

# MCL4148

## 500mW 100 Volt Silicon Epitaxial Diode

### Features

- Silicon epitaxial planar diode
- Fast Switching Speed
- This diode is also available in the DO-35 case with the type designation 1N4148, in the Mini-MELF case with the type designation DL4148

### Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance; 350°C/W Junction To Ambient

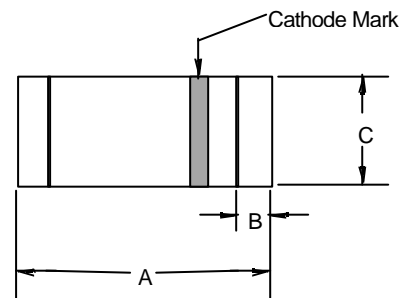
### Electrical Characteristics @ 25°C Unless Otherwise Specified

Reverse Voltage	$V_R$	75V	
Peak Reverse Voltage	$V_{RM}$	100V	
Maximum Average Rectified Current	$I_o$	200mA	Resistive Load $f > 50\text{Hz}$
Power Dissipation	$P_{TOT}$	500mW <sup>1)</sup>	$T_A=25^\circ\text{C}$
Junction Temperature	$T_J$	150°C	
Surge Forward Current	$I_{FSM}$	2A	$t=1\mu\text{s}, T_J=25^\circ\text{C}$
Maximum Forward Voltage	$V_F$	1.0V	$I_{FM} = 50\text{mA};$ $T_J = 25^\circ\text{C}^*$
Maximum DC Reverse Current At Rated DC Blocking Voltage	$I_R$	25nA 5.0uA 50uA	$V_R=20\text{V}$ $T_J=25^\circ\text{C} V_R=75\text{V},$ $T_J=150^\circ\text{C} V_R=20\text{V}$
Typical Junction Capacitance	$C_J$	4.0pF	Measured at $V_R=V_F=0\text{V}$
Reverse Recovery Time	$T_{rr}$	4.0nS	$I_F=10\text{mA},$ $V_R = 6.0\text{V}$ $R_L=100\text{OHMS}$

\*Pulse test: Pulse width 300 usec, Duty cycle 2%

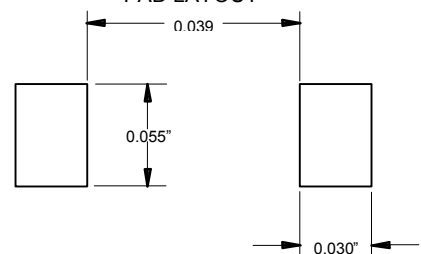
1) Valid provided that leads at a distance of 8mm from case are kept at ambient temperature(DO-35)

### MICROMELF



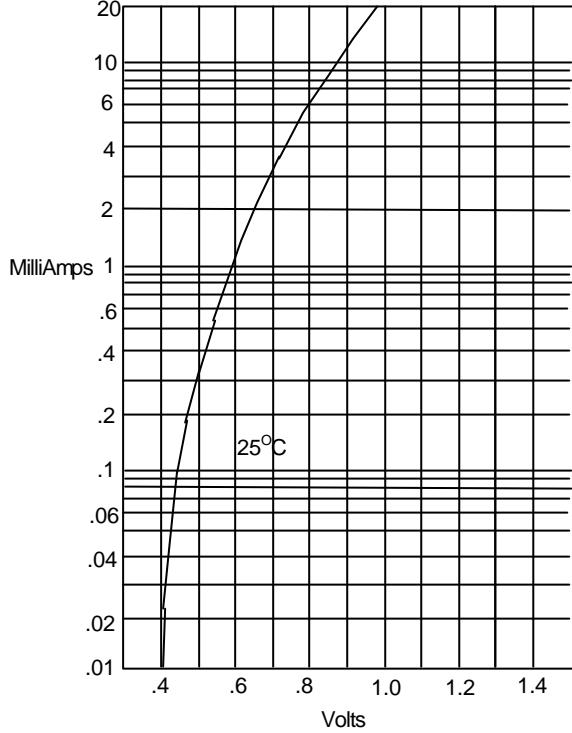
DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.071	.079	1.8	2.0	
B	.004	.008	.10	.20	
C	.047	.051	1.20	1.30	∅

### SUGGESTED SOLDER PAD LAYOUT



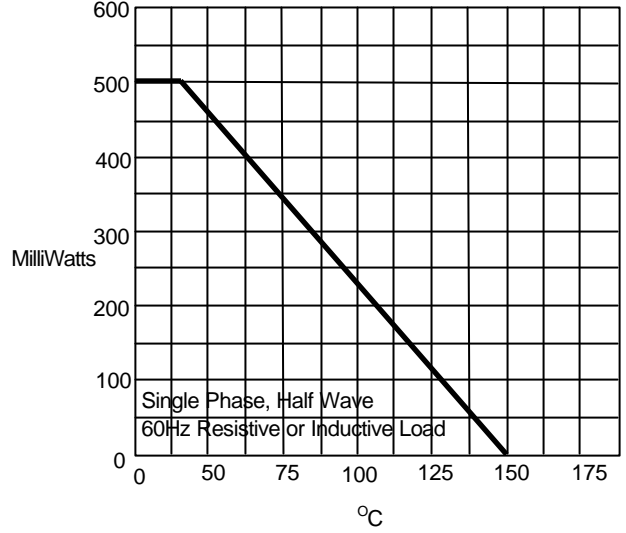
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Figure 1  
Typical Forward Characteristics



