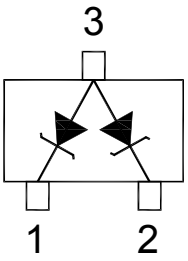
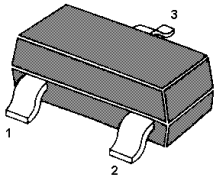
ESD...UCA Series

ESD Protection Diode





1. Cathode 2. Cathode 3. Anode
SOT-23 Plastic Package

Features

- Low clamping voltage
- Ultra low leakage current

Absolute Maximum Ratings (T_a = 25℃)

Parameter		Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μs)	ESD3V3UCA ESD5V2UCA ESD12UCA ESD15UCA ESD24UCA	P_{PK}	330 260 180 160 160	W
Peak Pulse Current (tp = 8/20 μs)	ESD3V3UCA ESD5V2UCA ESD12UCA ESD15UCA ESD24UCA	I_{PP}	18 15 5 5 3	A
ESD per IEC 61000-4-2 (Contact)	ESD3V3UCA ESD5V2UCA ESD12UCA ESD15UCA ESD24UCA	V_{ESD}	30 30 30 30 23	KV
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	- 65 to + 150	℃

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Characteristics at T_a = 25℃

Parameter		Symbol	Min.	Max.	Unit
Working Peak Reverse Voltage					
	ESD3V3UCA	V_{RWM}	-	3.3	V
	ESD5V2UCA		-	5.2	
	ESD12UCA		-	12	
	ESD15UCA		-	15	
	ESD24UCA		-	24	
Reverse Breakdown Voltage					
at I_R = 5 mA	ESD3V3UCA	$V_{(BR)R}$	5.2	6	V
	ESD5V2UCA		6.4	7.2	
	ESD12UCA		14.7	15.3	
	ESD15UCA		17.6	18.4	
	ESD24UCA		26.5	27.5	
Reverse Current					
at V_{RWM} = 3.3 V	ESD3V3UCA	I_R	-	2	µA
at V_{RWM} = 5.2 V	ESD5V2UCA		-	1	
at V_{RWM} = 12 V	ESD12UCA		-	1	
at V_{RWM} = 15 V	ESD15UCA		-	1	
at V_{RWM} = 24 V	ESD24UCA		-	1	
Clamping Voltage					
at I_{PP} = 1 A, tp = 8/20 µs	ESD3V3UCA	V_C	-	7	V
	ESD5V2UCA		-	9	
	ESD12UCA		-	19	
	ESD15UCA		-	23	
	ESD24UCA		-	36	
Clamping Voltage					
at I_{PP} = 18 A, tp = 8/20 µs	ESD3V3UCA	V_C	-	20	V
at I_{PP} = 15 A, tp = 8/20 µs	ESD5V2UCA		-	20	
at I_{PP} = 5 A, tp = 8/20 µs	ESD12UCA		-	35	
at I_{PP} = 5 A, tp = 8/20 µs	ESD15UCA		-	40	
at I_{PP} = 3 A, tp = 8/20 µs	ESD24UCA		-	70	
Reverse Current					
at V_R = 0 V, f = 1 MHz	ESD3V3UCA	C_j	-	300	pF
at V_R = 0 V, f = 1 MHz	ESD5V2UCA		-	200	
at V_R = 0 V, f = 1 MHz	ESD12UCA		-	75	
at V_R = 0 V, f = 1 MHz	ESD15UCA		-	70	
at V_R = 0 V, f = 1 MHz	ESD24UCA		-	50	

