

1.Features

Low capacitance unidirectional fivefold ElectroStatic Discharge (ESD) protection diode arrays in small Surface-Mounted Device (SMD) plastic packages designed to protect up to five unidirectional signal lines from the damage caused by ESD and other transients.

3.Features

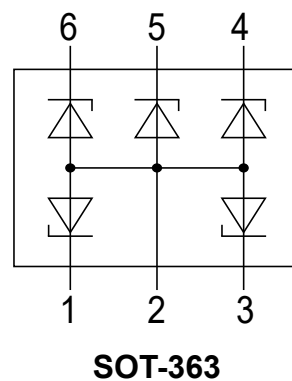
- ESD protection of up to five lines
- Low diode capacitance
- Max. peak pulse power: $P_{PP}=25W$
- Low clamping voltage: $V_{CL}=12V$

2.Applications

- Computers and peripherals
- Communication systems
- Audio and video equipment
- Portable electronics
- Cellular handsets and accessories
- Subscriber Identity Module (SIM) card protection

- Ultra low leakage current: $I_{RM}=5nA$
- ESD protection up to 20kV
- IEC61000-4-2; level4 (ESD)
- IEC61000-4-5 (surge); $I_{PP}=2.5A$

4.Pinning information





5. Quick reference data

$T_{amb}=25^{\circ}\text{C}$ unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
reverse stand off voltage	V_{RWM}					
PESD3V3L5UF						
PESD3V3L5UV					3.3	V
PESD3V3L5UY						
PESD5V0L5UF						
PESD5V0L5UV					5	V
PESD5V0L5UY						
diode capacitance	C_d	$V_R=0\text{V}$, $f=1\text{MHz}$				
PESD3V3L5UF						
PESD3V3L5UV				22	28	pF
PESD3V3L5UY						
PESD5V0L5UF						
PESD5V0L5UV				16	19	pF
PESD5V0L5UY						



6. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Parameter	Symbol	Conditions	Min	Typ	Max	Units
peak pulse power	P_{PP}	$t_p=8/20\mu s$ ①②			25	W
peak pulse current	I_{PP}	$t_p=8/20\mu s$ ①②			2.5	A
junction temperature	T_J				150	°C
ambient temperature	T_{amb}		-65		150	°C
storage temperature	T_{STG}		-65		150	°C

Notes:

- ① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.
- ② Measured from pin 1, 3, 4, 5 or 6 to pin 2.

7. ESD maximum ratings

$T_{amb}=25^{\circ}C$ unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
electrostatic discharge voltage	V_{ESD}	IEC 61000-4-2 (contact discharge) ①②			20	kV
		MIL-STD-883 (human body model)			10	kV

Notes:

- ① Device stressed with ten non-repetitive ESD pulses.
- ② Measured from pin 1, 3, 4, 5 or 6 to pin 2.

8. ESD standards compliance

Standard	Conditions
IEC 61000-4-2; level 4 (ESD)	> 15 kV (air); > 8 kV (contact)
MIL-STD-883; class 3 (human body model)	> 4 kV



9.1 Electrical Characteristic ($T_{amb}=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
reverse stand off voltage	V_{RWM}					
PESD3V3L5UF						
PESD3V3L5UV					3.3	V
PESD3V3L5UY						
PESD5V0L5UF						
PESD5V0L5UV					5	V
PESD5V0L5UY						
reverse leakage current						
PESD3V3L5UF						
PESD3V3L5UV	I_{RM}	$V_{RWM}=3.3\text{V}$		75	300	nA
PESD3V3L5UY						
PESD5V0L5UF						
PESD5V0L5UV		$V_{RWM}=5\text{V}$		5	25	nA
PESD5V0L5UY						
breakdown voltage		$I_R=1\text{mA}$				
PESD3V3L5UF	V_{BR}					
PESD3V3L5UV			5.3			V
PESD3V3L5UY						
PESD5V0L5UF						
PESD5V0L5UV			6.4			V
PESD5V0L5UY						



9.2 Electrical Characteristic ($T_{amb}=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
diode capacitance	C_d	$f=1\text{MHz}; V_R=0\text{V}$				
PESD3V3L5UF PESD3V3L5UV PESD3V3L5UY				22	28	pF
PESD5V0L5UF PESD5V0L5UV PESD5V0L5UY				16	19	pF
clamping voltage	V_{CL}	① ②				
PESD3V3L5UF PESD3V3L5UV PESD3V3L5UY		$I_{pp}=1\text{A}$			10	V
PESD5V0L5UF PESD5V0L5UV PESD5V0L5UY		$I_{pp}=2.5\text{A}$			12	V
PESD3V3L5UF PESD3V3L5UV PESD3V3L5UY		$I_{pp}=1\text{A}$			10	V
PESD5V0L5UF PESD5V0L5UV PESD5V0L5UY		$I_{pp}=2.5\text{A}$			12	V

