

SuperESD - RCLAMP2504N.TCT-ES

1. Description

The RCLAMP2504N.TCT-ES is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
 - $\pm 30\text{kV}$ Contact Discharge
 - $\pm 30\text{kV}$ Air Discharge
- 650W Peak pulse Power(IO-GND, 8/20us)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- RoHS compliant
- Protecting 4 unidirectional lines
- Junction Capacitance: 4pF Typ.

3. Applications

- Computers
- Communication systems
- Wireline and wireless telephone sets
- Printers
- Cellular phones handsets and accessories
- Set top boxes

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
RCLAMP2504N.TCT-ES	DFN2626-10L	.3304C	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

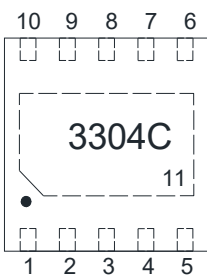
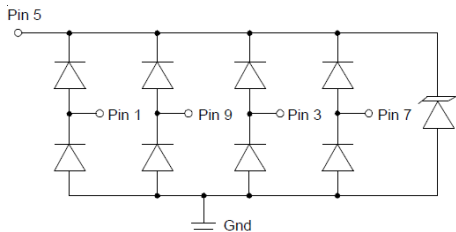
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to I/O		
2/4/6/8/10	NC	NO Connection		
3	IO2	Connect to I/O		
5	VCC	Connect to VCC		
7	IO3	Connect to I/O		
9	IO4	Connect to I/O		
11	GND	Connect to GND		

Table-2 Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (IO-GND $t_p=8/20\mu s$)@25°C	Ppk1	-	650	W
Peak pulse current (IO-GND $t_p=8/20\mu s$)@25°C	IPP1		40	A
Peak pulse power (VCC-GND $t_p=8/20\mu s$)@25°C	Ppk2	-	750	W
Peak pulse current (VCC-GND $t_p=8/20\mu s$)@25°C	IPP2		50	A
ESD (IEC61000-4-2 air discharge) @25°C	VESD	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	VESD	-	±30	kV
Junction temperature	TJ	-	150	°C
Operating temperature	TOP	-40	125	°C
Storage temperature	TSTG	-55	150	°C
Lead temperature	TL	-	260	°C

