PRODUCT DISCONTINUANCE NOTIFICATION
EOL-000319
Date: 3JUN2021

Semtech Corporation, 200 Flynn Road, Camarillo CA 93012

Product Discontinuance Details

Purpose, Description and Effect of Change:

This notification is to inform your company that Semtech is discontinuing the manufacture of the product listed below. In accordance with Semtech's product discontinuation policy, we are hereby giving notice of these product changes in order for your company to make any final lifetime purchases of the discontinued product that are still in supply.

Part Number(s) Affected:	**Customer Part Number(s) Affected:** ☒ N/A
RCLAMP0531Z.TFT/RCLAMP0531Z.TNT	

Replacement or Alternate Part Number(s) ☐ N/A or Not Offered

RCLAMP5031ZATFT

Last Time Buy (LTB) Date	**1DEC2021**	**Must Accept Final Delivery by**	**1JUN2022**
Sample Availability of Alt. Part	☐ N/A	**Qualification Report Availability of Alt. Part**	☐ N/A

Supporting Documents for Alternate or Replacement parts/Attachments:

- RCLAMP5031ZA Datasheet attached
- Qualification report available upon request

Last Time Buy Conditions

We request you carefully review this information and notify your purchasing offices and buyers to place your company's final purchases for available discontinued products as soon as possible according to the following last time buy terms and conditions.

1. **Availability:** The ***Last Time Buy Date*** and ***Date to Accept Final Delivery*** are noted above. All orders must have a ***requested ship date before the Date to Accept Final Delivery*** or the order will be rejected. ***The Last Time Buy Date automatically expires when the final available inventory quantity has been scheduled and sold.***

2. **Pricing:** The product unit price will be subject to Semtech's individual price quotation of your company's last time buy requirements.

3. **Order Acceptance/Change Conditions:**
   A. Semtech will accept last time orders from your company for the discontinued products as "Firm and Final". As such, these orders will not be subject to any reschedule, cancellation, or termination by your company without Semtech's prior written authorization and payment of full termination charges.
   B. Semtech reserves its right to make changes in the scheduled delivery dates, or to terminate remaining undelivered quantities of your company's last time buy order, due to changes in Semtech's last time manufacturing capabilities, or for commercially impracticable circumstances, which makes delivery not feasible.

4. **Quantities:** The following applies to final buy quantities for the available discontinued product:
   A. **First:** The quantities in any existing unfilled orders and contracts acknowledged by Semtech will be honored, then
   B. **Next:** The unfilled quantities in any volume agreement(s) or quantities in unexpired standalone quote(s) will be accepted, and
   C. **Finally:** Any additional reasonable quantity of product that Semtech quotes based upon your company's identified requirements will be taken.

IN THE EVENT OF CONFLICT FOR THE LIMITED AVAILABILITY PRODUCT, QUANTITIES FOR CUSTOMER'S OR DISTRIBUTOR'S ORDERS WILL BE DETERMINED ON A FIRST-COME FIRST-SERVE BASIS; AND WILL BE SUBJECT TO SEMTECH'S AVAILABLE INVENTORY AND REMAINING MANUFACTURING CAPACITY FOR THE PRODUCT.

Limited Warranty

All discontinued product orders subject to this notice shall carry Semtech's standard limited warranty; or, if applicable, the warranty set forth in a duly executed formal contract between Semtech and your company will apply; except that:

1. Semtech will accept all valid warranty claims for credit only, unless a replacement order is otherwise agreed upon by Semtech and the replacement parts can be manufactured or delivered from remaining inventory.
2. The applicable warranty period for making any return claims for discontinued products will be no later than ninety (90) days following delivery of the discontinued products.
3. Any return claims must be made under Semtech's current Return Material Authorization "RMA" procedures.

Additional Provisions

SEMTECH ACCEPTS NO LIABILITY FOR EXCESS REPROCUREMENT COSTS OR FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER ASSOCIATED WITH THIS NOTICE, WITH ITS PRODUCTS, OR WITH THE FINAL MANUFACTURE AND PERFORMANCE AGAINST ANY LAST TIME BUY ORDERS RELATED TO THE DISCONTINUED PRODUCTS COVERED BY THIS NOTICE.

