

PROTECTION PRODUCTS

Absolute Maximum Ratings

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PK}	400	W
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	25	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	30	kV
ESD per IEC 61000-4-2 (Contact)		30	
Operating Temperature	T_J	-55 to +85	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

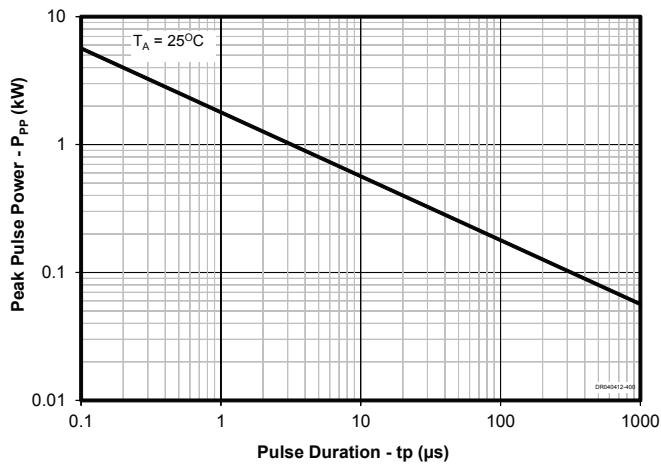
Electrical Characteristics ($T=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}				3.3	V
Punch-Through Voltage	V_{PT}	$I_{PT} = 2\mu A$	3.5		5.3	V
Snap-Back Voltage	V_{SB}	$I_{SB} = 50mA$	2.8			V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3V, T=25^{\circ}C$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20\mu s$ Any I/O to Ground			5.5	V
		$I_{PP} = 10A, t_p = 8/20\mu s$ Any I/O to Ground			10	
		$I_{PP} = 25A, t_p = 8/20\mu s$ Any I/O to Ground			16	
Junction Capacitance	C_J	Between I/O pins and Ground $V_R = 0V, f = 1MHz$		3.8	5	pF
		Between I/O pins $V_R = 0V, f = 1MHz$		2.0		

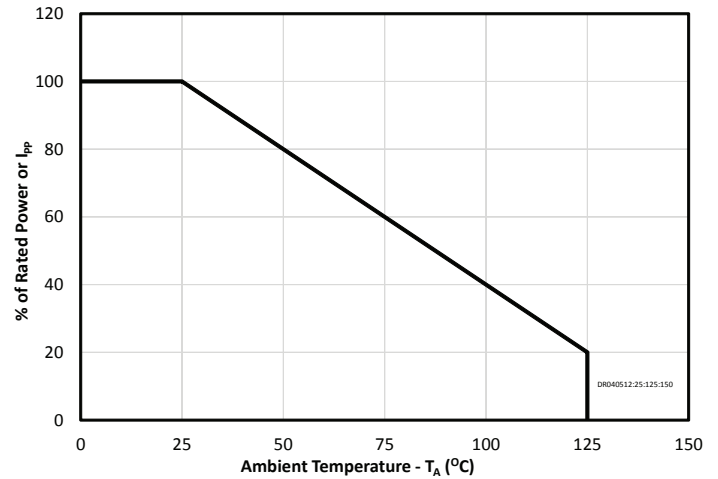
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Typical Characteristics

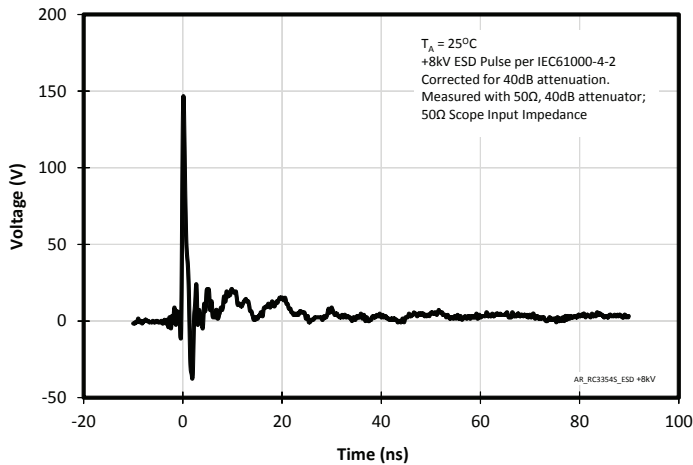
Non-Repetitive Peak Pulse Power vs. Pulse Time