Notes:

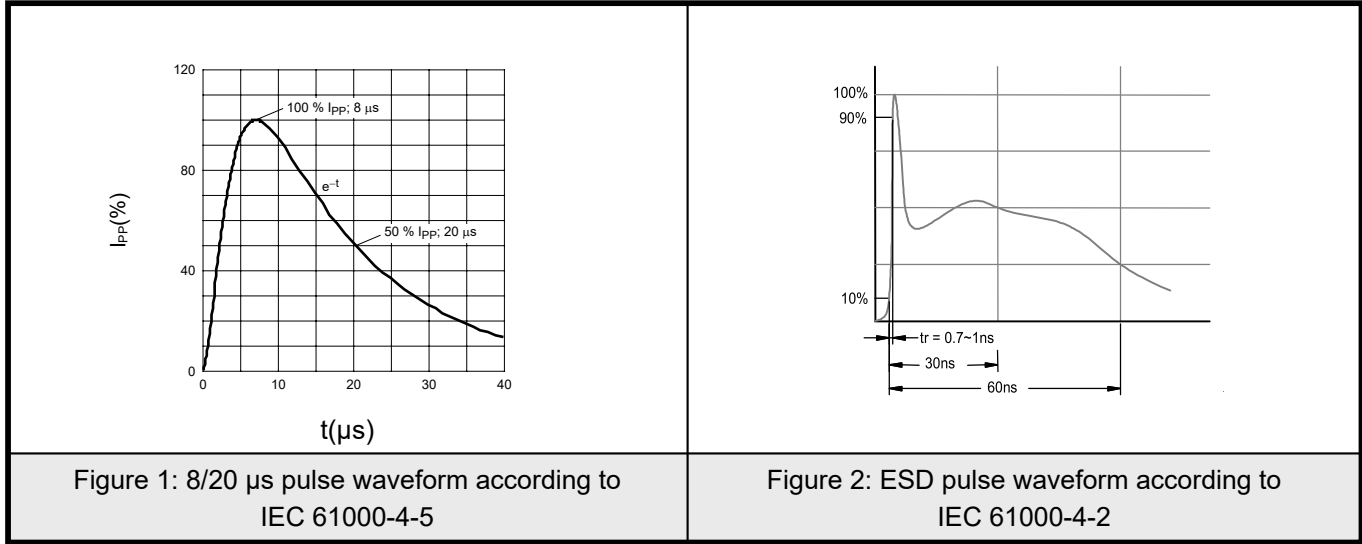
- ① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.
 ② Measured from pin 1, 3, 4, 5 or 6 to pin 2.



differential resistance	r _{dif}	I _R =1mA				
PESD3V3L5UF					200	Ω
PESD3V3L5UV						
PESD3V3L5UY						
PESD5V0L5UF					100	Ω
PESD5V0L5UV						
PESD5V0L5UY						

