

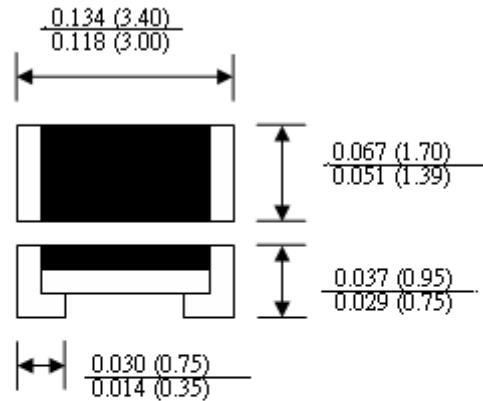
■ **Features:**

- This diode is also available in other case styles including the 0805 case with the type designation CD4148WSP, and the 0805 case with the type designation CD4151WSP.
- Silicon Epitomal Planer Diodes
- Fast switching diode.

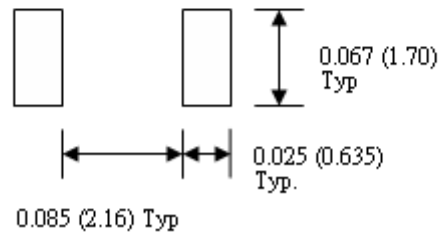
■ **Mechanical Data.**

- Case: 1206 (CD4148WP)
- Weight: approx. 0.01 g
- Marking: Cathode arrow
- Suffix “P” denotes Lead-Free.

**Shape and Dimension  
 Inch (mm)**



**Recomenden Land Patten**



**Absolute Maximum Rating & Thermal Characteristics**  $T_{amb} = 25^{\circ}C$ , unless otherwise specified.

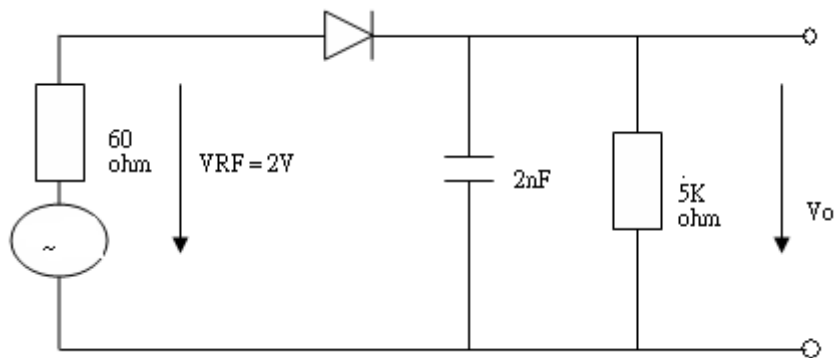
Parameter	Symbol	Value	Unit
Reverse Voltage	$V_R$	75	V
Peak reverse voltage	$V_{RM}$	100	V
Average rectified current sin half rectified with resistive load $f \geq 50Hz$	$I_F (AV)$	150 <sup>1</sup>	mA
Surge forward current $t < 1 s$ and $T_j = 25^{\circ}C$	$I_{FSM}$	500	mA
Power dissipation	$P_{tot}$	400 <sup>1</sup>	mW
Typical Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	450 <sup>1</sup>	K/W
Junction temperature	$T_j$	150	$^{\circ}C$
Storage temperature	$T_s$	-65 to +175	$^{\circ}C$

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

**Electrical Characteristics** Tamb = 25°C, unless otherwise specified.

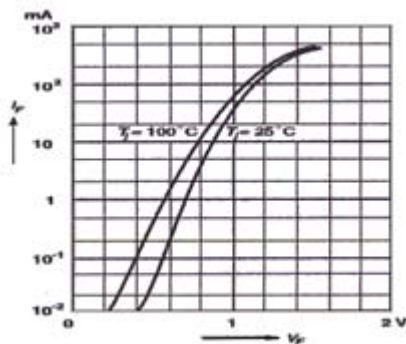
Parameter	Symbol	Min	Max	Unit
Forward voltage	IF = 10mA.	VF		1.0 V
Leakage current	VR = 20V	IR		25 nA
	VR=75V			5.0 uA
	VR=20V , Tj = 150°C			50 μA
Capacitance	VF=VR=0V	Ctot		4 pF
Voltage rise when switching ON	Tested with 50mA pulses	Vfr		2.5 V
	Tp = 0.1μS, rise time <30ns			
	Fp=(5 to 100) KHz			
Reverse recovery time	IF=10mA to IR = 1mA	Trr		4 ns
	VR=6V, RL = 100Ω			2 ns
Rectification efficiency	F=100MHz, VRF=2V	-	0.45	-

