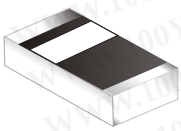
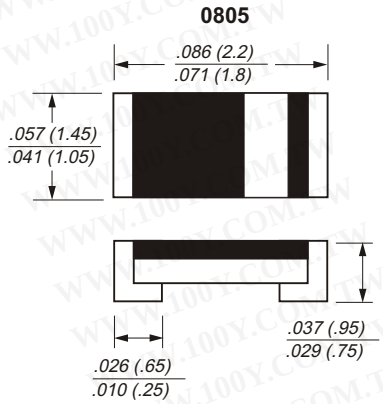


Small-Signal Chip Diode



Dimensions in inches and (millimeters)

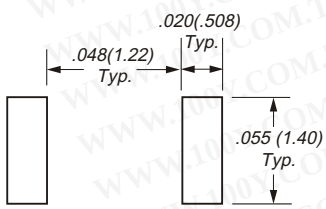
Features

- This diode is also available in other case styles including the 1206 case with the type designation CD4148WP, the 0603 case with the type designation CD4148WTP
- Silicon Epitaxial Planar Diode
- Fast switching diode.

Mechanical Data

Case:0805
Weight : approx. 6 mg
Marking : Cathode band

Mounting Pad Layout



Absolute Maximum Ratings & Thermal Characteristics T_{amb} = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Reverse voltage	V_R	75	V
Peak reverse voltage	V_{RM}	100	V
Forward continuous current	I_{FM}	300	mA
Average rectified current sin half wave rectification with resistive load f>=50 Hz	$I_{F(AV)}$	150[1)]	mA
Surge forward current t < 1 s and T_j = 25 °C	I_{FSM}	500	mA
Power dissipation	P_{tot}	400[1)]	mW
Typical Thermal Resistance Junction to Ambiant Air	$R_{\theta JA}$	375[1)]	K/W
Junction temperature	T_j	175	°C
Storage temperature	T_S	- 65 to + 175	°C

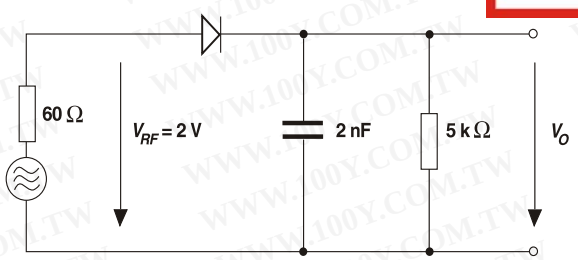
1) Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter		Symbol	Min	Max	Unit
Forward voltage	I_F = 10 mA	V_F		1.0	V
Leakage current	V_R = 20 V	I_R		25	nA
	V_R = 75 V			5.0	uA
	V_R = 20 V, T_J = 150 °C			50	uA
Capacitance	V_F = V_R = 0 V	C_{tot}		4	pF
Voltage rise when switching ON	tested with 50 mA pulses, t_p = 0.1 us, rise time < 30 ns, f_p = (5 to 100) kHz	V_{fr}		2.5	V
Reverse recovery time	I_F = 10 mA to I_R = 1mA, V_R = 6 V, R_L = 100 Ω	t_{rr}		4	ns
Rectification efficiency	f = 100 MHz, V_{RF} = 2 V	η_r	45		%

Rectification Efficiency Measurement Circuit



Typical Characteristics

(T_{amb} = 25 °C unless otherwise specified)

