

FEATURE:

- Silicon epitaxial planer diode.
- SMD chip pattern, available in various dimension included 1206
- Lead free and **RoHS** compliance components.

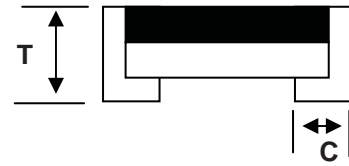
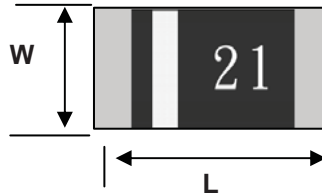


MECHANICAL CHARACTERISTICS:

- Size : 0805
- Weight: Approx 6.0mg.
- Marking: Bar as cathode terminal;
21 as V_{RRM} 200V high voltage switching diode.

DIMENSION:

Dimension (mm)	Type: 0805
L	2.0 ± 0.2
W	1.25 ± 0.2
T	0.85 ± 0.1
C	0.45 ± 0.2



THERMAL CHARACTERISTICS¹⁾:

Parameter at Tamb = 25°C	Symbol	Value	Unit
Forward Power Dissipation	P _{tot}	200	mW
Power derating above 25°C		1.6	mW/°C
Junction Temperature	T _j	150	°C
Thermal Resistance Junction to Ambient air	Ro _{ja}	375	°C/W
Storage Temperature range	T _{stg}	-55 to 150	°C

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

MAXIMUM RATING:

Parameter at Tamb = 25°C ¹⁾	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 ¹⁾	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.

□ TYPICAL CHARACTERISTICS

Figure 1. Forward Characteristic

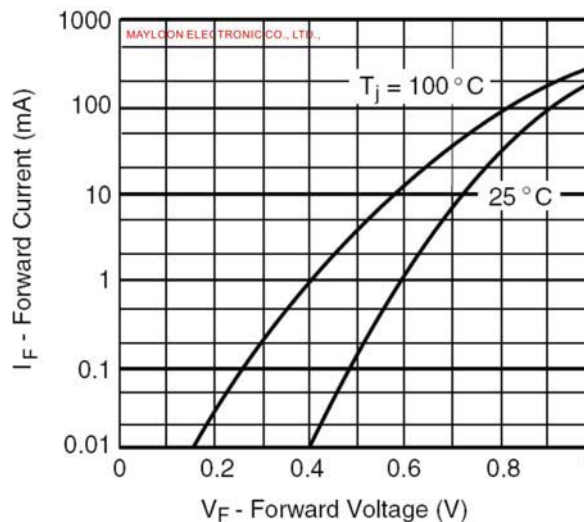


Figure 2. Power De-Rating

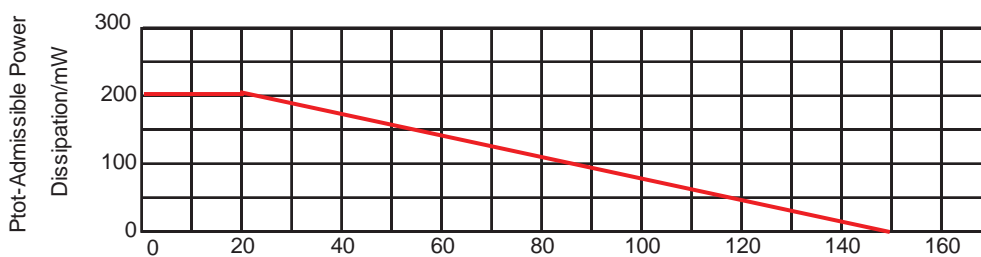


Figure 3. Forward Current De-Rating

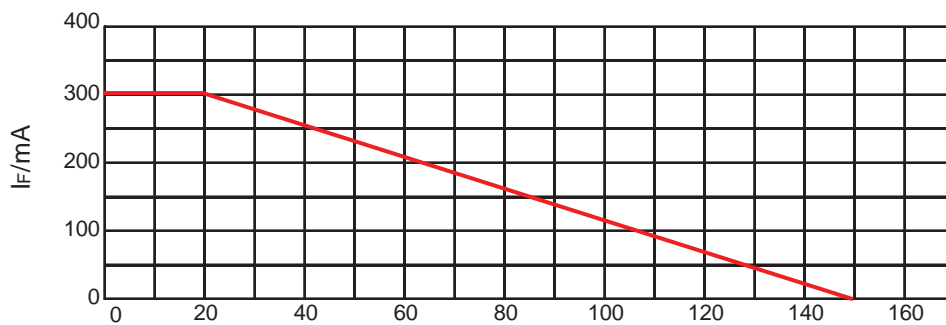
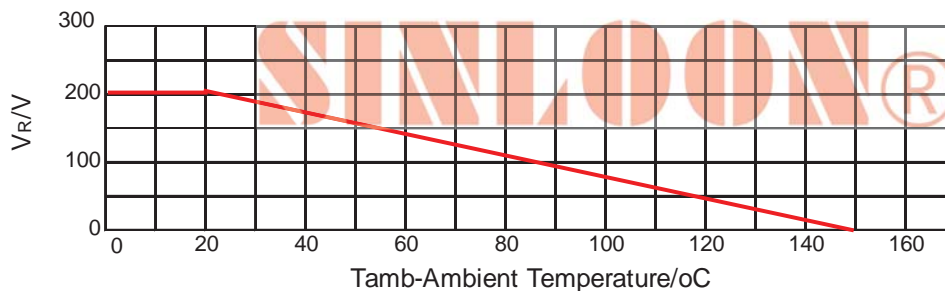