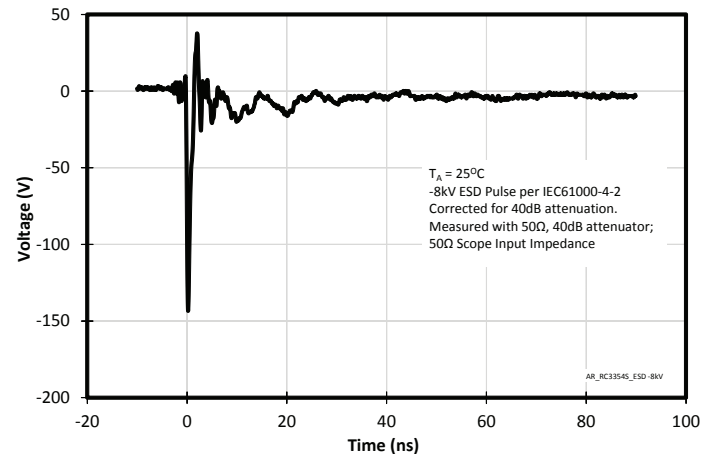
Power Derating Curve



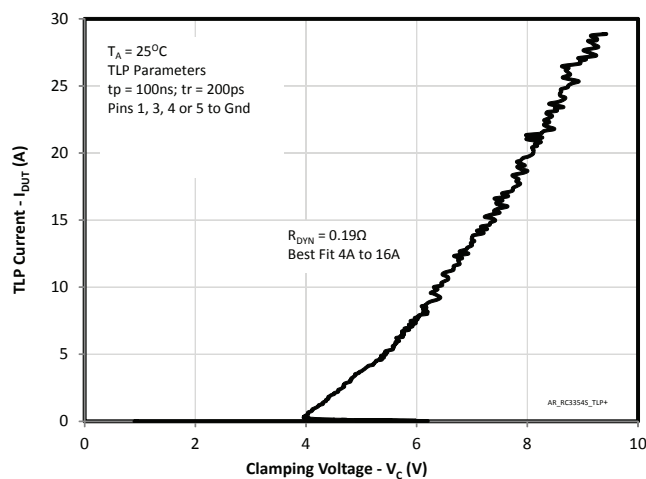
ESD Clamping (+8kV Contact per IEC 61000-4-2)



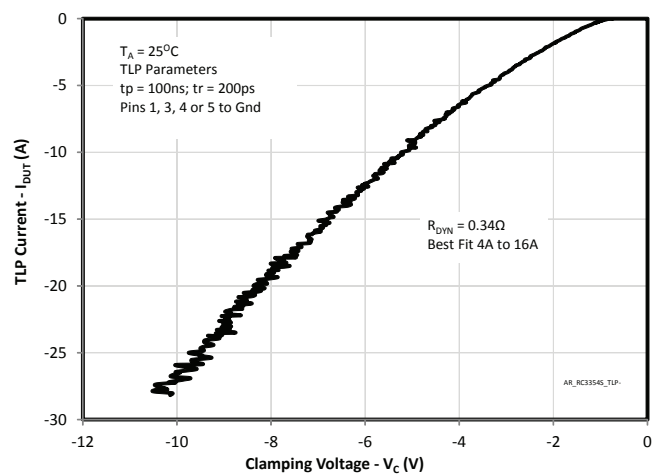
ESD Clamping (-8kV Contact per IEC 61000-4-2)