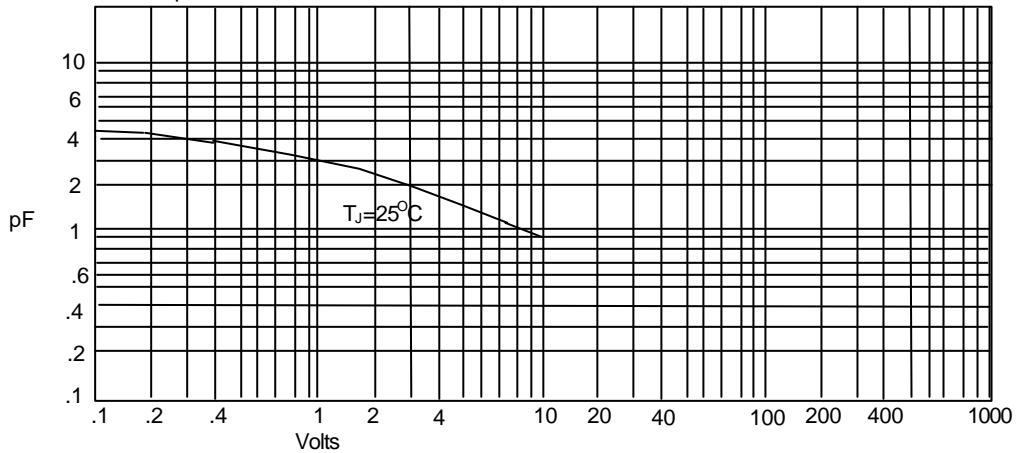
Instantaneous Forward Current - Amperes versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



Admissible Power Dissipation - MilliWatts versus  
Ambient Temperature - °C

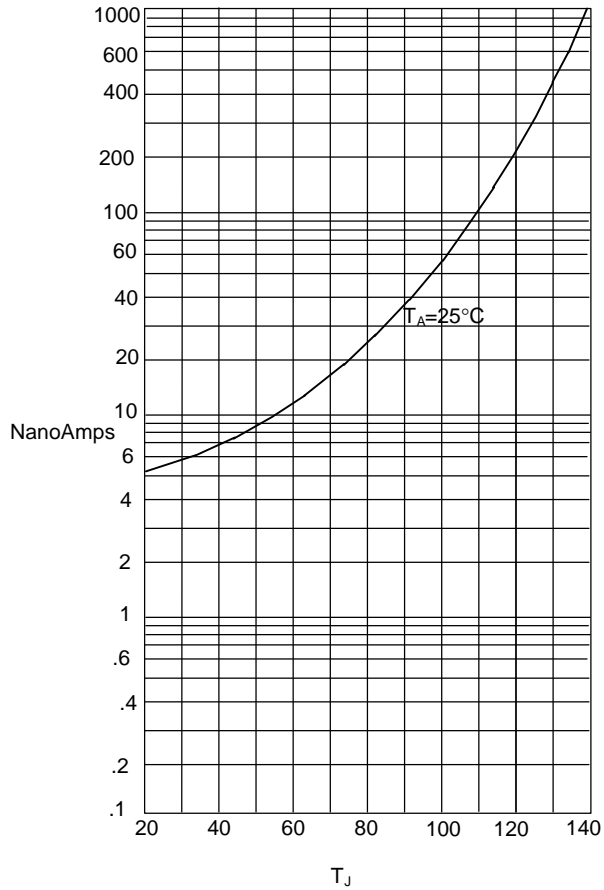
Figure 3  
Junction Capacitance



Junction Capacitance - pF versus  
Reverse Voltage - Volts

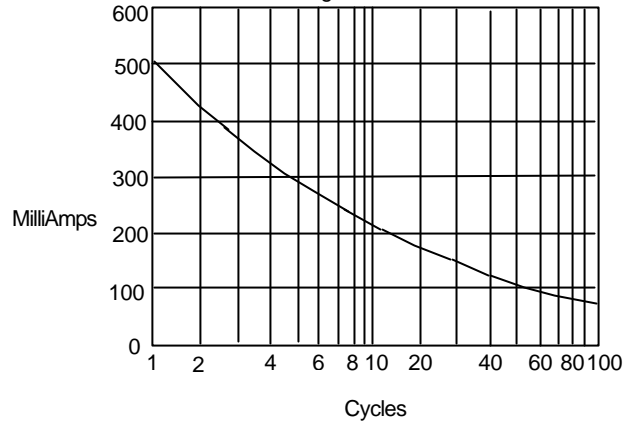
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Figure 4  
Typical Reverse Characteristics



Instantaneous Reverse Leakage Current - NanoAmpere versus Junction Temperature  $^\circ\text{C}$

Figure 5  
Peak Forward Surge Current



Peak Forward Surge Current - Amperes versus Number Of Cycles At 60Hz - Cycles