We regret the inconvenience and impact this notice may cause your company. Semtech's sales, marketing, and distribution personnel stand ready to assist you in placing your company's final orders, or in providing the product information you require.

For product inquiries or purchase order information, please contact your local Semtech sales representative.

PRODUCT DISCONTINUANCE NOTIFICATION
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Issuing Authority		
Semtech Business Unit:	PROTECTION	
Semtech Contact Info:	Les Fang Yuen Semtech Corporation Qualit Assurance 200 Flynn Road Camarillo, CA 93012 lfangyuen@semtech.com Office: (949) 269-4443 Fax: (805) 498-3804	
FOR FURTHER INFORMATION & WORLDWIDE SALES COVERAGE: http://www.semtech.com/contact/index.html#support		

RClamp5031ZA

Ultra Small RClamp®

1 Line, 5V ESD Protection

PROTECTION PRODUCTS

Description

RClamp® TVS diodes are designed to protect sensitive electronics from damage or latch-up due to ESD. This device offers desirable characteristics for board level protection including fast response time, low operating and clamping voltage, and no device degradation.

RClamp®5031ZA features extremely good ESD protection characteristics highlighted by low typical dynamic resistance of 0.17 Ohms, low peak ESD clamping voltage, and high ESD withstand voltage (+/-17kV contact per IEC 61000-4-2). Low maximum capacitance (0.45pF at V_R=0V) minimizes loading on sensitive circuits. Each device will protect one high-speed data line operating at 5 Volts.

RClamp5031ZA is in a DFN 0.60x0.30x0.25 mm 2-Lead package. The small package gives the designer the flexibility to protect single lines in applications where arrays are not practical. The combination of small size and high ESD surge capability makes them ideal for use in portable applications.

Features

- High ESD withstand Voltage: +/-17kV (Contact) per IEC 61000-4-2 and +/- 24kV (Air) per IEC 61000-4-2
- Ultra-small package
- Protects one data line
- Low ESD clamping voltage
- Working voltage: 5V
- Low capacitance: 0.45pF maximum
- Low leakage current
- Low dynamic resistance: 0.17Ω (typ.)
- Solid-state silicon-avalanche technology

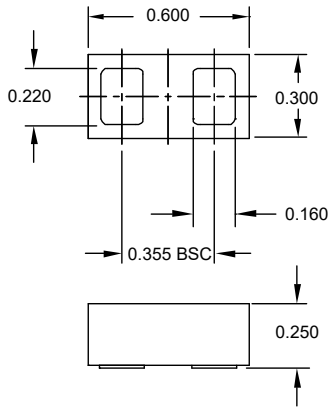
Mechanical Characteristics

- Package: DFN 0.60x0.30x0.25 mm 2-Lead
- Pb-free, Halogen Free, RoHS/WEEE compliant
- Lead Finish: Pb-free,
- Marking: Marking code
- Packaging: Tape and Reel

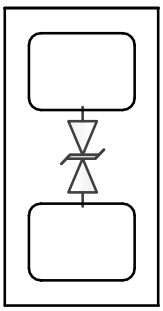
Applications

- USB 3.0/ USB 3.1 Gen 1
- USB Type-C
- MiPi/MDDI
- MHL
- FM antenna
- Wearables

Package Dimension (mm)



Schematic & Pin Configuration



DFN 0.60x0.30x0.25 mm 2-Lead (Bottom View)

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Current (tp = 1.2/50µs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)(2) ESD per IEC 61000-4-2 (Contact)(2)	V_{ESD}	±24 ±17	kV
Operating Temperature	T_{OP}	-40 to +85	^{O}C
Junction Temperature and Storage Temperature	T_J and T_{STG}	-55 to +150	^{O}C

