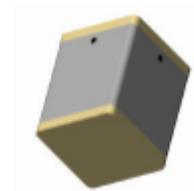


### Features

- Ceramic Surface Mount Package
- Low  $R_S < 1 \Omega$  (lower insertion loss & higher IIP3)
- Low Thermal Resistance  $< 20^\circ\text{C/W}$  for Higher Power
- Hermetically Sealed
- RoHS\* Compliant



CS127-1 & CS127-4

### Description

The MMP7000-127 MELF PIN diode series is manufactured using a proprietary diode process which optimizes the anode and cathode bonding area of the diode to the adjacent heat spreading metal posts within the ceramic package. This unique geometry provides lower electrical and thermal resistance within the surface mount package to provide higher average power performance to comparable surface mount diode packages.

With lower thermal resistance ( $< 20^\circ\text{C/W}$ ), RF C.W. incident power levels of 50 dBm and RF peak incident power levels of 60 dBm are very achievable in higher power UHF cold switching applications. The low series resistance ( $< 1 \Omega$ ), coupled with the longer minority carrier lifetime, ( $> 8 \mu\text{s}$ ), provides better IIP3 distortion values  $> 70 \text{ dBm}$ , for SP2T TX-RX switches.

These devices are hermetically sealed and are constructed with materials to meet the stringent requirements for commercial and military applications. These devices are RoHS compliant.

### Applications

These diodes are designed to be used in high average power switch and attenuator applications, operating from 1 MHz to 1 GHz at incident power levels of 100 W average power and 1 KW peak power. These devices are durable, reliable, and are capable of meeting all military, commercial, and industrial applications.

### Ordering Information

Part Number	Package
MMP70xx-127-1R	2000 piece reel
MMP70xx-127-4R	500 piece reel

\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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

Parameter	Voltage Rating ( $V_B$ )	Total Capacitance ( $C_T$ )	Minority Carrier Lifetime ( $T_L$ )	Series Resistance ( $R_S$ )	Parallel Resistance ( $R_P$ )	CW Thermal Resistance ( $\theta$ )	Forward Voltage ( $V_F$ )	Reverse Leakage Current ( $I_R$ )
Forcing Function	$ -10 \mu\text{A} $	-100 V, 1 MHz	$I_F=10 \text{ mA}$ , $I_R=6 \text{ mA}$ , 100 kHz	100 mA, 100 MHz	-100 V, 100 MHz	—	100 mA	80 % of $V_B$
Part#	V	pF	$\mu\text{s}$	$\Omega$	k $\Omega$	$^\circ\text{C/W}$	Volts	$\mu\text{A}$
	(Min.)	(Max.)	(Typ.)	(Max.)	(Typ.)	(Max.)	(Max.)	(Max.)
MMP7070-127-4	100	2.2	6.0	0.5	20	20	1	1
MMP7071-127-4	100	2.0	8.0	1.0	50	20	1	1
MMP7072-127-1	100	0.7	3.0	0.8	200	20	1	1
MMP7073-127-1	100	1.0	2.5	0.5	100	20	1	1
MMP7074-127-4	200	2.2	6.0	0.5	20	20	1	1
MMP7075-127-4	200	2.0	8.0	1.0	50	20	1	1
MMP7076-127-1	200	0.7	3.0	0.8	200	20	1	1
MMP7077-127-1	200	1.0	2.5	0.5	100	20	1	1
MMP7078-127-1	400	1.0	2.5	0.5	100	20	1	1
MMP7079-127-4	600	2.2	6.0	0.5	20	20	1	1
MMP7080-127-1	600	0.7	3.0	0.8	200	20	1	1
MMP7081-127-1	50	1.2	4.0	0.8	20	20	1	1
MMP7089-127-1	500	0.5	1.0	0.6	10	30	1	1
MMP7090-127-1	500	0.7	2.0	0.5	20	25	1	1
MMP7091-127-1	500	1.0	3.0	0.3	50	15	1	1

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Forward Current	1000 mA
Forward Voltage	1.2 V, $I_F = 100 \text{ mA}$
CW Power Dissipation	30 W, De-rate linearly from $+25^\circ\text{C}$ to $+175^\circ\text{C}$ @ $-200 \text{ mW}/^\circ\text{C}$
Junction Temperature	$+175^\circ\text{C}$
Operating Temperature	$-65^\circ\text{C}$ to $+125^\circ\text{C}$
Storage Temperature	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Assembly Temperature	$+260^\circ\text{C}$ , $t = 10 \text{ s}$

### Handling Procedures

Please observe the following precautions to avoid damage:

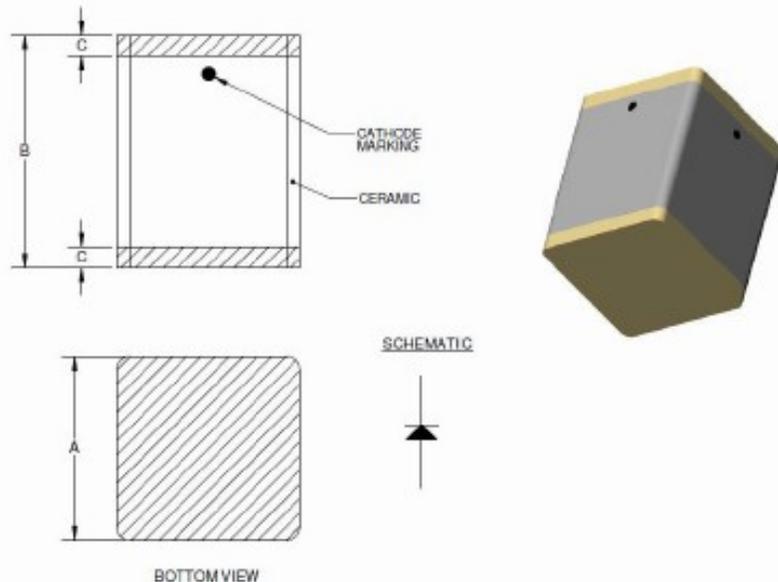
### Static & Moisture Sensitivity

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 Class 1A (HBM) devices. The moisture sensitivity level rating for this device is MSL1.

### Environmental Capabilities

This diode is capable of meeting the environmental requirements of MIL-STD-750.

## CS127-1 and CS127-4 Package Outline



## CS127-1 and CS127-4 Package Outline Dimensions

Part Number	Dimension A		Dimension B		Dimension C	
	Inches	mm	Inches	mm	Inches	mm
CS127-1	0.088 ±0.007	2.24 ±0.18	0.125 ±0.010	3.18 ±0.25	0.020 typ.	-0.51 typ.
CS127-4	0.143 +0.004/-0.002	3.63 +0.10/-0.005	0.181 +0.003/-0.002	4.60 +0.08/-0.05	0.16 ±0.008	0.41 ±0.20

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