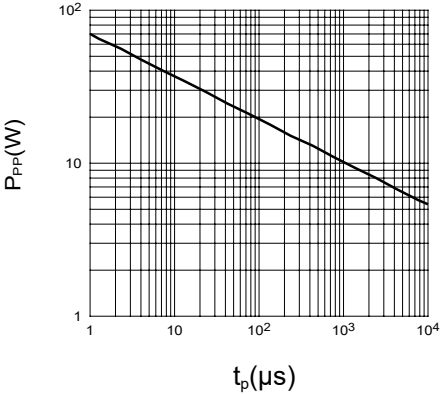
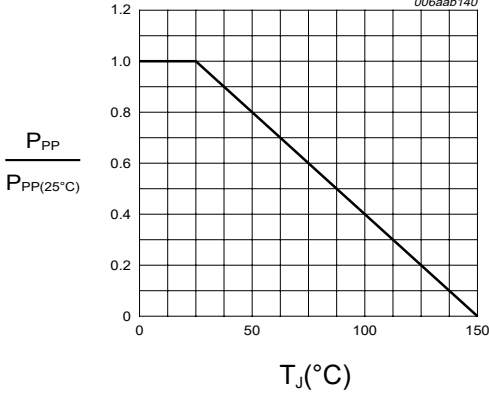
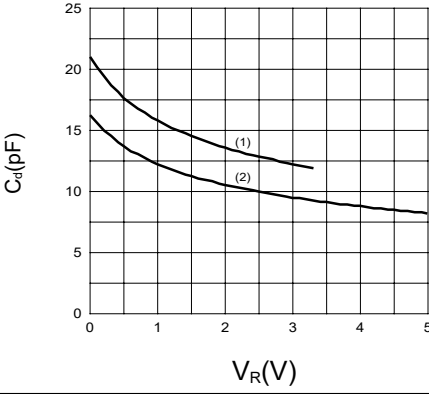
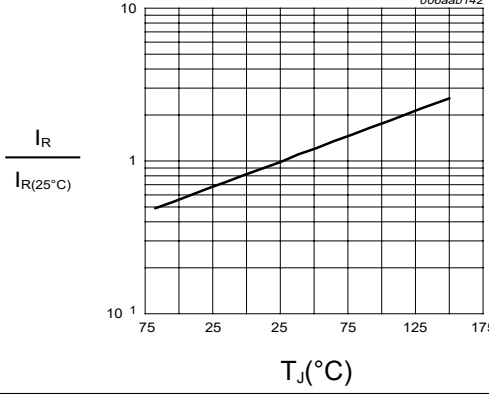
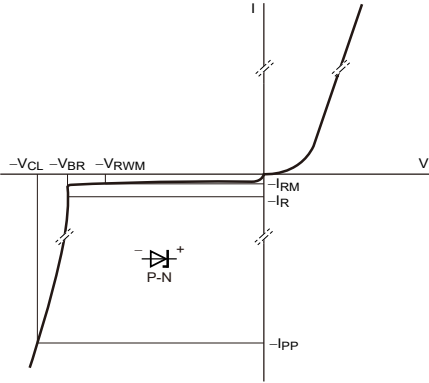