Electrical Characteristics (T=25^{O}C unless otherwise specified)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}					5	V
Reverse Breakdown Voltage	V_{BR}	I_t = 10mA		6.5	8.5	10.5	V
Holding Current	I_H	V=V_H			100		mA
Reverse Leakage Current	I_R	V_{RWM} = 5V			<5	50	nA
Clamping Voltage	V_C	tp = 8/20µs	I_{PP} = 4A			13	V
ESD Clamping Voltage[2]	V_C	tp = 0.2/100ns	I_{PP} = 4A		5		V
			I_{PP} = 16A		7		
Dynamic Resistance[2,3]	R_{DYN}	tp = 0.2/100ns			0.17		Ω
Junction Capacitance	C_J	V_R = 0V, f = 1MHz	T = 25^{O}C		0.35	0.45	pF

Notes:

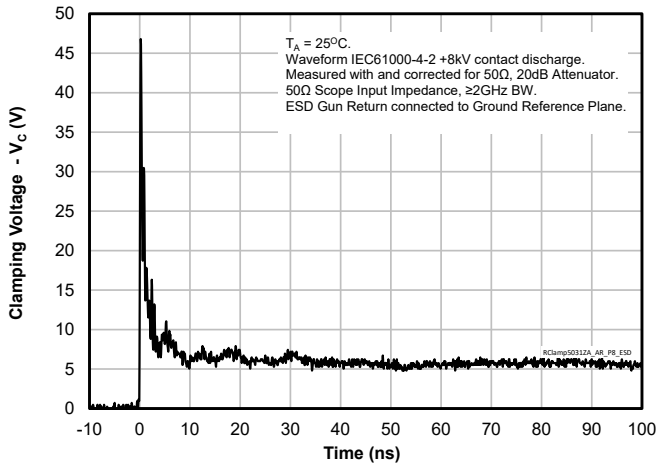
1) ESD gun return path connected to ESD ground plane.

2) Transmission Line Pulse Test (TLP) Settings: tp = 100ns, tr = 0.2ns, I_{TLP} and V_{TLP} averaging window: t1 = 70ns to t2 = 90ns.

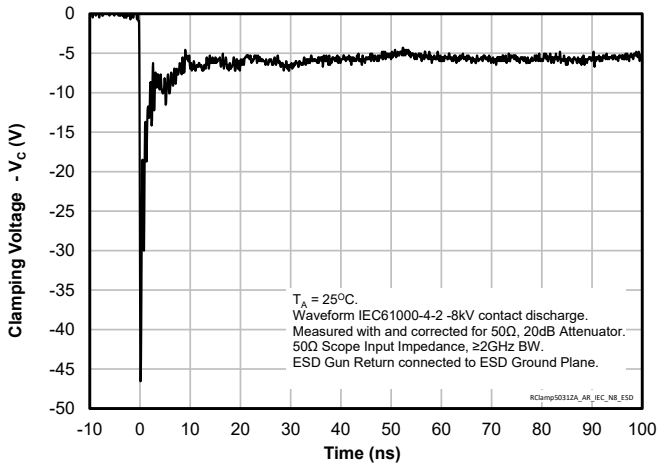
3) Dynamic resistance calculated from I_{TLP} = 4A to I_{TLP} = 16A

Typical Characteristics

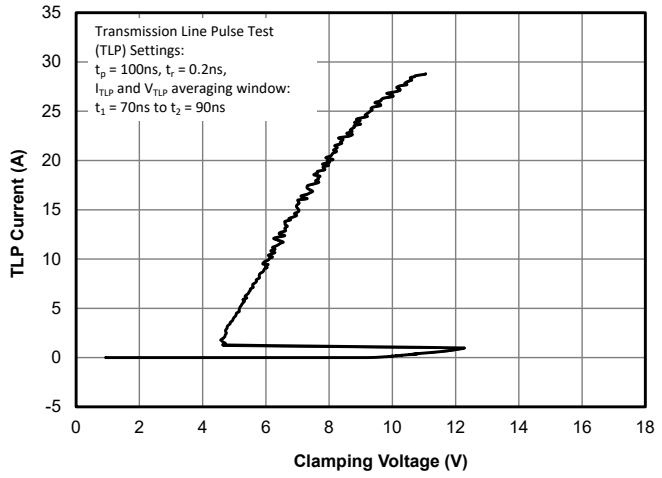
ESD Clamping (8kV Contact per IEC 61000-4-2)