**Rectification Efficiency Measurement circuit**

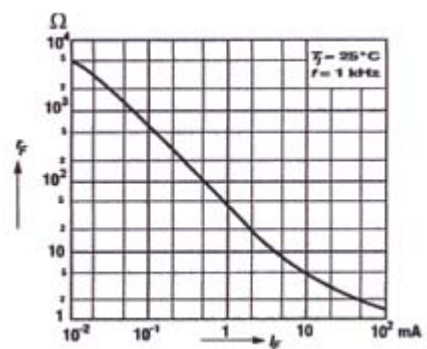


**Typical Characteristics** (Tamb = 25°C, unless otherwise specified).

**Figure 1. Forward Characteristics**

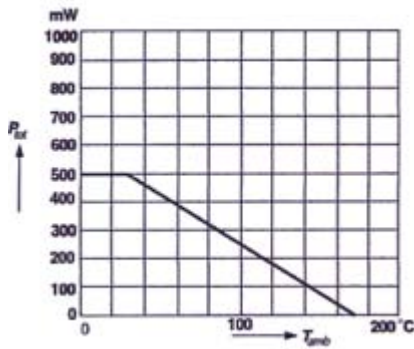


**Figure 2. Dynamic Forward Resistance vs. Forward Current**

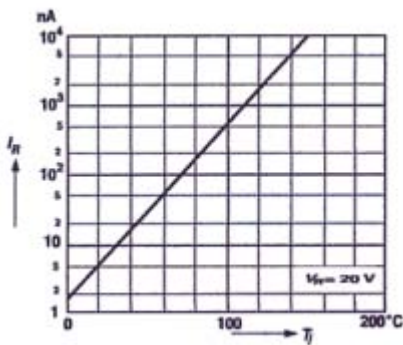


**Figure 3. Admissible Power Dissipation**

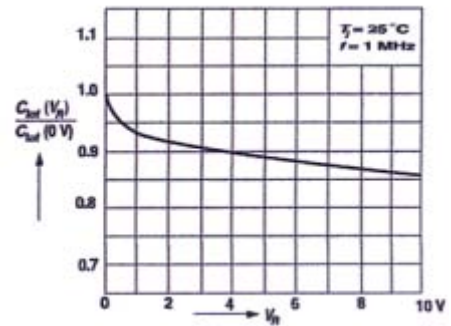
VS: Ambient Temperature.



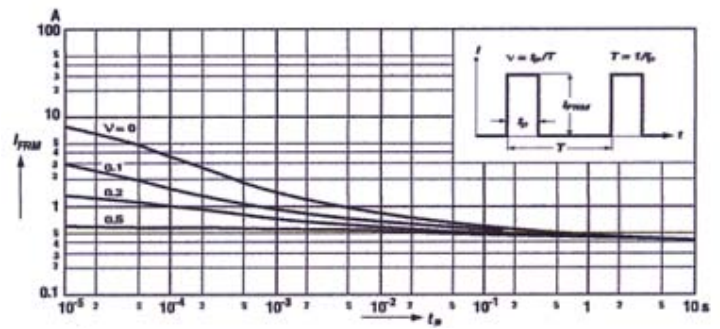
**Figure 5. Leakage current vs. Junction Temperature.**



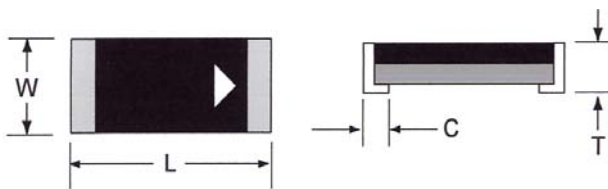
**Figure 4. Relative Capacitance vs: Reverse voltage**



**Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration**



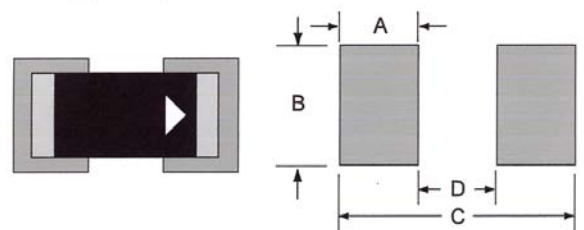
**Outline Dimension**



Unit: mm(inch)

Item	0603	0805	1206	SOD123
L	1.55±0.10 (0.062±0.004)	2.00±0.20 (0.080±0.008)	3.20±0.20 (0.127±0.008)	3.50±0.10 (0.140±0.002)
W	0.80±0.10 (0.032±0.004)	1.25±0.20 (0.062±0.004)	1.50±0.20 (0.059±0.008)	1.50±0.10 (0.059±0.004)
T	0.65±0.10 (0.026±0.004)	0.85±0.10 (0.034±0.004)	0.85±0.10 (0.034±0.004)	0.92±0.10 (0.036±0.004)
C	0.35±0.10 (0.014±0.004)	0.45±0.20 (0.018±0.008)	0.55±0.20 (0.022±0.008)	0.35±0.10 (0.0137±0.004)

Mounting pad layout:

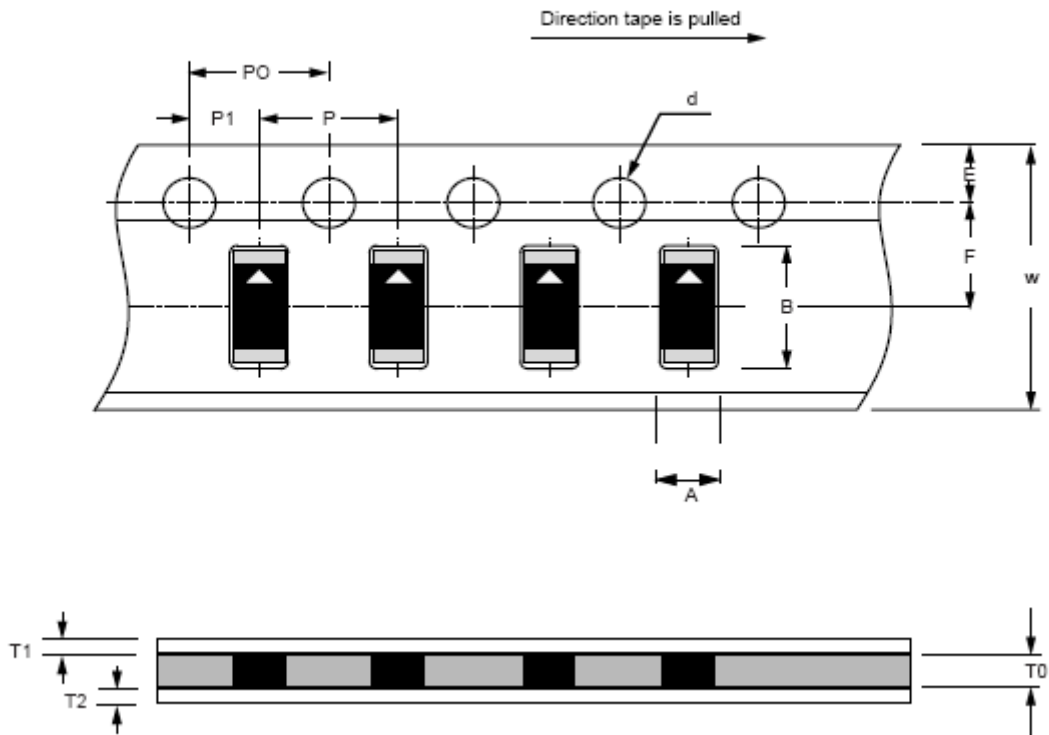


Unit: mm

Layout Size	A	B	C	D	Remark
0805	1.2	1.2	0.9	3.3	Design Suggestion 0805
Micro Melf	0.9	1.4	1.0	2.8	
SOD-323	1.35	0.65	1.05	3.75	
1206	1.2	1.7	1.7	4.1	Design Suggestion Mini Melf
Mini Melf	1.35	1.7	2.1	4.8	
SOD-123	1.2	0.7	2.5	4.9	

