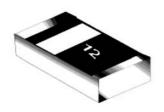


# Zener Diodes CDZ55C-SM Series



#### **FEATURES**

- Silicon planar power zener diodes
- SMD chip pattern, available in various dimension included 0603(CDZ55C-TM series)
- Leadfree and RoHS compliance components
- Zener-M series as low IR suit for mobile design

## **MECHANICAL CHARACTERISTICS**

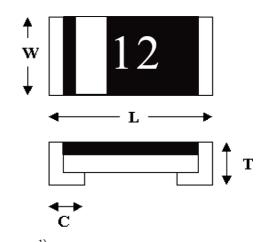
■ Size: 0805 (SOD-323 equivalent)

■ Weight: approx. 6mg

■ Marking: Zener voltage & cathode terminal

### **DIMENSIONS**

Dimension/mm	0805
L	2.0±0.2
W	1.25±0.2
Т	0.85±0.1
С	0.45±0.2



# MAXIMUM RATING & THERMAL CHARACTERISTICS1)

Parameter at T <sub>amb</sub> =25°C <sup>1)</sup>	Symbol	Value	Unit
Power Dissipation	P <sub>tot</sub>	500	mW
Repetitive Peak Forward Current	${ m I}_{\sf FRM}$	200	mA
Junction Temperature	T <sub>j</sub>	150	°C
Thermal Resistance Junction to Ambient air	$R_{\theta JA}$	300	°C/W
Operating & Storage Temperature range	T <sub>opr. sta</sub>	-55 to 150	°C

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.



# **ELECTRICAL CHARACTERISTICS**<sup>1)</sup>

Parameter at T <sub>amb</sub> =25°C <sup>1)</sup>	Symbol	Value	Unit
Forward Voltage at I <sub>F</sub> =200mA	V <sub>F</sub>	1.5 <sub>MAX</sub>	V
Zener Voltage Tolerance, C=±5%			

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.

Part Number	Marking Code	-		Max Zener Impedance				Max Reverse Leakage Current	
	Code			Z <sub>ZT</sub> @ I <sub>ZT</sub>		$Z_{ZK} @ I_{ZK}$		I <sub>R</sub> @ V <sub>R</sub>	
		Min V	Max V	Ω	mA	Ω	mA	μΑ	V
CDZ55C5V1SM	5V1	4.85	5.36	50	5	550	1	0.1	1
CDZ55C5V6SM	5V6	5.32	5.88	30	5	450	1	0.1	1

## TYPICAL CHARACTERISTICS

Figure 1. Forward current vs Forward Voltage

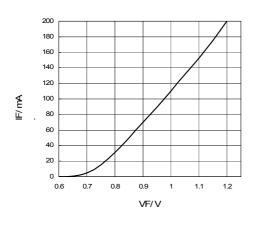
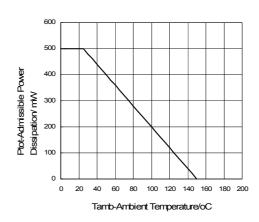


Figure 2. Power De-rating



# **TEST CHARACTERISTICS**

Test Item	Test Condition	Requirement
Solderability	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±2s	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 $I_F = 1.1I_F$ 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 1cycle	$V_F$ , $V_Z$ & $I_R$ within spec; no mechanical damage



#### **APPLICATIONS**

- Function: constant voltage control
- 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	Leadfree Soldering	Wave Soldering
Ramp-up rate (from pre-heat stage)	<3°C/s	<3°C/s	∆T<150°C
Dro host Tomporaturo & Timo	100-150 °C	150-200 °C	100-150 °C
Pre-heat Temperature & Time	60-120s	60-120s	60-120s
Coldoring Tomporature 9. Time	183 ℃	217 °C	260±5°C
Soldering Temperature & Time	60-150s	60-150s	5±2s
Peak Temperature	230±5°C	245±5°C	260±5°C
reak remperature	<260°C	<260°C	200±3 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

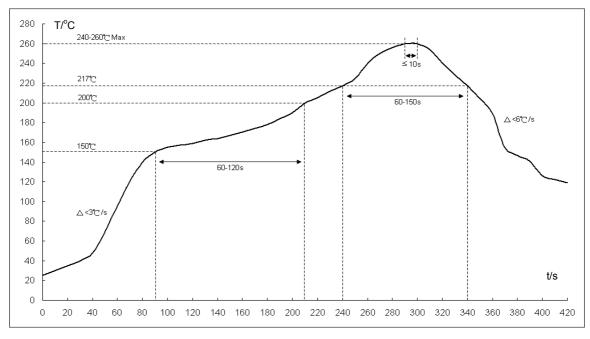


Fig1: Reflow soldering profile for lead-free solder (SnAgCu)



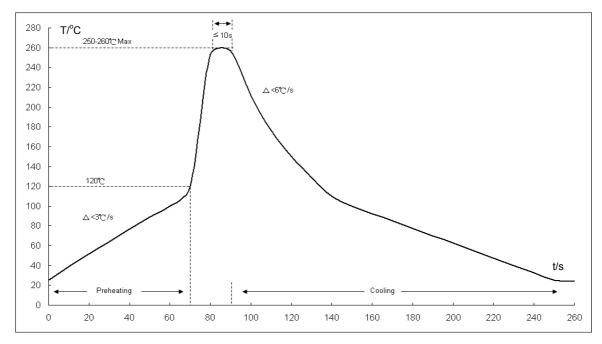
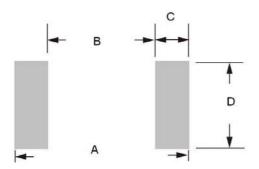


Fig2: Wave soldering profile

- \*1. The recommended profiles are referring to IPC/JEDEC J-STD-020D & IEC-60068-2-58
- \*2. Chip diodes 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

# ■ Recommended Soldering Footprint:



■ Reflow/Wave Soldering						
Dimension/ mm						
Product Size	Α	В	С	D		
0805	2.6-3.4	1.2	0.7-1.1	1.2-1.4		

# **CDZ55C-SM Series**



Crownpo Technology

■ Storage Condition: Product termination solderability can degrade due to high temperature and humidity or chemical environment. Storage condition must be in an ambient temperature of <40°C and ambient humidity of <80%RH, and free from chemical.

## **ENVIRONMENTAL CHARACTERISTICS**

Product	Hazardous Substance or Element/ppm					
	Pb	Cd	Hg	Cr <sup>6+</sup>	PBB	PBDE
	<1000	<100	<1000	<1000	<1000	<1000
	Halogen Substance/ ppm					
Product	F	Cl	E	Br	I	Total
	<900	<900	) <9	000	<900	<1500

#### **PACKING METHOD**

Product	Quality/Reel	Reel Size	Tape
	5,000pcs	7"	Paper

## **DISCLAIMERS**

These products are not designed for use in applications where any failure or malfunction may resulted in personal injury, death or severe property or environmental damage such as medical, military, aircraft, space or life support equipments.