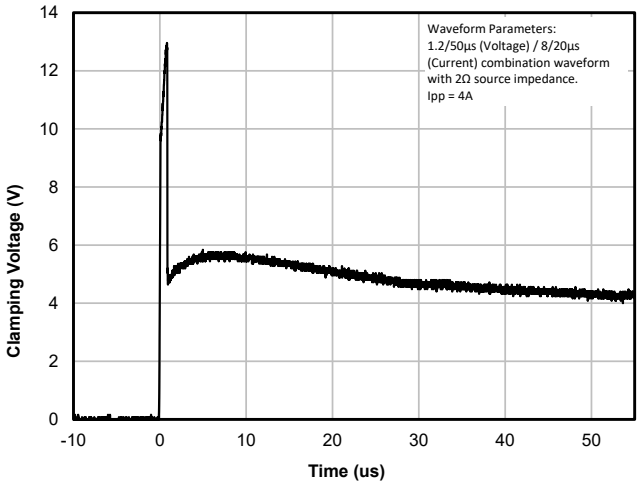
ESD Clamping (-8kV Contact per IEC 61000-4-2)



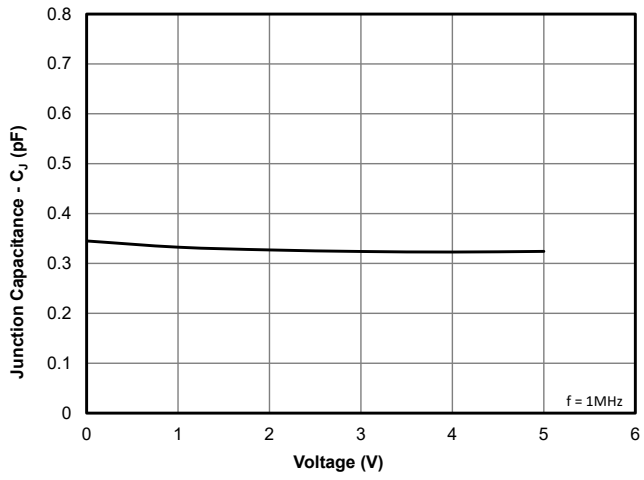
TLP Characteristic (Positive Pulse)



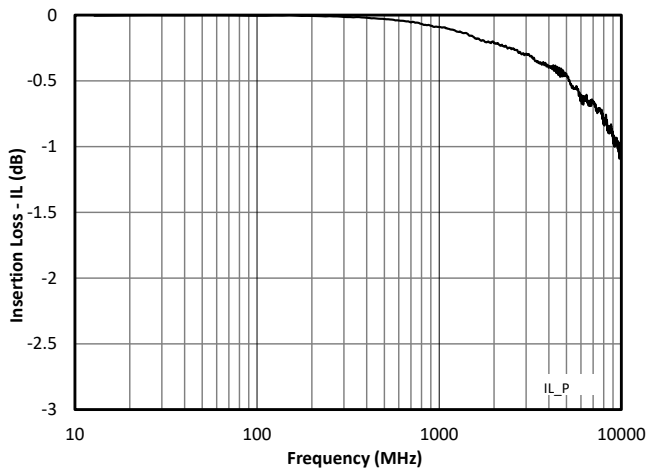
Clamping Voltage Waveform (tp=1.2/50µs)



