRONMENTAL CHARACTERISTICS**

Product	Hazardous Substance or Element / ppm					
	Pd	Cd	Hg	Cr <sup>6+</sup>	PBB	PBDE
	<1000	<100	<1000	<1000	<1000	<1000
Product	Halogen Substance / ppm					
	F	Cl	Br	I	-	Total
	<900	<900	<900	<900	-	<1500

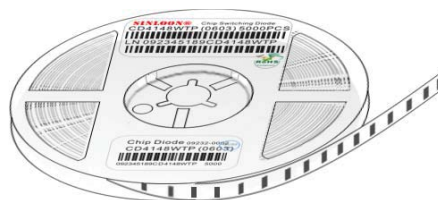
■ **PACKING**

Produce	Quantity / Reel	Reel Size	Tape
0805	5000	7"	Paper
1206	5000	7"	Paper

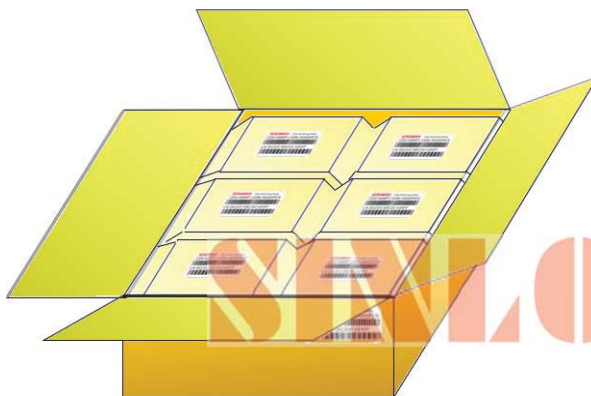
**Carton:**

Size: 39x39x20 cm  
Quantity 300K / Ctn.  
In Box: 6 Box  
Box Qty: 50K/Box  
Reel: 5K/Reel

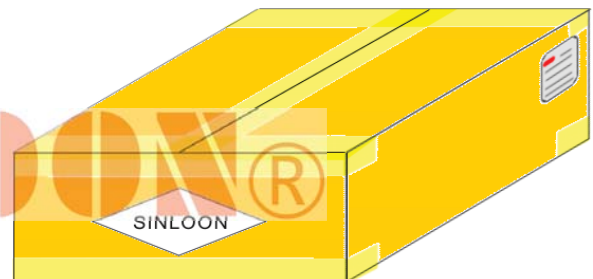
Reel



Inner Box



Carton



※美隆電子產品規格特性參數的改變或更新,將不會另行通知。

※Mayloon characteristic parameters of electronic product specification changes or updates without prior notice。