**Package Type:**

Item	Symbol	Specifications (mm)	Specifications (inch)
Carrier width	A	2.0±0.10	0.080±0.004
Carrier length	B	3.60±0.10	0.144±0.004
Sprocket hole	d	1.50±0.05	0.060±0.002
Sprocket hole position	E	1.75±0.1	0.070±0.004
Punch hole position	F	3.5±0.05	0.140±0.002
Punch hole pitch	P	4.0±0.10	0.157±0.004
Sprocket hole pitch	P0	4.0±0.10	0.157±0.004
Embossment center	P1	2.0±0.05	0.079±0.002
Base tape width	W	8.0±0.20	0.315±0.008
Top/Bottom seat tape width	W1	5.25±0.05	0.210±0.002
Base tape thickness	T0	0.95±0.02	0.038±0.0008
Top seat taper thickness	T1	0.054±0.005	0.002±0.0002
Bottom seat tape thickness	T2	0.042±0.005	0.0016±0.0002

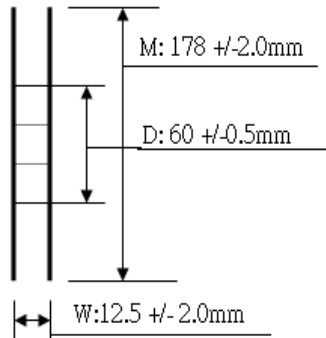
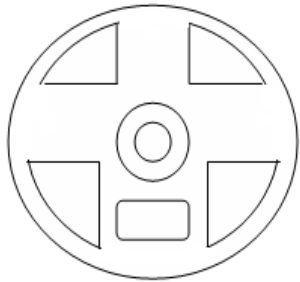


**Packing Name: Chip Switching Diode Type Size:**

Packing Size:	CD4148WTP (0603)	CD4148WSP (0805)	CD4148WP (1206)	CD4448WSP (0805)	CD4448WP (1206)	HSD4148 (SOD-123)	HSD4448 (SOD-123)
Packing Reel:	7" (180mm) Reel, 4mm Pitch Paper Tape						
Quantity:	5Kpcs	5Kpcs	5Kpcs	5Kpcs	5Kpcs	4Kpcs	4Kpcs
Box / Carton	50K / 300K	50K / 300K	50K / 300K	50K / 300K	50K / 300K	40K / 240K	40K / 240K
N/G Weight							
Carton Size:	L: 410 X W: 390 X H: 200 (mm) 6 Box (300K)					L: 410 X W: 390 X H: 200 (mm) 6 Box (240K)	

**Reel Dimension (mm)**

Type Size for : 0603/0805/1206



Carton Size: 410x390x200mm

Quantity: 300K/Ctn. 50K/Box for 0603/0805/1206

240K/Ctn, 50K/Box for SOD-123

Information: (參考資料)

◆	VF	Max. Instantaneous Voltage	
◆	IF	Max. Instantaneous Current	
◆	IR	Forward current	
◆	VR	Forward voltage	
◆	VZ	Zener Diode working voltage	
◆	IZT	Zener Diode working voltage test current	
◆	ZZK		
◆	IZK		
◆	ZZT		
◆	PD	Max. Steady Power Dissipation	
◆	Tj	Max. Operation Temperature Range	
◆	Tstg	Storage Temperature	
◆	VRM	Non-repetitive Peak Reverse Voltage	
◆	VRRM	Non-repetitive Reverse Voltage	
◆	IFM	Forward Continuous Current	
◆	IO	Average Rectified Output Current	
◆	IFSM	Non-Repetitive Peak Forward Surge Current	
◆	Pd	Max. steady Power Dissipation	
◆	RθJA	Thermal Resistance Junction Ambient	
◆	Ti, TSTG	Operating Junction and storage temperature range	
◆	VFM	Max. Forward voltage	
◆	IRM	Max. Reverse current	
◆	Cj	Junction capacitance	
◆	Trr	Reverse Recovery Time	

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