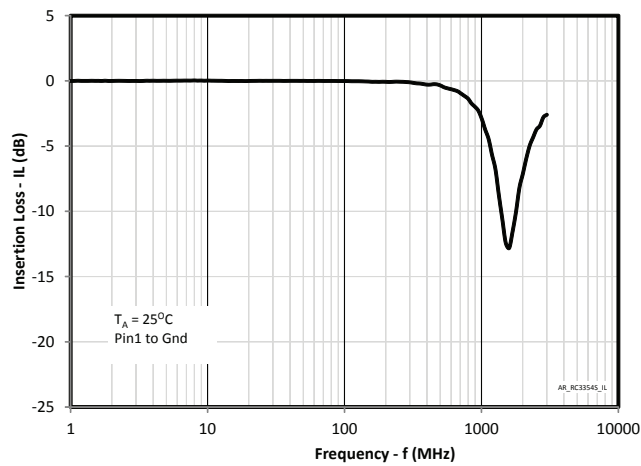
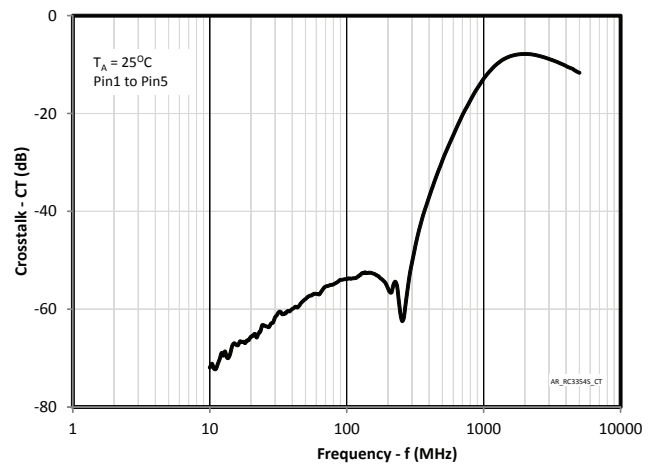
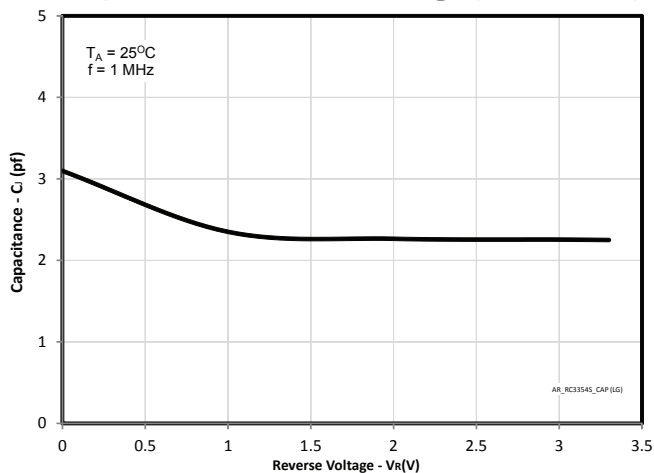
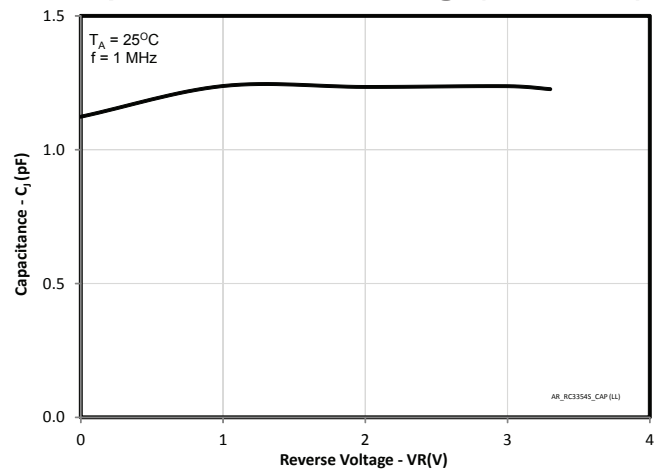


Positive TLP Characteristic



Negative TLP Characteristic



PROTECTION PRODUCTS
Typical Characteristics (Continued)
Typical Insertion Loss S21