Table-3 Absolute Maximum rating

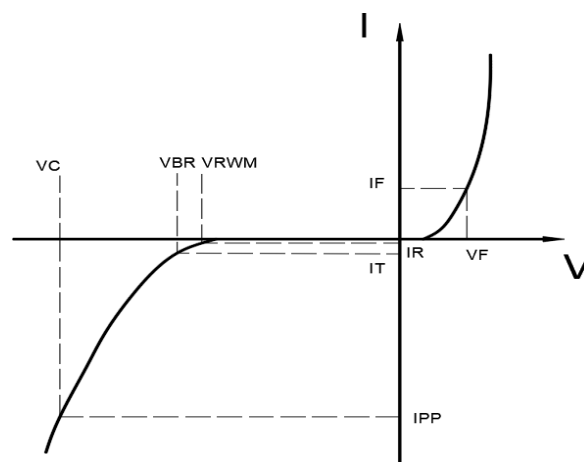
6.2. Electrical Characteristics

At TA = 25°C unless otherwise noted

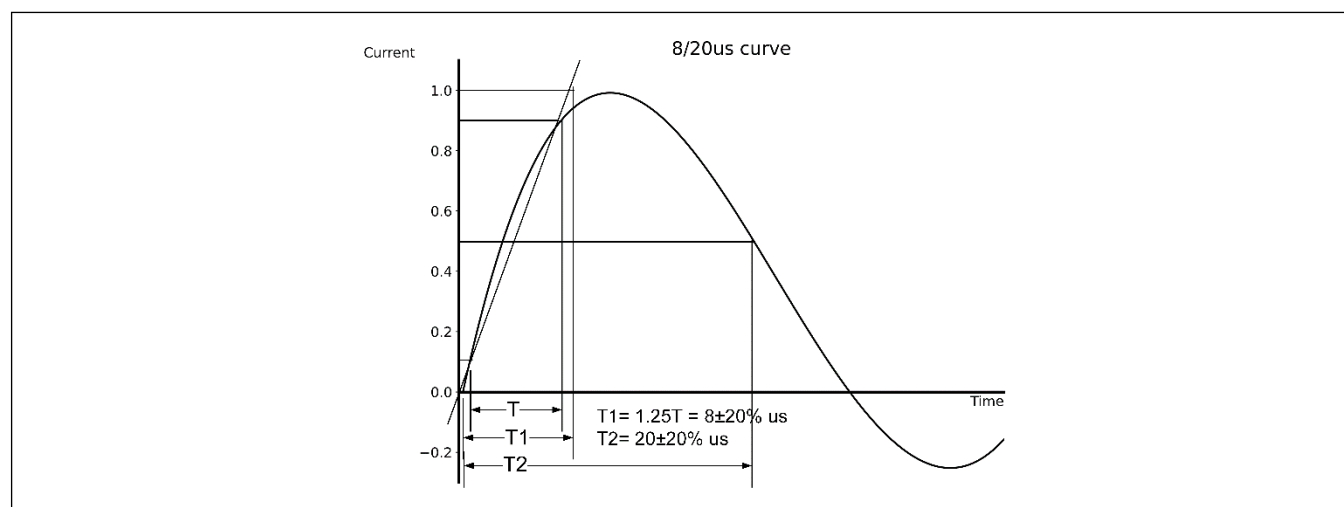
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	VRWM				3.3	V
Reverse Breakdown Voltage	VBR	IT=1mA	4.0			V
Reverse Leakage Current	IR	VRWM=3.3V			1.0	uA
Clamping Voltage	VC1	IPP=1A; IO-GND, tp=8/20us		7.0	10.0	V
Clamping Voltage	VC2	IPP=40A; IO-GND, tp=8/20us		13.0	16.0	V
Clamping Voltage	VC3	IPP=1A; VCC-GND, tp=8/20us		6.0	9.0	V
Clamping Voltage	VC4	IPP=50A; VCC-GND, tp=8/20us		12.0	15.0	V
Junction Capacitance	CJ	I/O to GND; VR=0V; f=1MHz		4.0	6.0	pF
		Vcc to GND; VR=0V; f=1MHZ		160	180	pF

Table-4 Electrical Characteristics

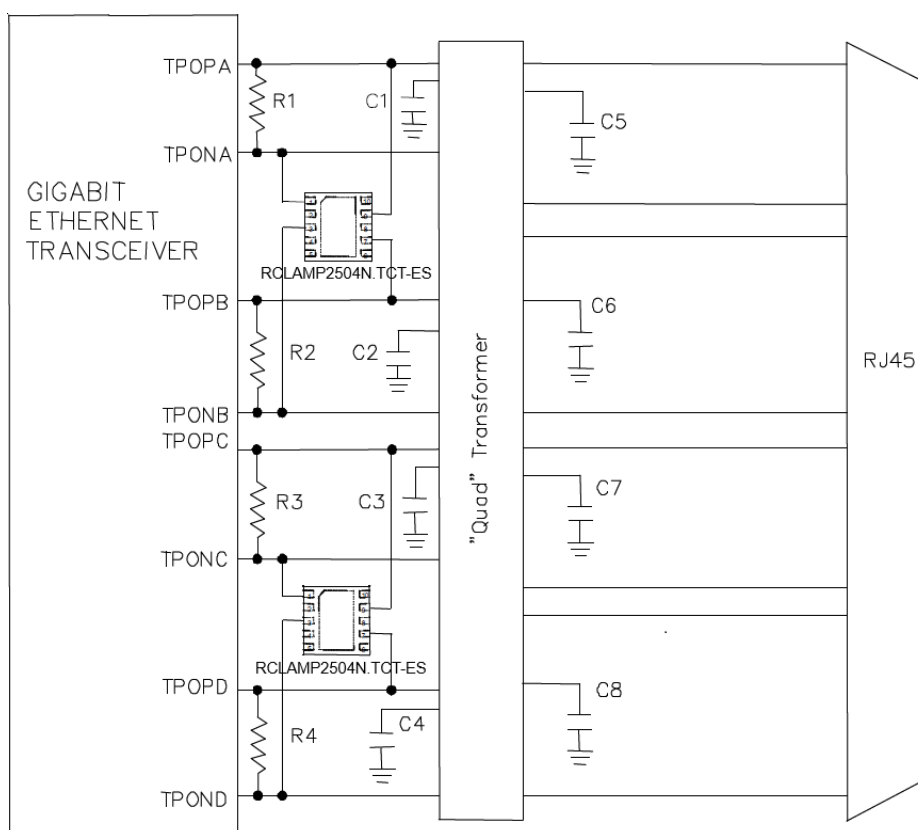
Symbol	Parameters
VRWM	Peak Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IPP	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ IPP
IF	Forward Current
VF	Forward Voltage @ IF