Capacitance vs. Reverse Voltage

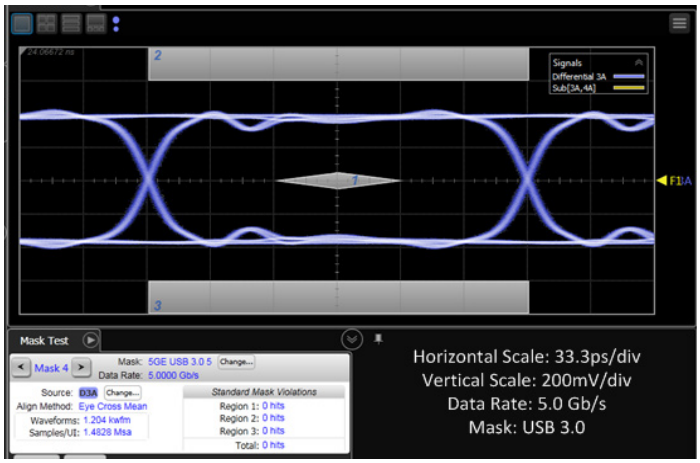


Insertion Loss - S21

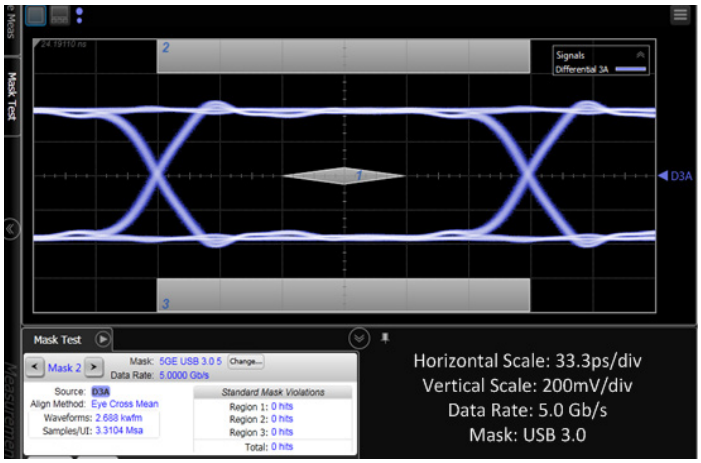


Typical Characteristics (Continued)

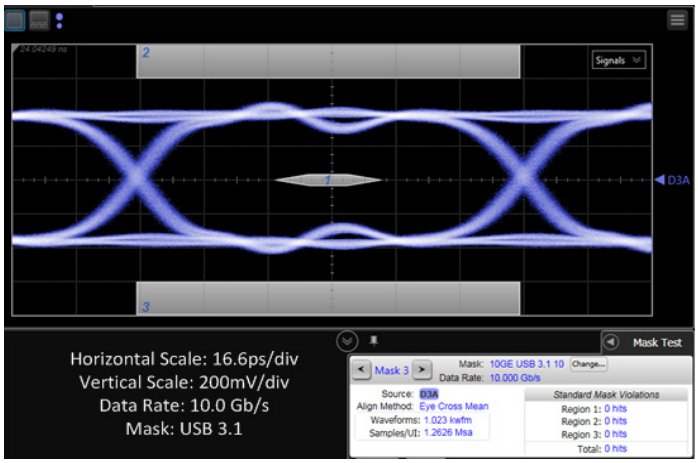
5Gb/s (USB 3.0) Eye Diagram with RClamp5031ZA



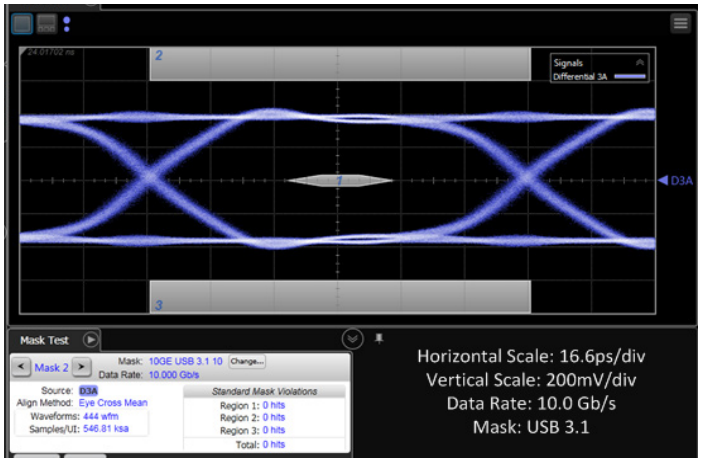
5Gb/s (USB 3.0) Eye Diagram without RClamp5031ZA



10Gb/s (USB 3.1) Eye Diagram with RClamp5031ZA



10Gb/s (USB 3.1) Eye Diagram without RClamp5031ZA



Application Information

Assembly Guidelines

The figure at the right details Semtech's recommended mounting pattern. Recommended assembly guidelines are shown in Table 1. Note that these are only recommendations and should serve only as a starting point for design since there are many factors that affect the assembly process. Exact manufacturing parameters will require some experimentation to get the desired solder application.

