

TVS/ESD Arrays

RLST23A712C Series

TVS/ESD Arrays - RLST23A712C Series

Features

- 400 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Protects two +12V to -7V lines
- Low Leakage Current
- Low operating and clamping voltages
- Lead Free/RoHS compliant
- Solid-state silicon avalanche technology
- Provides ESD protection to IEC61000-4-2(ESD):
 - ±15kV (air discharge)
 - ±8kV (contact discharge)



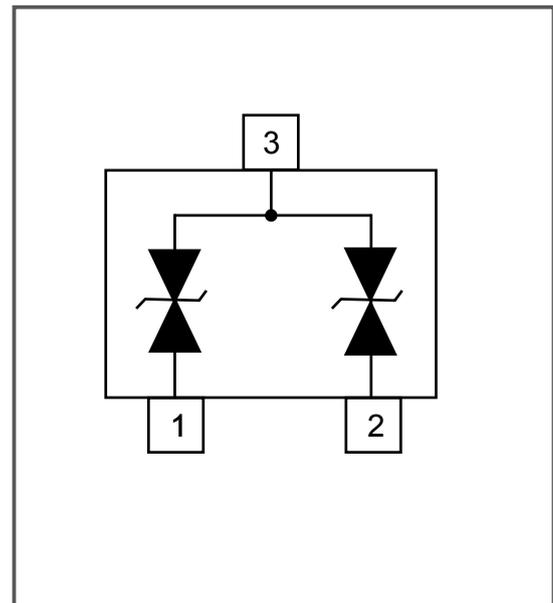
Mechanical Characteristics

- SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel per EIA 481
- Lead Finish: Matte tin
- RoHS Compliant

Applications

- 10/100 Ethernet
- WAN/LAN Equipment
- Switching Systems
- Desktops, Servers, Notebooks & Handhelds
- Laser Diode Protection
- Base Stations

Pinout and Functional Block Diagram



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Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =8/20μs)	P _{PK}	400	Watts
ESD Voltage (Contact)	V _{ESD}	±8	Kv
ESD Voltage (Air)	V _{ESD}	±15	Kv
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature	T _J	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C

Electrical Characteristics Per Lin (@ 25°C Unless Otherwise Specified)

Pin3 to Pin1 /Pin2

Parameter	Symbol	Conditions	MIN	TYP	MAX	Units
Reverse Stand-Off Voltage	V _{RWM}		-	-	7	V
Reverse Breakdown Voltage	V _{BR}	I _{BR} =1mA	7.5	-	-	V
Reverse leakage current	I _R	V _R =7V	-	-	20	μA
Clamping voltage (tp=8/20s)	V _C	I _{PP} =5A	-	-	10	V
Off state junction capacitance	C _J	0Vdc, f=1MHZ between I/O pins and GND	-	-	75	pF

Pin1/Pin2 to Pin3

Parameter	Symbol	Conditions	MIN	TYP	MAX	Units
Reverse Stand-Off Voltage	V _{RWM}		-	-	12	V
Reverse Breakdown Voltage	V _{BR}	I _{BR} =1mA	13.3	-	-	V
Reverse leakage current	I _R	V _R =12V	-	-	1	μA
Clamping voltage (tp=8/20s)	V _C	I _{PP} =5A	-	-	20	V
Off state junction capacitance	C _J	0Vdc, f=1MHZ between I/O pins and GND	-	-	75	pF

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Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

