

Features

- Low Insertion Loss
- Fast Turn-on Time
- Wide Bandwidth
- RoHS* Compliant

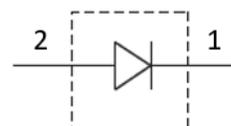
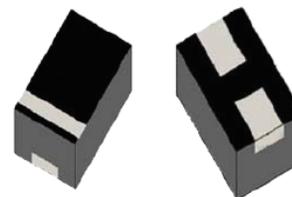
Applications

- Military, Commercial, and Industrial
- Receiver Protection

Description

The MLP71xx series limiter diodes are specially processed PIN diodes with thin intrinsic regions designed for use in passive or active limiters from 100 MHz to beyond 20 GHz. The different “I” region thicknesses and capacitances provide variable threshold and leakage power levels and power handling capability.

This rugged device is capable of reliable operation in military, commercial, and industrial applications. It is designed to be used in receiver protection applications.



0503 (Molded Plastic DFN Package)

Electrical Specifications: $T_A = +25^\circ\text{C}$

Parameter	Breakdown Voltage (V_B)	Total Capacitance (C_T)		Series Resistance (R_S)		Lifetime (T_L)	Thermal Resistance
		$V_R = 0\text{ V}, 1\text{ MHz}$	$V_R = 6\text{ V}, 1\text{ MHz}$	$I_F = 10\text{ mA}, 1\text{ GHz}$	$I_F = 1\text{ mA}, 1\text{ GHz}$		
Condition	$I_R = 10\ \mu\text{A}$					$I_F = 10\text{ mA}, I_R = 6\text{ mA}$	
Unit	V	pF		Ω		ns	$^\circ\text{C/W}$
	Typ.	Max.	Max.	Typ.	Typ.	Typ.	Max.
MLP7102	20 - 45	0.65	0.50	1.6	3.0	4.5	55
MLP7112	45 - 80	0.65	0.50	1.25	6.0	8.5	40
MLP7121	120 - 180	0.45	0.35	1.0	5.0	50	20
MLP7122	120 - 180	0.95	0.65	0.5	3.0	100	15

Unit	Peak Power In	Threshold	Leakage Output Power	Insertion Loss	CW Input Power	Recovery Time
	dBm	dBm	dBm	dB	W	ns
	Max.	Typ.	Typ.	Typ.	Max.	Typ.
MLP7102	56	10	25	0.2	4	10
MLP7112	59	15	31	0.2	5	20
MLP7121	63	20	41	0.2	10	50
MLP7122	66	20	44	0.2	15	50

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Absolute Maximum Ratings^{1,2}

Parameter	Absolute Maximum
Leakage Current	100 nA @ 80% of min. V_B
Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +175°C
Solder Temperature	+260°C per JEDEC STD-J-20C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Handling Procedures

Please observe the following precautions to avoid damage:

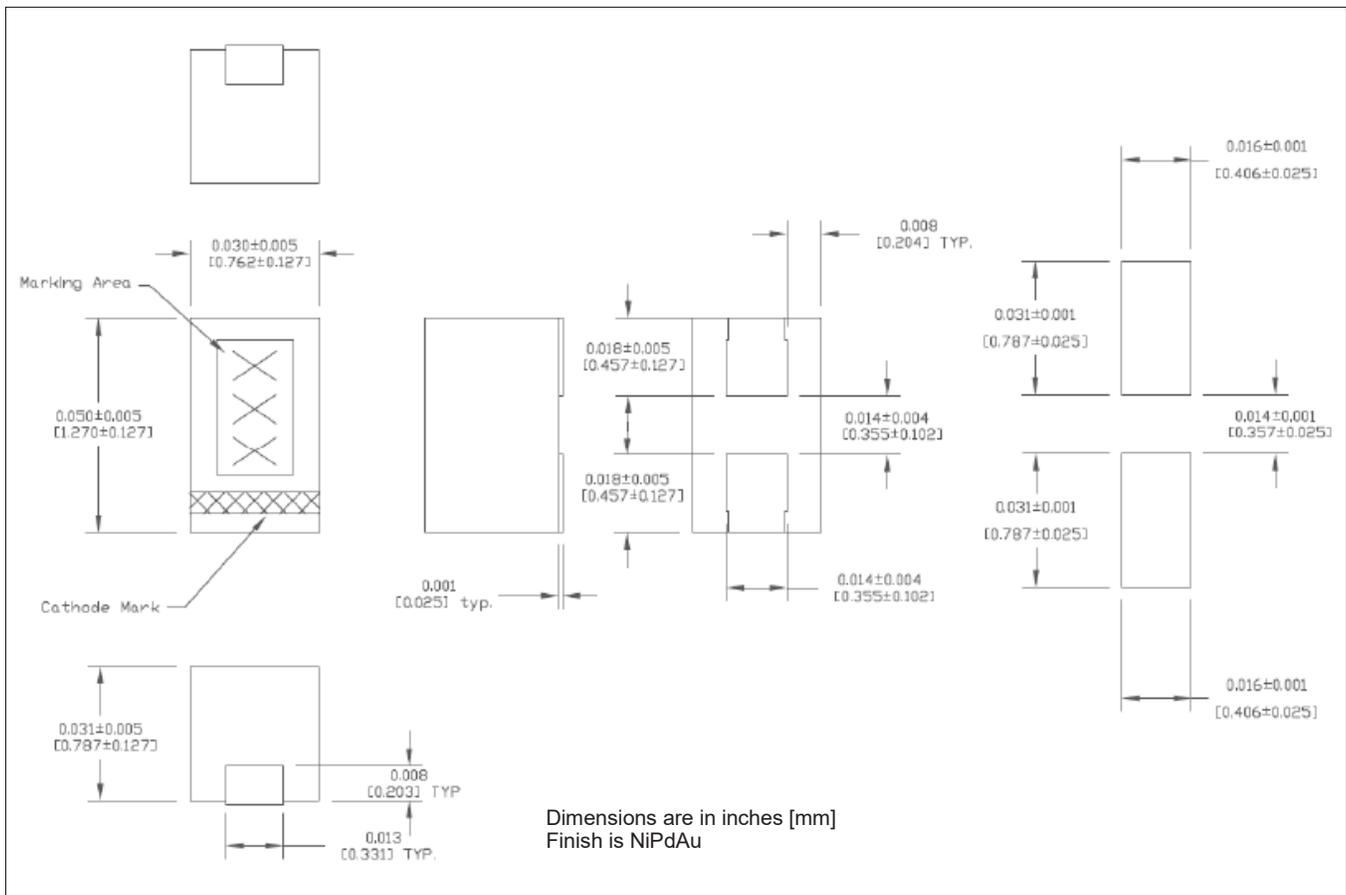
Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these HBM Class 0 devices.

Moisture Sensitivity

These electronic devices are rated MSL 1.

Package Outline (0503) & PCB Layout



MACOM Technology Solutions Inc. ("MACOM"). All rights reserved.

These materials are provided in connection with MACOM's products as a service to its customers and may be used for informational purposes only. Except as provided in its Terms and Conditions of Sale or any separate agreement, MACOM assumes no liability or responsibility whatsoever, including for (i) errors or omissions in these materials; (ii) failure to update these materials; or (iii) conflicts or incompatibilities arising from future changes to specifications and product descriptions, which MACOM may make at any time, without notice. These materials grant no license, express or implied, to any intellectual property rights.

THESE MATERIALS ARE PROVIDED "AS IS" WITH NO WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHT, ACCURACY OR COMPLETENESS, OR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.