Solder Stencil

Stencil design is one of the key factors which will determine the volume of solder paste which is deposited onto the land pad. The area ratio of the stencil aperture will determine how well the stencil will print. The area ratio takes into account the aperture shape, aperture size, and stencil thickness. A minimum area ratio of 0.66 is preferred for the subject package. The area ratio of a rectangular aperture is given as:

Area Ratio = (L * W)/ (2 * (L + W) * T)

Where:
L = Aperture Length
W = Aperture Width
T = Stencil Thickness

Semtech recommends a stencil with square aperture and rounded corners for consistent solder release. The stencil should be laser cut with electro-polished finish. A stencil thickness of 0.075mm (0.003") is recommended. A 0.100mm (0.004") stencil may be used, however the stencil opening may need to be increased slightly to achieve the desired area ratio to ensure proper solder coverage on the pad.

Recommended Mounting Pattern

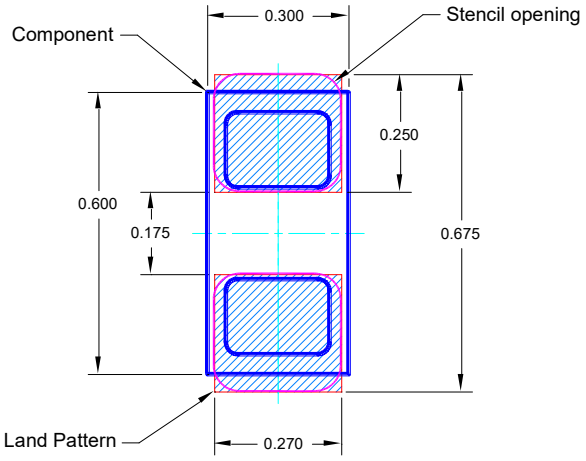
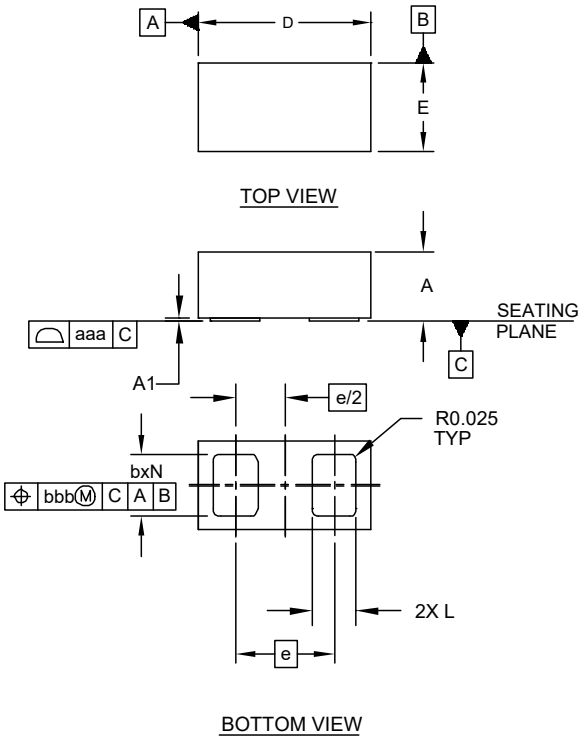


Table 1 - Assembly Guidelines

Assembly Parameter	Recommendation
Solder Stencil Design	Laser Cut, Electro-Polished
Aperture Shape	Rectangular with Rounded Corners
Solder Stencil Thickness	0.075mm (0.003") or 0.100mm (0.004")
Solder Paste Type	Type 4 Size Sphere or Smaller
Solder Reflow Profile	Per JEDEC J-STD-020
PCB Solder Pad Design	Solder Mask Defined or Non Solder Mask Defined
PCB Pad Finish	OSP or NiAu

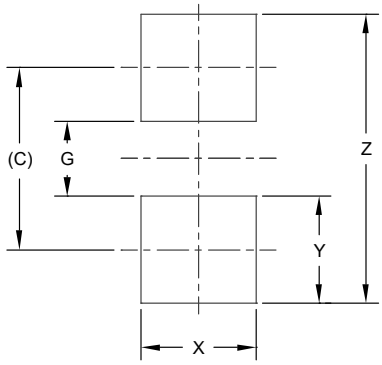
Outline Drawing - DFN 0.60x0.30x0.25 mm 2-Lead



DIMENSIONS			
DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.235	0.250	0.265
A1	0.000	0.010	0.050
b	0.200	0.220	0.240
D	0.580	0.600	0.620
E	0.280	0.300	0.320
e	0.355 BSC		
L	0.140	0.160	0.180
N	2		
aaa	0.08		
bbb	0.10		

NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).

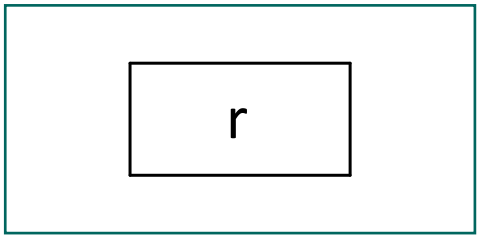
Land Pattern - DFN 0.60x0.30x0.25 mm 2-Lead



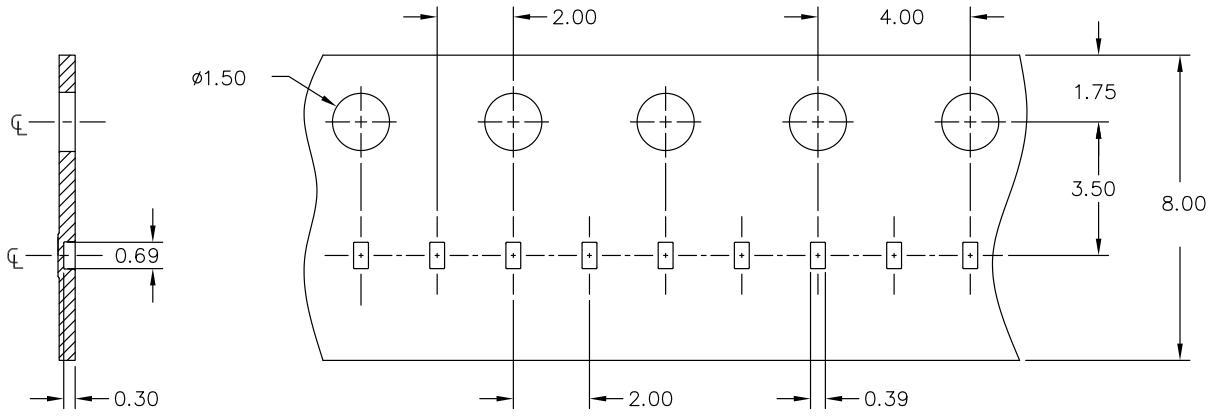
DIMENSIONS	
DIM	MILLIMETERS
(C)	(0.425)
G	0.175
X	0.270
Y	0.250
Z	0.675

NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

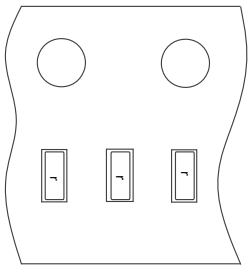
Marking Code



Tape and Reel Specification



Note: All dimensions are nominal dimensions in mm.



Ordering Information

Part Number	Qty per Reel	Reel Size
RClamp5031ZATFT	15,000	7”

Important Notice

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Contact Information

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