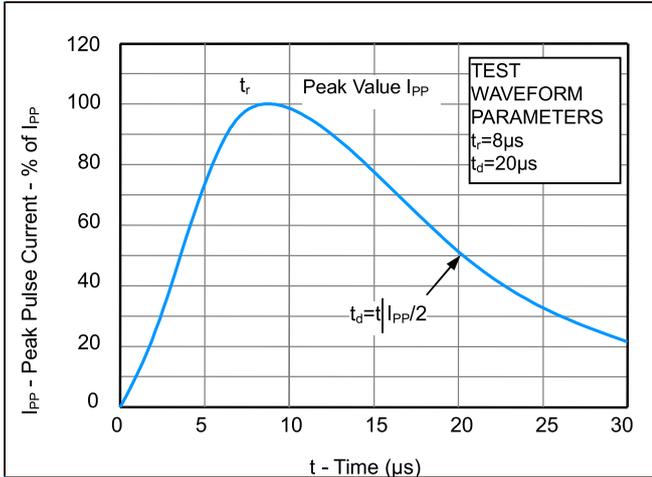


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

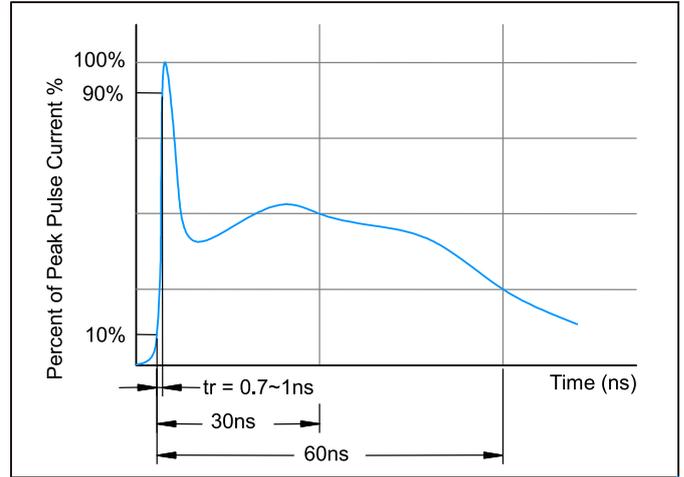


Fig3. Power Derating Curve

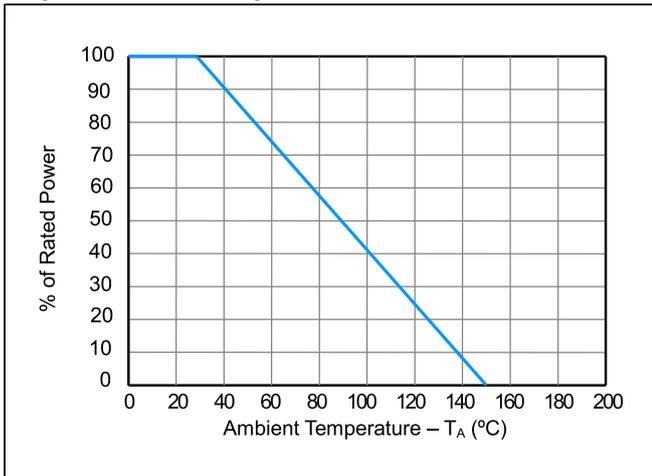
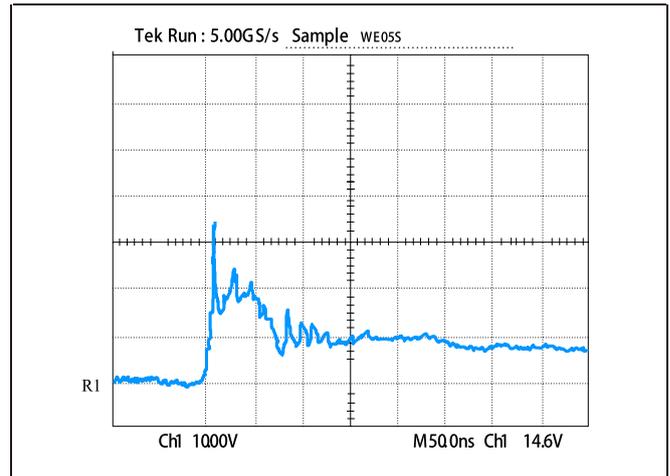
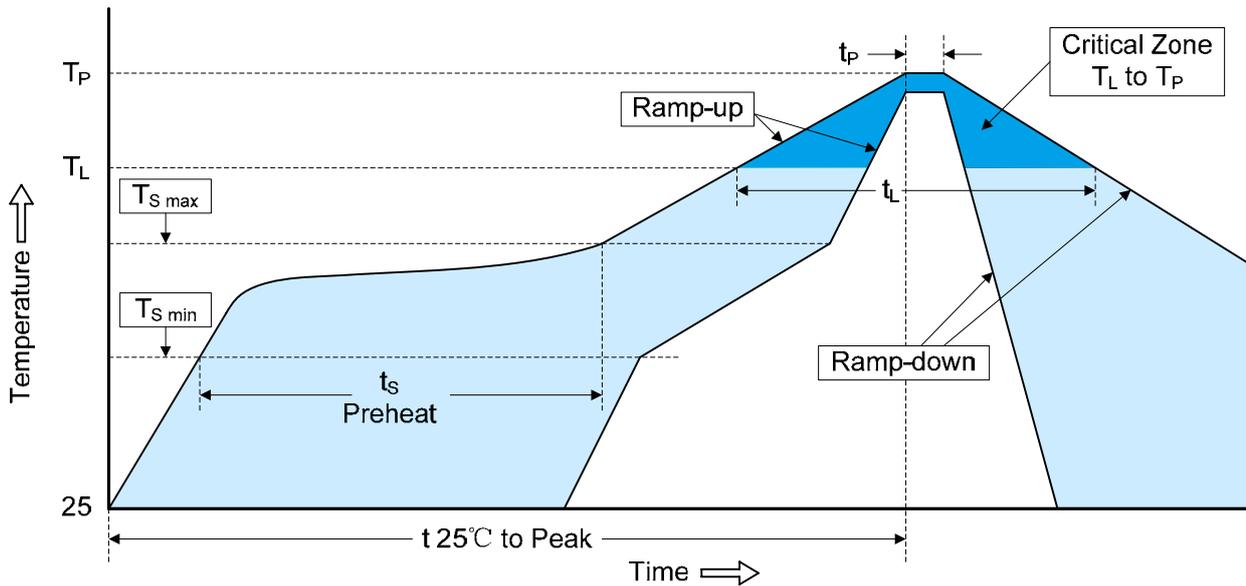