Analog Crosstalk

Capacitance v Reverse Voltage (Line to GND)

Capacitance v Reverse Voltage (Line to Line)


PROTECTION PRODUCTS

Applications Information

Gigabit Ethernet Protection Solutions

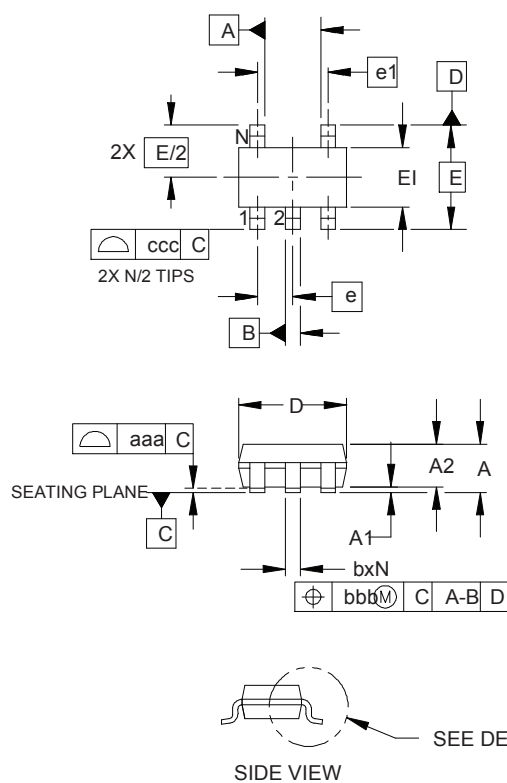
Ethernet systems with connections external to the building are subject to high-level transient threats. This type of equipment may even be required to meet the surge immunity requirements of Telcordia GR-1089. Reliable protection of the Ethernet transceiver requires a device that can absorb the expected transient energy, clamp the incoming surge to a safe level, and yet remain transparent to the system under normal operation. The RClamp3354S has been designed to meet these demanding requirements.

Transient Protection

When designing Ethernet protection, the entire system must be considered. An Ethernet port includes interface magnetics in the form of transformers and common mode chokes. Transformers and chokes can be discrete components, but integrated solutions that include the RJ-45 connector, resistors, capacitors, and protection are also available. In either case, the transformer will provide a high level of common mode isolation to external voltages, but no protection for metallic (line-to-line) surges. During a metallic transient event, current will flow into one line, through the transformer and back to the source. As the current flows, it charges the windings of the transformer on the line side. Once the surge is removed, the windings on the line side will stop charging and will transfer its stored energy to the IC side where the PHY IC is located. The magnitude and duration of the surge is attenuated by the inductance of the magnetics. The amount of attenuation will vary by vendor and configuration of the magnetics. It is this transferred energy that must be clamped by the protection circuitry.

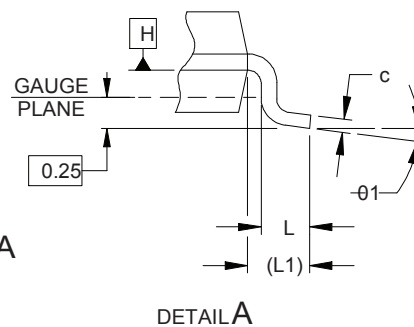
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Outline Drawing - SOT-23 5L



DIM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	-	1.45
A1	0.00	-	0.15
A2	.90	1.15	1.30
b	0.25	-	0.50
c	0.08	-	0.22
D	2.80	-	3.10
E1	1.50	1.60	1.75
E	2.80 BSC		
e	0.95 BSC		
e1	1.90 BSC		
L	0.30	0.45	0.60
L1	(0.60)		
N	5		
Ø1	0°	-	10°
aaa	0.10		
bbb	0.20		
ccc	0.20		

