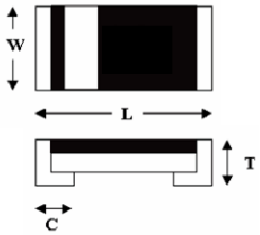
Switching Diode

CD4148WSP

FEATURES

- Silicon epitaxial planar diode
- SMD chip pattern, available in various dimension included 1206 & 0603
- Leadfree and RoHS compliance components
- For small signal switching and operating ambient temperature less than 55oC and voltage withstand less than 60V; not suitable for AC switching input as rectified circuit and high reverse voltage location



MECHANICAL CHARACTERISTICS

- Size: 0805
- Weight: approx. 6mg
- Marking: Cathode terminal

0805	
L	2.0±0.2 mm
W	1.25±0.2 mm
T	0.85±0.1 mm
C	0.45±0.2 mm

THERMAL CHARACTERISTICS[1)]

Parameter at T_{amb}=25°C[1)]	Symbol	Value	Unit
Forward Power Dissipation	P_{tot}	200	mW
Power derating above 25°C		1.6	mW/°C
Junction Temperature	T_j	150	°C
Thermal Resistance Junction to Ambient air	$R_{\theta JA}$	375	°C/W
Operating& Storage Temperature range	T_{stg}	-55 to 150	°C

MAXIMUM RATING[1)]

Parameter at T_{amb}=25°C[1)]	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	75	V
Average rectified current sin half wave rectification with resistive load	$I_{F(AV)}$	150	mA
Repetitive Peak Forward Current at T_{amb}=25°C	I_{FRM}	300	mA
Non-Repetitive Surge Forward Current at t<1s and T_j=25°C	I_{FSM}	500	mA
at t≦3.3ms and T_j=25°C		1000	mA

ELECTRICAL CHARACTERISTICS[1)]

Parameter at T_{amb}=25°C[1)]	Symbol	Value	Unit
Forward Voltage at I_F=10mA	V_F	1.0 MAX	V
at I_F=100mA		1.25 MAX	V
Leakage Current at V_R=20V Leakage	I_R	0.025 MAX	uA
Current at V_R=75V		5 MAX	uA
Capacitance at V_R=0V, f=1MHz	C_{tot}	4 MAX	pF
Reverse Recovery Time at I_F =I_R=10mA,R_L=100Ω	t_{rr}	4 MAX	ns

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

CD4148WSP Typical Characteristics

Figure 1. Forward Characteristic

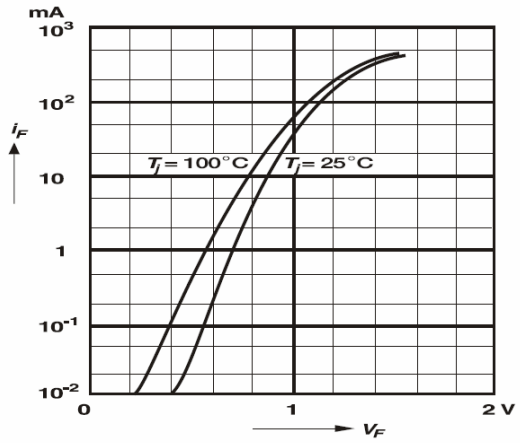


Figure 2. Power De-rating

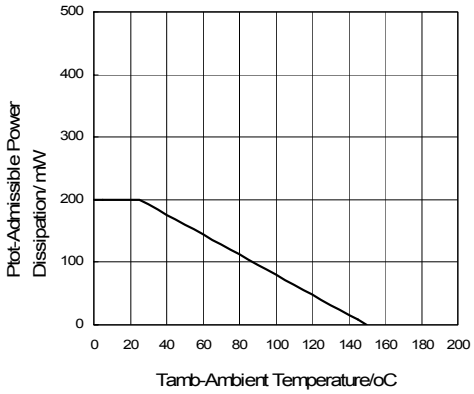


Figure 3. Forward Current De-rating

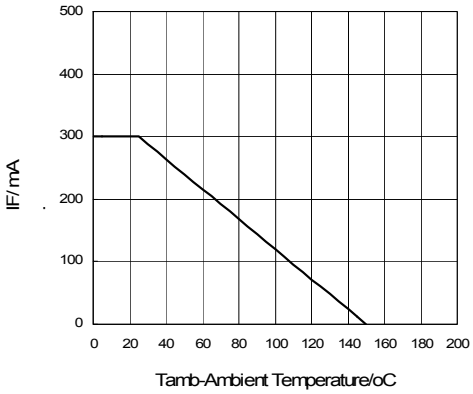


Figure 4. Reverse Voltage De-rating