Electrical Characteristics Curves

Fig 1. Pulse Waveform

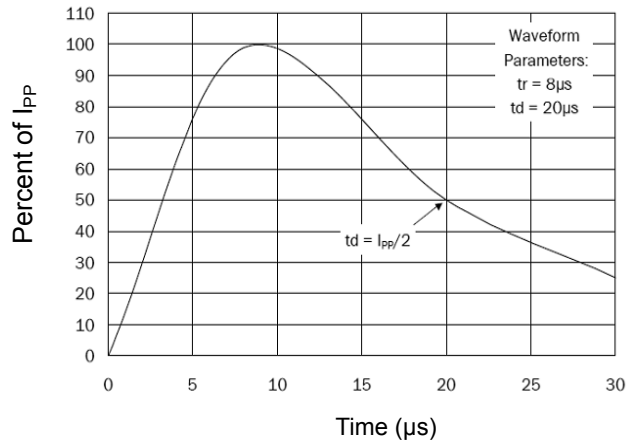


Fig 2. Power Derating Curve

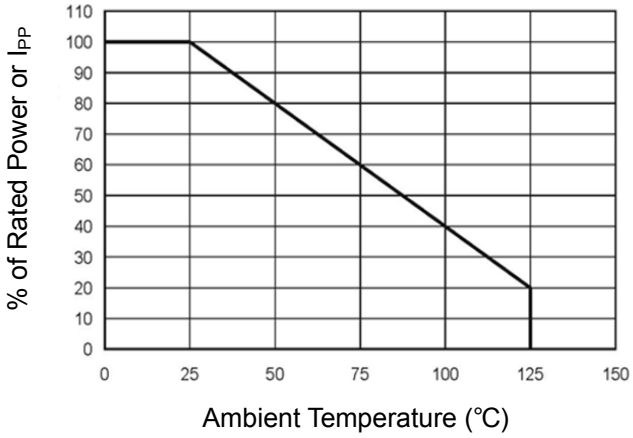


Fig 3. Clamping Voltage Curve

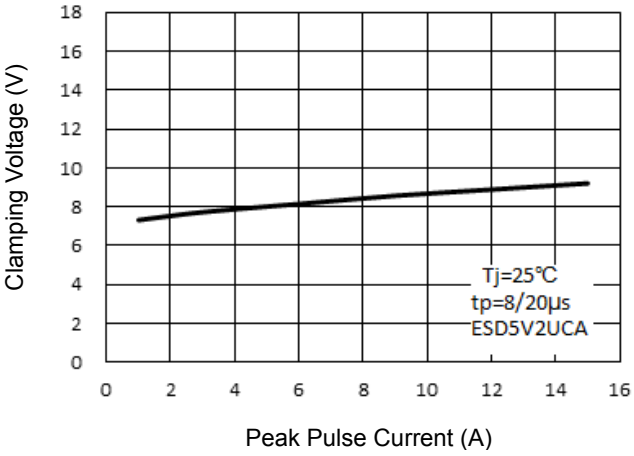


Fig 4. Junction Capacitance

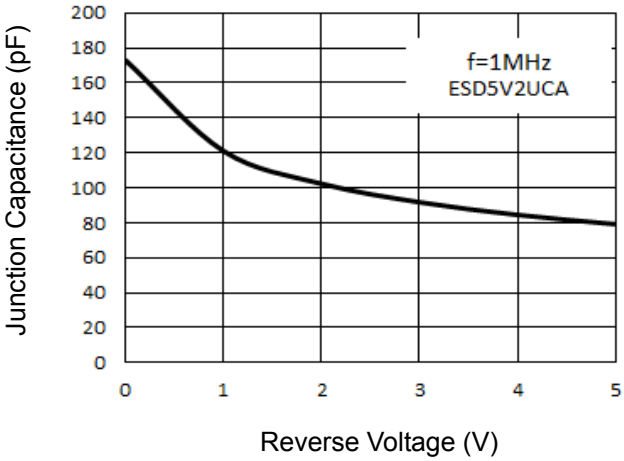
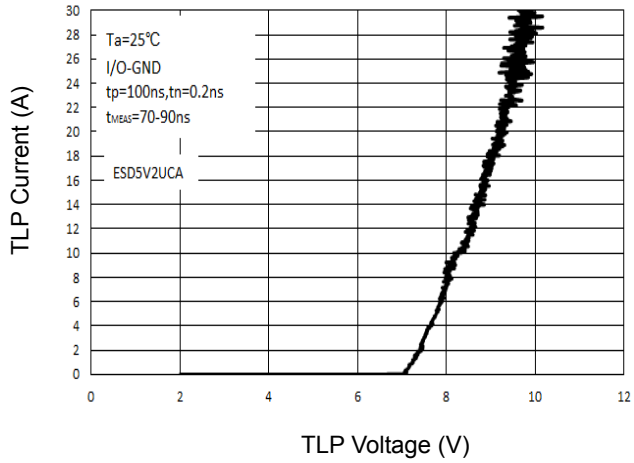
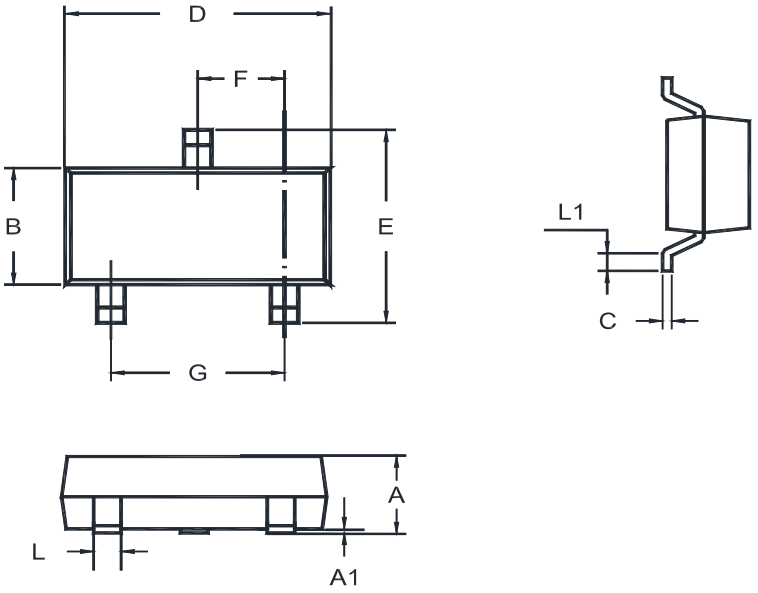


Fig. 5 TLP Curve

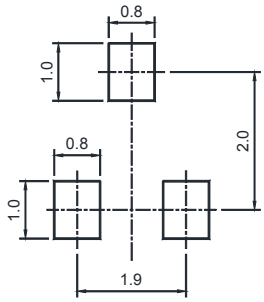


Package Outline (Dimensions in mm) SOT-23



Unit	A	A1	B	C	D	E	F	G	L	L1
mm	1.20 0.89	0.100 0.013	1.40 1.20	0.19 0.08	3.04 2.80	2.6 2.2	1.02 0.89	2.04 1.78	0.51 0.37	0.2 MIN

Recommended Soldering Footprint



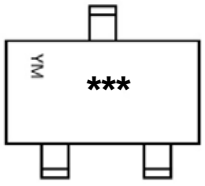
Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" *** " = Part No.

Type	Marking	Type	Marking	Type	Marking
ESD3V3UCA	2A1	ESD5V2UCA	2B1	ESD12UCA	2C1
ESD15UCA	2D1	ESD24UCA	2E1		



" YM " = Date Code Marking

" Y " = Year

" M " = Month

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Dated: 01/04/2022 Rev: 02