

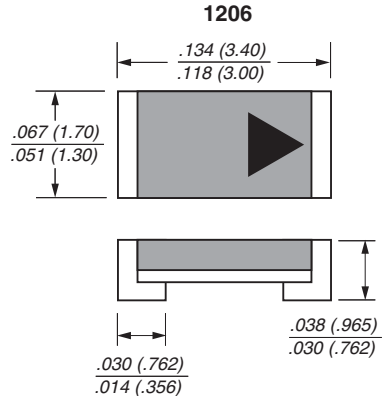


## Small-Signal Diode

### Features

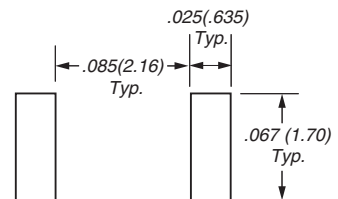
- This diode is also available in other case styles including the 0805 case with the type designation CD4148WSP, and the 0603 case with the type designation CD4148WTP
- Silicon Epitaxial Planar Diode
- Fast switching diode.

### Mechanical Data

**Case:** 1206**Weight:** approx. 10 mg**Marking:** Cathode arrow

Dimensions in inches and (millimeters)

### Mounting Pad Layout



### Absolute Maximum Ratings & Thermal Characteristics $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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 wave rectification with resistive load $f \geq 50\text{ Hz}$	$I_{F(AV)}$	150 <sup>1)</sup>	mA
Surge forward current $t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$	$I_{FSM}$	500	mA
Power dissipation	$P_{tot}$	400 <sup>1)</sup>	mW
Thermal resistance junction to ambient air	$R_{\theta JA}$	450 <sup>1)</sup>	$^{\circ}\text{C/W}$
Junction temperature	$T_j$	150	$^{\circ}\text{C}$
Storage temperature	$T_S$	- 65 to + 150	$^{\circ}\text{C}$

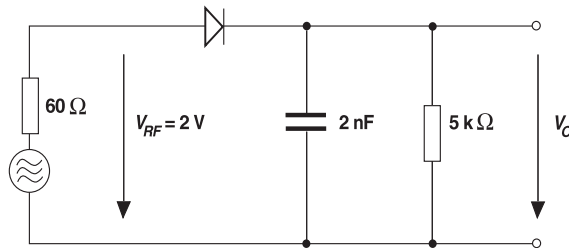
1) Valid provided that electrodes are kept at ambient temperature.



**Electrical Characteristics**  $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter		Symbol	Min	Max	Unit
Forward voltage	$I_F = 10\text{ mA}$	$V_F$		1.0	V
Leakage current	$V_R = 20\text{ V}$	$I_R$		25	nA
	$V_R = 75\text{ V}$		5.0	$\mu\text{A}$	
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$		50	$\mu\text{A}$	
Capacitance	$V_F = V_R = 0\text{ V}$	$C_{tot}$		4	pF
Voltage rise when switching ON	tested with 50 mA pulses, $t_p = 0.1\text{ }\mu\text{s}$ , rise time < 30 ns, $f_p = (5\text{ to }100)\text{ kHz}$	$V_{fr}$		2.5	ns
Reverse recovery time	$I_F = 10\text{ mA}$ to $I_R = 1\text{ mA}$ , $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	$t_{rr}$		4	ns
Rectification efficiency	$f = 100\text{ MHz}, V_{RF} = 2\text{ V}$		0.45		

**Rectification Efficiency Measurement Circuit**



**Typical Characteristics** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified)

Figure 1. Forward Characteristics

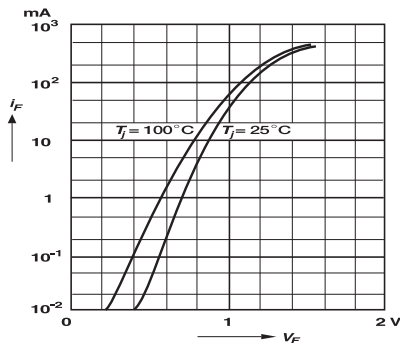


Figure 2. Dynamic Forward Resistance vs. Forward Current

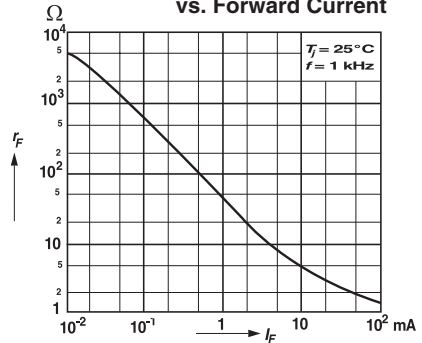




Figure 3. Admissible Power Dissipation vs. Ambient Temperature

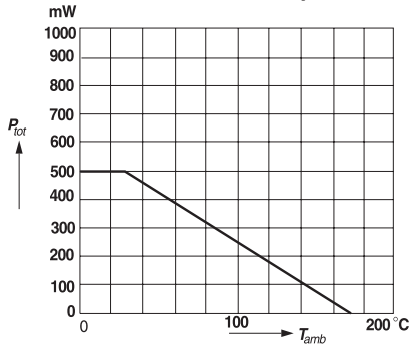


Figure 4. Relative Capacitance vs. Reverse Voltage

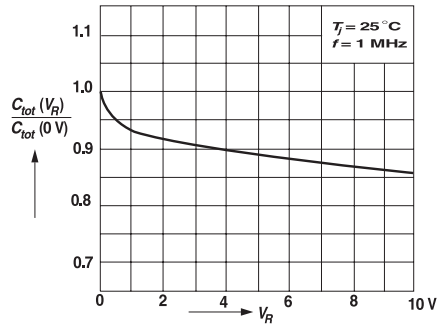


Figure 5. Leakage Current vs. Junction Temperature

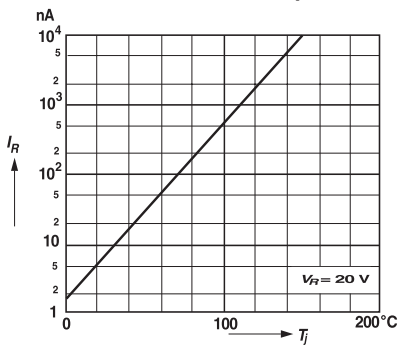


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