10.1Typical characteristic



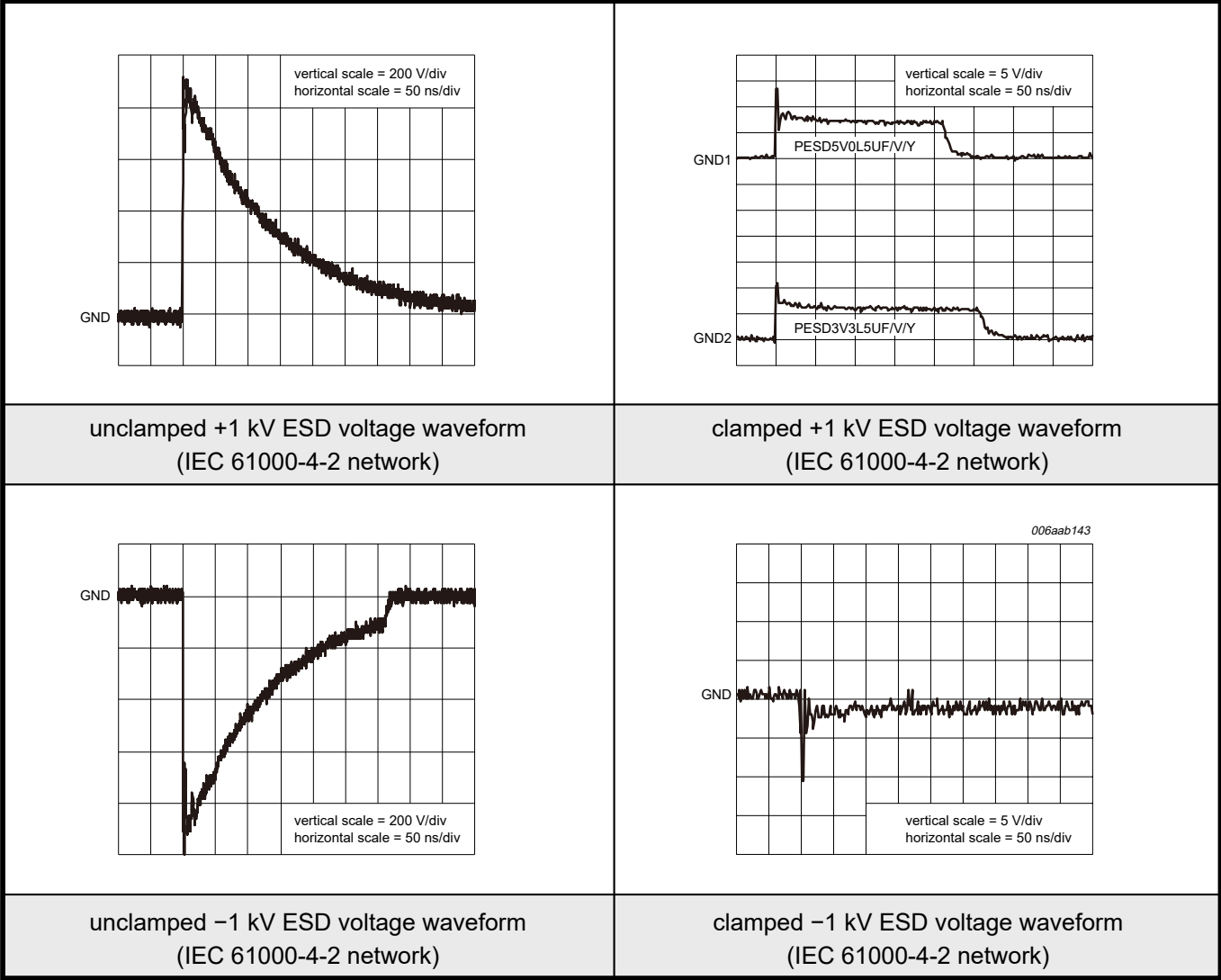


10.2Typical characteristic

	
Figure 3: Peak pulse power as a function of exponential pulse duration; typical values	Figure 4: Relative variation of peak pulse power as a function of junction temperature; typical values
	
Figure 5: Diode capacitance as a function of reverse voltage; typical values	Figure 6: Relative variation of reverse current as a function of junction temperature; typical values
	
Figure 7: V-I characteristics for a unidirectional ESD protection diode	

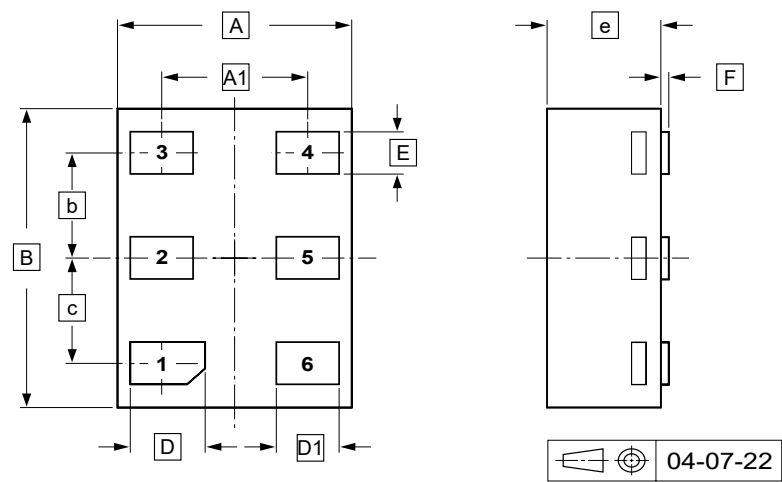


10.3Typical characteristic





11.1SOT-886 Package Outline Dimensions

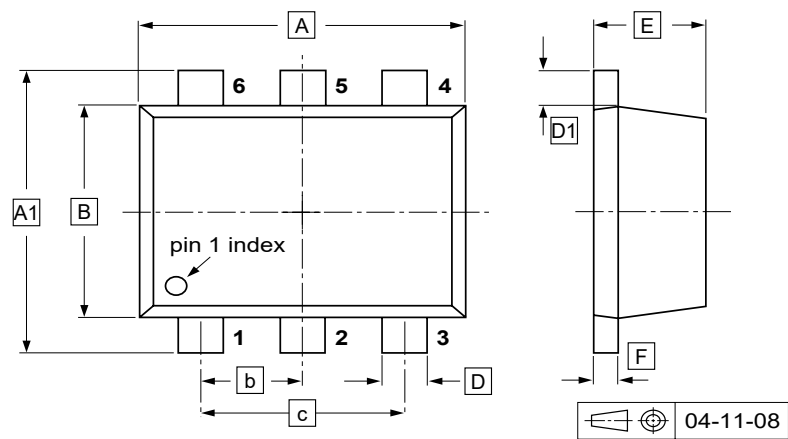


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	B	b	c	D	D1	E	e	F
Min	0.95	0.6	1.4	0.5	0.5	0.32	0.27	0.17	-	-
Max	1.05		1.5			0.40	0.35	0.25	0.50	0.04



