Small-Signal Chip Diode

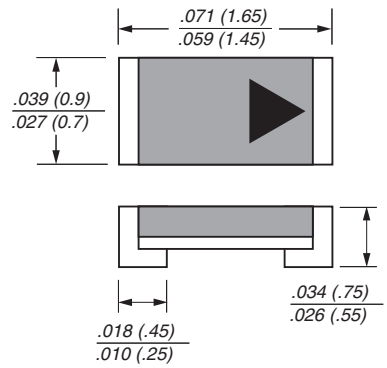
Features

- This diode is also available in other case styles including the 1206 case with the type designation CD4148W, the 0805 case with the type designation CD4148WS
- Silicon Epitaxial Planar Diode
- Fast switching diode.

Mechanical Data

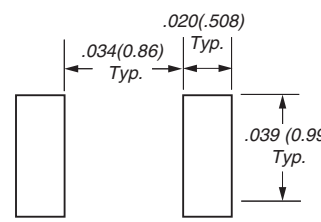
Case: 0603
Weight: approx. 4 mg
Marking: Cathode arrow

0603



Dimensions in inches and (millimeters)

Mounting Pad Layout



Absolute Maximum Ratings & Thermal Characteristics

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

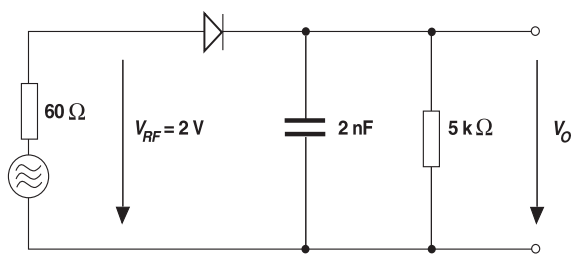
Parameter	Symbol	Value	Unit
Reverse voltage	V_R	75	V
Peak reverse voltage	V_{RM}	100	V
Average rectified current half wave rectification with resistive load f ≥ 50 Hz	$I_{F(AV)}$	150[1)]	mA
Surge current t < 1 s and T_j = 25 °C	I_{FSM}	350	mA
Power dissipation	P_{tot}	200[1)]	mW
Thermal resistance junction to ambient air	$R_{\theta JA}$	650[1)]	°C/W
Junction temperature	T_j	150	°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	μA
	V_R = 20 V, T_J = 150 °C			50	μA
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 μs, rise time < 30 ns, f_p = (5 to 100) kHz	V_{fr}		2.5	ns
Reverse recovery time	I_F = 10 mA to I_R = 1 mA, V_R = 6 V, R_L = 100 Ω	t_{rr}		4	ns
Rectification efficiency	f = 100 MHz, V_{RF} = 2 V		0.45		

Rectification Efficiency Measurement Circuit



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

Figure 1. Forward Characteristics

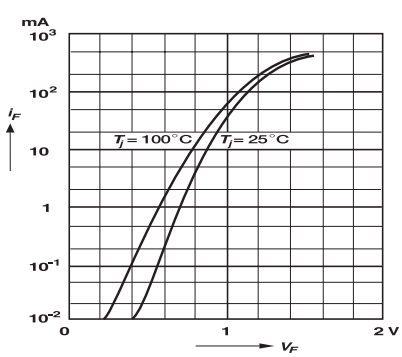


Figure 2. Dynamic Forward Resistance vs. Forward Current

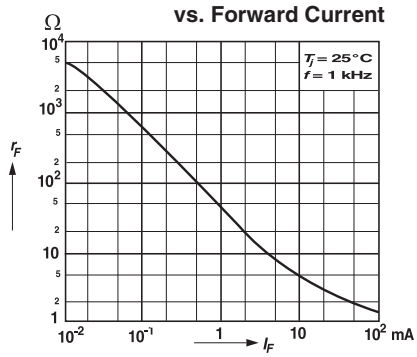


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

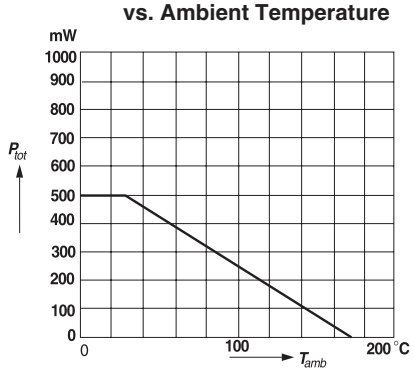


Figure 4. Relative Capacitance vs. Reverse Voltage

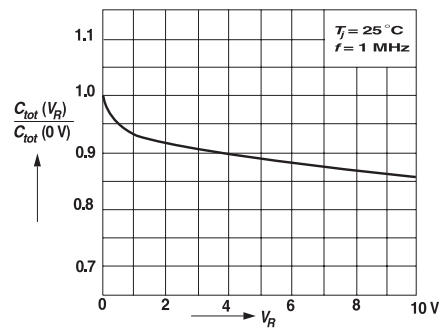


Figure 5. Leakage Current vs. Junction Temperature

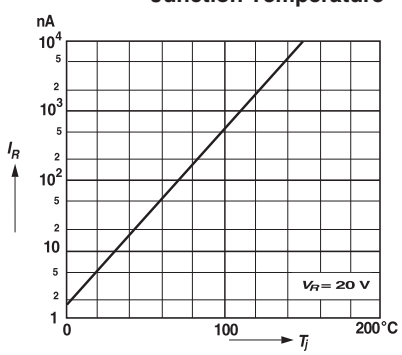


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration