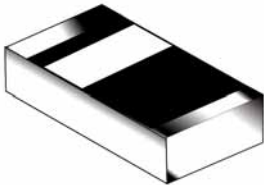


Switching Diode

CD4148WP



FEATURES

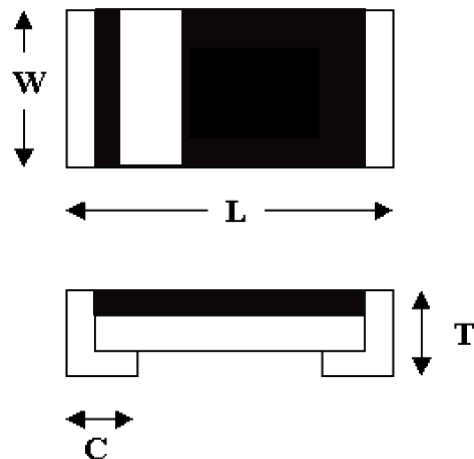
- Silicon epitaxial planar diode
- SMD chip pattern, available in various dimension included 0805 & 0603
- Leadfree and RoHS compliance components

MECHANICAL CHARACTERISTICS

- Size: 1206
- Weight: approx. 10mg
- Marking: Cathode terminal

DIMENSIONS

Dimension/mm	1206
L	3.2±0.2
W	1.5±0.2
T	0.85±0.1
C	0.55±0.2



THERMAL CHARACTERISTICS

Parameter at T _{amb} =25°C	Symbol	Unit	Value
Junction Temperature	T _j	°C	175
Thermal Resistance Junction to Ambient air	R _{θJA}	°C/W	375 ¹⁾
Storage Temperature range	T _{stg}	°C	-65 to 175

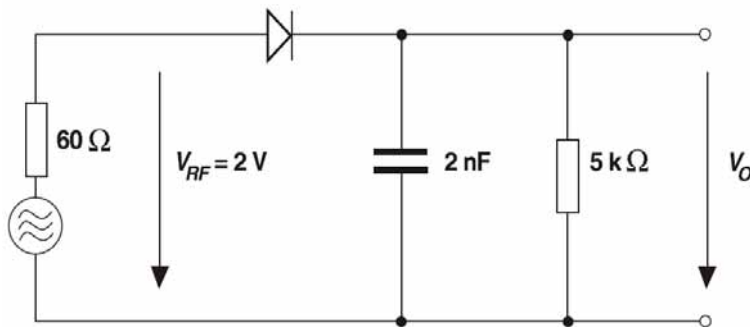
1) Valid provided that electrodes are kept at ambient temperature.

ELECTRICAL CHARACTERISTICS

Parameter at $T_{amb}=25^{\circ}C$	Symbol	Unit	Value
Reverse Voltage	V_R	V	75
Peak Reverse Voltage	V_{RM}	V	100
Forward Continuous Current	I_{FM}	mA	300
Average rectified current sin half wave rectification with resistive load $f \geq 50Hz$	$I_{F(AV)}$	mA	150 ¹⁾
Surge Forward Current at $t < 1s$ and $T_j = 25^{\circ}C$	I_{FSM}	mA	500
Power Dissipation	P_{tot}	mW	400 ¹⁾
Forward Voltage at $I_F = 10mA$	V_F	V	1.0 MAX
Leakage Current at $V_R = 20V$ at $V_R = 75V$ at $V_R = 20V, T_j = 150^{\circ}C$	I_R	nA	25 MAX
	I_R	μA	5 MAX
	I_R	μA	50 MAX
Capacitance at $V_F = V_R = 0V$	C_{tot}	pF	4 MAX
Voltage rise when switching ON, tested with 50mA pulses, $t_p = 0.1\mu s$, rise time $< 30ns$, $f_p = (5-100)kHz$	V_{fr}	V	2.5 MAX
Reverse Recovery Time at $I_F = 10mA$ to $I_R = 1mA$, $V_R = 6V, R_L = 100\Omega$	t_{rr}	ns	4 MAX
Rectification efficiency at $f = 100MHz, V_{RF} = 2V$	η_r	%	45 MIN

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

Rectification Efficiency Measurement Circuit



ENVIRONMENTAL CHARACTERISTICS

Product	Hazardous Substance or Element/ppm					
	Pb	Cd	Hg	Cr ⁶⁺	PBB	PBDE
CD4148WP	<1000	<100	<1000	<1000	<1000	<1000

TEST CHARACTERISTICS

Test Item	Test Condition	Requirement
Solderability	Sn bath at 250±5°C for 2±0.5s	>95% area tin covered
Resistance to Soldering Heat	Sn bath at 260±5°C for 10±2s	V _F , V _Z & I _R within spec; no mechanical damage
Humidity Steady State	At 85°C 85%RH for 1000hrs	V _F , V _Z & I _R within spec
Continue Forward Operating Life	At 25°C I _F = I _o ± 10% 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 1cycle	V _F , V _Z & I _R within spec; no mechanical damage

PACKING METHOD

Product	Quality/Reel	Reel Size	Tape
CD4148WP	5,000pcs	7"	Paper

APPLICATIONS

- Function: Fast Switching
- Soldering Condition:

Recommended Profile Condition	Sn-Pb Soldering	Leadfree 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	150-200 °C 60-180s	100-150 °C 60-120s
Soldering Temperature & Time	183 °C 60-150s	217 °C 60-150s	260±5°C 5±2°C
Peak Temperature	230±5°C	245±5°C	260±5°C
Time within 5°C of peak temperature	10-30s	20-40s	-
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			

- 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.