Typical Characteristic

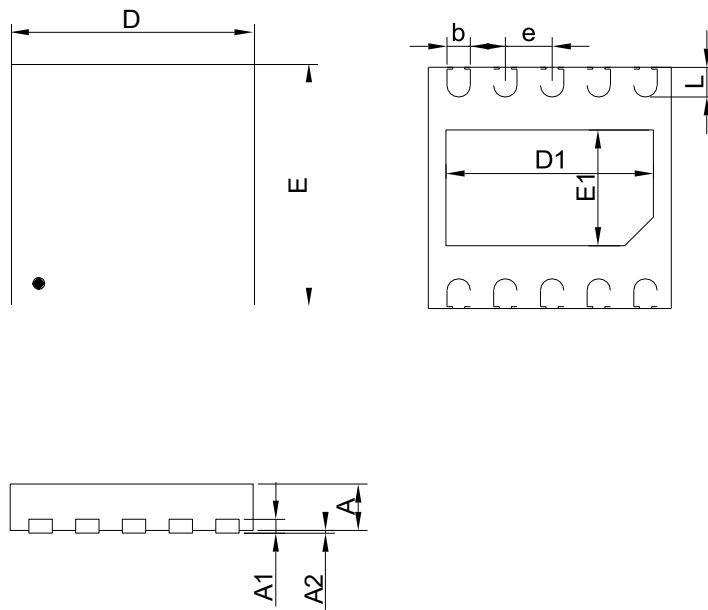


7. Typical Application



Typical Interface Application

8. Dimension (DFN2626-10L)



Unit: mm

Symbol		A	A1	A2	b	D
Spec	Min	0.45	0.15.REF	0	0.20	2.55
	Max	0.55		0.05	0.30	2.65
Symbol		D1	E	E1	e	L
Spec	Min	2.10	2.55	1.21	0.50.BSC	0.30
	Max	2.20	2.65	1.31		0.40

DISCLAIMER

ELECSUPER PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with ElecSuper products. You are solely responsible for

- (1) selecting the appropriate ElecSuper products for your application;
- (2) designing, validating and testing your application;
- (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements.

These resources are subject to change without notice. ElecSuper grants you permission to use these resources only for development of an application that uses the ElecSuper products described in the resource. Other reproduction and display of these resources are prohibited. No license is granted to any other ElecSuper intellectual property right or to any third party intellectual property right. ElecSuper disclaims responsibility for, and you will fully indemnify ElecSuper and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources. ElecSuper's products are provided subject to ElecSuper's Terms of Sale or other applicable terms available either on www.elecsuper.com or provided in conjunction with such ElecSuper products. ElecSuper's provision of these resources does not expand or otherwise alter ElecSuper's applicable warranties or warranty disclaimers for ElecSuper products.