11.2SOT-666 Package Outline Dimensions

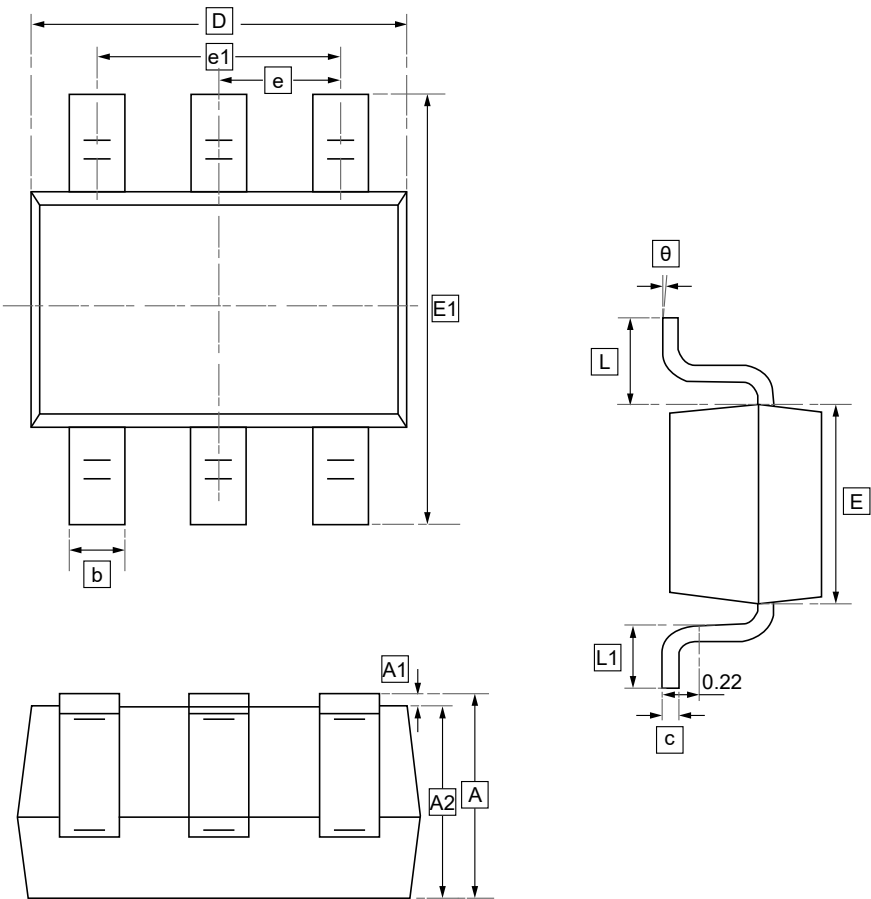


DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	B	b	c	D	D1	E	F
Min	1.5	1.5	1.1	0.5	1	0.17	0.1	0.5	0.08
Max	1.7	1.7	1.3			0.27	0.3	0.6	0.18



9.SOT-363 Package Outline Dimensions



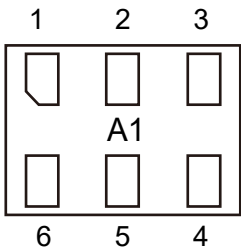
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	e1	L	L1
Min	0.900	0.000	0.900	0.150	0.080	2.000	1.150	2.150	0.65	1.200	0.525	0.260
Max	1.100	0.100	1.000	0.350	0.150	2.200	1.350	2.450	TYP	1.400	REF	0.460

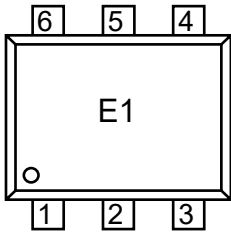
Symbol	θ
Min	0°
Max	8°



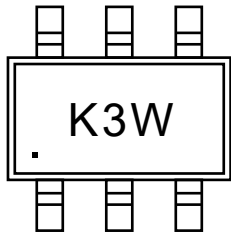
12.Ordering Information



bottom view
SOT-886



SOT-666



SOT-363

ww: Batch Code

Order Code	Marking	Package	Base QTY	Delivery Mode
UMW PESD3V3L5UF	A1	SOT-886	5000	Tape and reel
UMW PESD5V0L5UF	A2	SOT-886	5000	Tape and reel
UMW PESD3V3L5UV	E1	SOT-666	4000	Tape and reel
UMW PESD5V0L5UV	E2	SOT-666	4000	Tape and reel
UMW PESD3V3L5UY	K3W	SOT-363	3000	Tape and reel
UMW PESD5V0L5UY	K4t	SOT-363	3000	Tape and reel



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