Figure 4. Reverse Voltage De-Rating



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 _F , V _Z , & I _R Within spec, no mechanical damage
Humidity Steady State	At 85°C 85%RH for 168hrs	V _F , V _Z , & I _R Within spec
Continue Forward Operating Life	At 25°C I _F = 1.1 I _F for 1000hrs	V _F , V _Z , & I _R Within spec
Hi-Temperature Reverse Bias	At 150°C V _R = 0.8V _R rated for 1000hrs	V _F , V _Z , & I _R Within spec
Thermal Shock	-55±5°C/5min to 150±5°C/5min for 10cycles	V _F , V _Z , & I _R Within spec
Bending Strength	Bending up to 2mm for 1 cycle	V _F , V _Z , & I _R Within spec, no mechanical damage

APPLICATIONS:

- Function: Fast Switching.
- Soldering Condition:

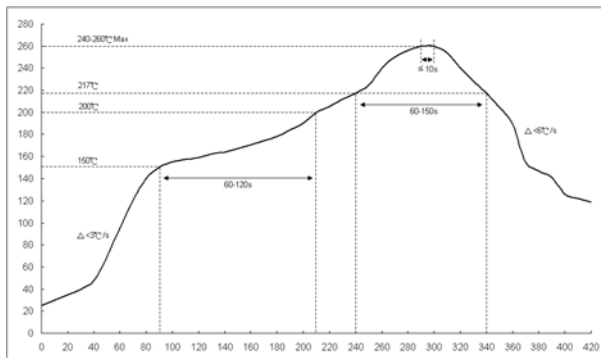
Soldering Condition & Caution:

■ Recommended Soldering Condition (Refer to IPC/JEDEC J-STD-020D 5-1)

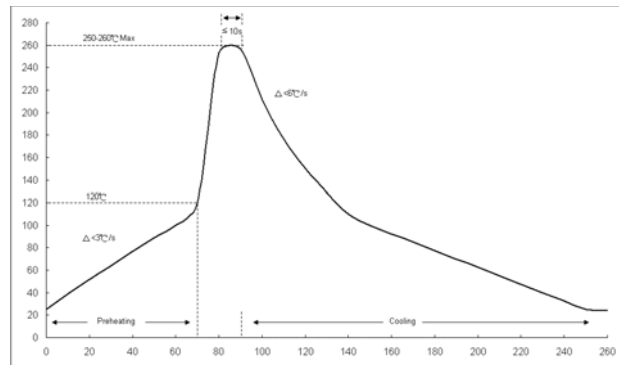
Recommended Profile Condition	Sn-Pb Soldering	Lead-free Soldering	Wave Soldering
Ramp-up rate (from pre-heat stage)	<3°C/s	<3°C/s	ΔT<150°C
Pre-heat Temperature & Time	100-150°C, 60~120s	100-200°C, 60~120s	100-150°C, 60~120s
Soldering Temperature & Time	183°C, 60~150s	270°C, 60~150s	260±5°C, 5±2s
Peak 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-60068-2-58
- 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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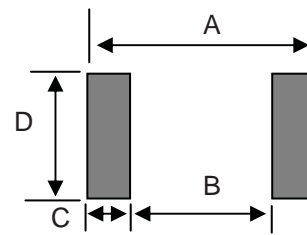
CDBAV21WS (0805)

High Voltage Chip Switching Diode (200V 0.2A)

■ **RECOMMENDED SOLDERING FOOTPRINT**

Refloe/Wave Soldering:

Size:	Dimension (mm)			
	A	B	C	D
0805	2.2~3.0	1.2	0.5~0.9	1.2~1.4
1206	3.4~4.2	2.1~2.2	0.6~1.0	1.5~1.7



- **Storage Condition:** Product termination solder ability can degrade due high temperature and humidity or chemical environment, Storage condition must be in an ambient temperature of <math><40^{\circ}\text{C}</math> and ambient humidity of <math><75\%RH</math>, and free from chemical.

■ **ENVIRONMENTAL CHARACTERISTICS**

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

■ **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