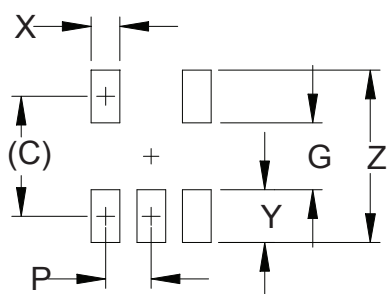
DR192534-10 R0



NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. DATUMS $\boxed{A-}$ AND $\boxed{B-}$ TO BE DETERMINED AT DATUM PLANE $\boxed{H-}$
3. DIMENSIONS "E1" AND "D" DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

Land Pattern - SOT-23 5L



DIM	DIMENSIONS	
	MILLIMETERS	
C	(2.50)	
G	1.40	
P	0.95	
X	0.60	
Y	1.10	
Z	3.60	

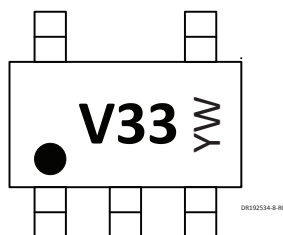
DR192534-11-R0

NOTES:

- 1.
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

PROTECTION PRODUCTS

Marking



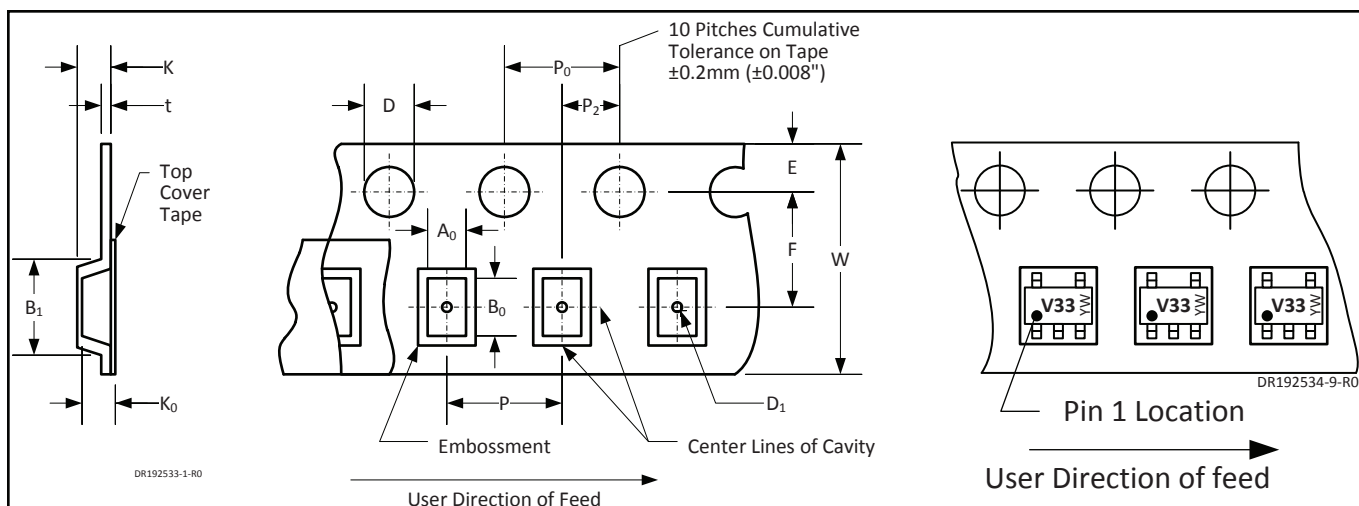
YW = Alphanumeric character Date Code

Ordering Information

Part Number	Lead Finish	Qty per Reel	Reel Size
RClamp3354S.TCT	Matte Tin	3,000	7 inch

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Tape and Reel Specification



All dimensions in mm

A0	B0	K0	B (Max)	D	D1	E	F	K (Max)	P	P0	P2	T (MAX)	W
3.23 ± 0.05	3.17 ± 0.05	1.37 ± 0.05	4.2	1.5 +0.1 -0.0	1.0 ± 0.05	1.75 ± 0.10	3.5 ± 0.05	2.4	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	0.4	8.0 +0.3 -0.1

Contact Information

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