Figure 1. Forward Characteristics

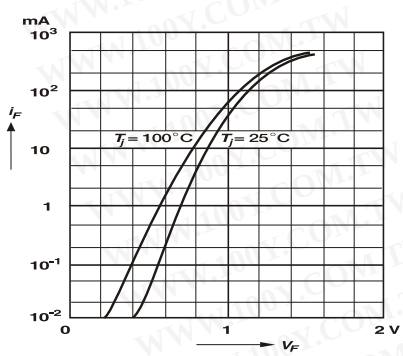


Figure 2. Dynamic Forward Resistance vs. Forward Current

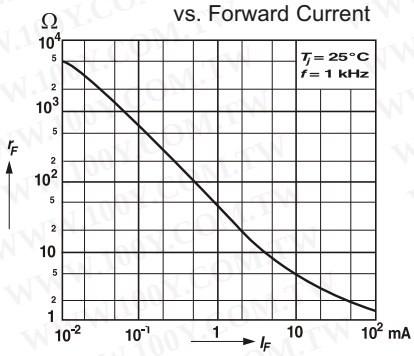


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

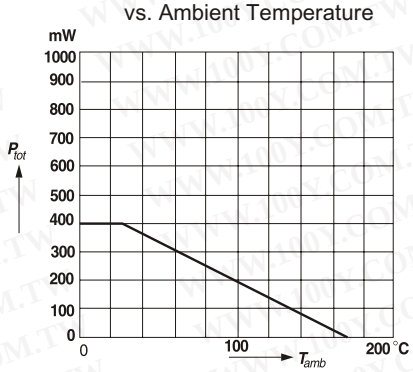


Figure 4. Relative Capacitance vs. Reverse Voltage

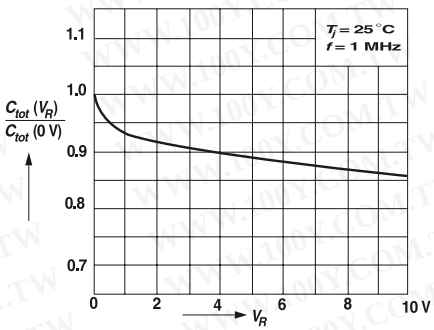


Figure 5. Leakage Current vs. Junction Temperature

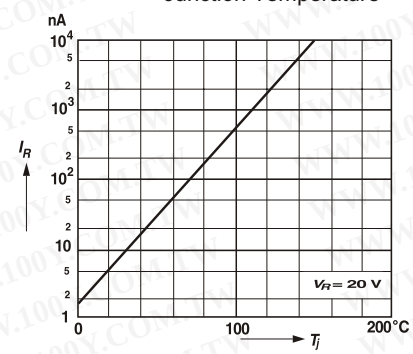
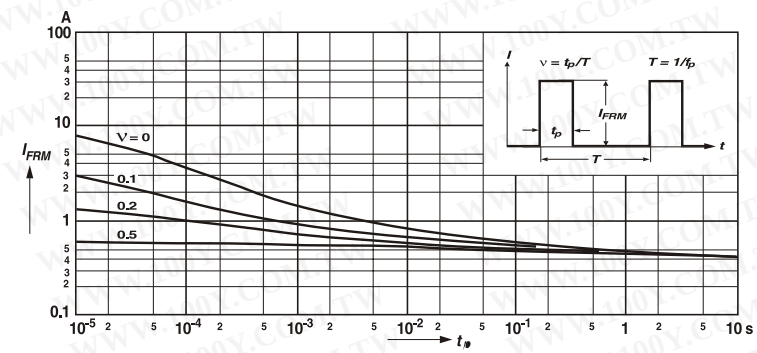


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration



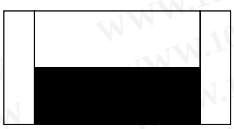
Device outlook

Shanghai plant (front side)

Kunshan plant (front side)

Shanghai plant (back side)

Kunshan plant (back side)



Suggested thermal profiles for soldering processes

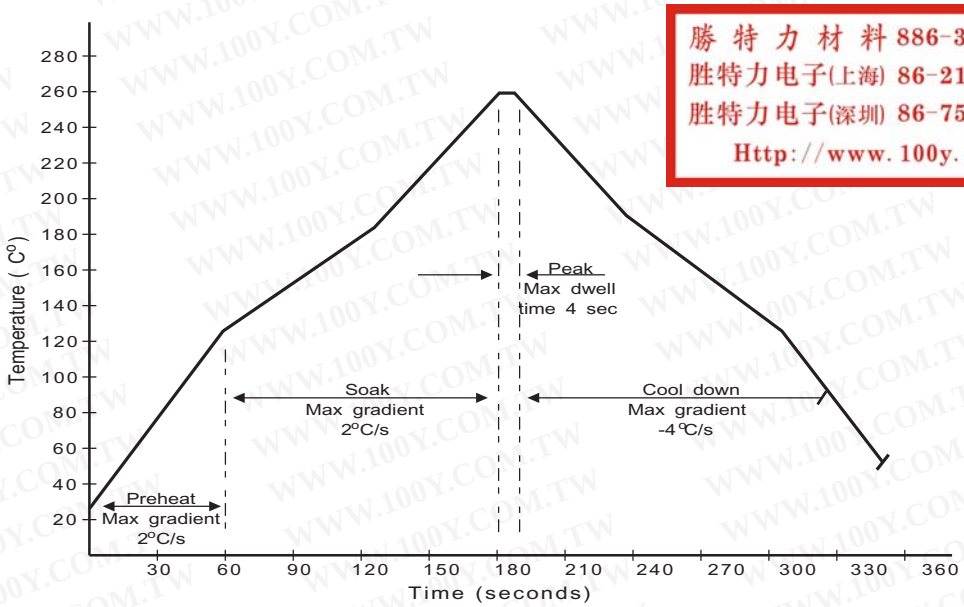


Fig.1 Typical Wave Soldering Thermal Profile

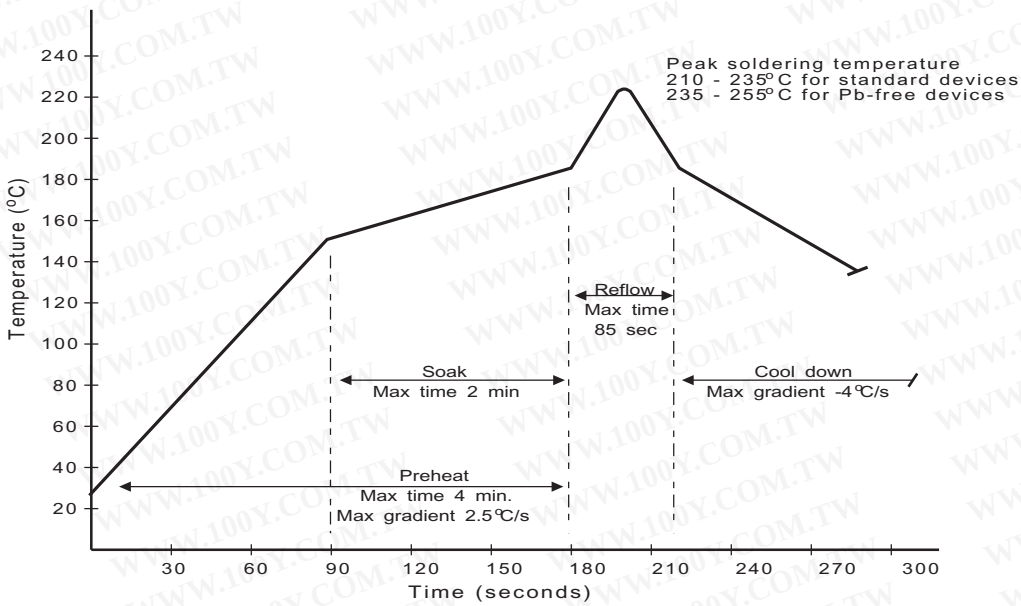


Fig.2 Typical IR Reflow Soldering Thermal Profile