Figure 4: ESD Clamping (8kV Contact per IEC 61000-4-2)



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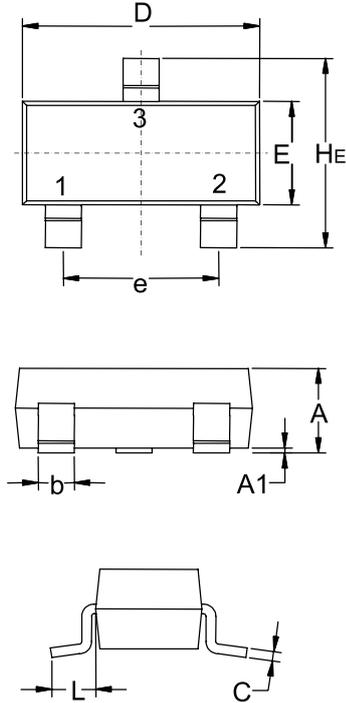
Recommended Soldering Conditions



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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Package dimension SOT-23



DIM	Dimensions					
	Inches			Millimeters		
	Min	Nom	Max	Min	Nom	Max
A	0.035	0.040	0.044	0.89	1.00	1.12
A1	0.001	0.002	0.004	0.01	0.06	0.10
b	0.015	0.018	0.020	0.37	0.44	0.50
C	0.003	0.005	0.007	0.09	0.13	0.18
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.047	0.051	0.055	1.20	1.30	1.40
e	0.070	0.075	0.081	1.78	1.90	2.04
L	0.014	0.021	0.029	0.35	0.54	0.69
HE	0.083	0.094	0.104	2.1	2.4	2.64

Part Number Code

R	L	S	T	2	3	A	7	1	2	C
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
LOGO			Package			Straight foot	V _{RWM} :7/12V		V= Unidirectional	
			SOT-23			overhanging			C= Bidirectional	

Ordering Information

Part Number	Package	Min. Order Qty.
RLST23A712C	SOT-23	3000pcs

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Tel: +86-755-8290 8296

Fax: +86-755-8290 8002

E-mail: jack@ruilon.com