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UNION SEMICONDUCTOR

www.union-ic.com

ESD Protection and EMI Filters Selection Guide

Company Profile

Who We Are

Founded in 2001, Union Semiconductor is a fabless integrated circuit design company, engaged in inventing, designing and marketing high performance linear and mixed-signal integrated circuits (ICs) for use in a variety of electronic equipment.

Union Semiconductor's products bridge the analog real world and digital world by detecting, measuring, amplifying, converting power supply and providing protection for electronic circuits.

Corporate Mission

Union Semiconductor's mission is to continuously develop high quality and innovative mixed signal IC solutions that add value to customers' electronics equipment worldwide.

Products and Applications

Our products include power supplies, power management circuits, analog switches, interface circuits, ESD protection ICs and EMI filters.

Union Semiconductor markets over 180 analog ICs for uses in a wide variety of electronic equipment. These include PCs and their peripherals, portable devices, instrumentation, test equipments and digital consumer electronics.

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EMI Filters

Audio/CRC EMI Filters

Part Number	Protected Lines	V _{RWM} (V) (Max)	R (Ω) (Typ)	C _J @ V _R =2.5V (pF)	f _{3db} (MHz) (Typ)	ESD (kV)		Package
						Contact	Air	
UM1002	2	5	1	15	-	±8	±15	SOT23-6
UM4401	4	5	100	10	150	±8	±15	DFN8 2.1×1.6
UM4411	4	5	100	10	150	±8	±15	DFN8 1.7×1.3
UM6401	6	5	100	10	150	±8	±15	DFN12 3.0×1.6
UM6411	6	5	100	10	150	±8	±15	DFN12 2.5×1.3
UM8401	8	5	100	15	150	±8	±15	DFN16 4.0×1.6
UM8411	8	5	100	10	150	±8	±15	DFN16 3.3×1.3

CLC EMI Filters

Part Number	Protected Lines	V _{RWM} (V) (Max)	L (nH) (Typ)	DCR (Ω) (Typ)	C _J @ V _R =2.5V (pF)	f _{3db} (MHz) (Typ)	ESD (kV)		Package
							Contact	Air	
UM4601	4	5	17	10	15	150	±8	±15	DFN8 2.0×2.0
UM4611	4	5	17	10	15	150	±8	±15	DFN8 1.7×1.3
UM8601	8	5	17	10	15	150	±8	±15	DFN16 4.0×1.6
UM8611	8	5	17	10	15	150	±8	±15	DFN16 3.3×1.3
UM4501	4	5	17	10	12	250	±8	±15	DFN8 2.0×2.0
UM4511	4	5	17	10	12	250	±8	±15	DFN8 1.7×1.3
UM6501	6	5	17	10	12	250	±8	±15	DFN12 3.0×1.6
UM8501	8	5	17	10	12	250	±8	±15	DFN16 4.0×1.6
UM8511	8	5	17	10	12	250	±8	±15	DFN16 3.3×1.3
UM4701	4	5	19	18	12	150	±8	±15	DFN8 2.0×2.0
UM4711	4	5	19	18	12	150	±8	±15	DFN8 1.7×1.3
UM8701	8	5	19	18	12	150	±8	±15	DFN16 4.0×1.6
UM8711	8	5	19	18	12	150	±8	±15	DFN16 3.3×1.3

*: Future product, contact factory.

Product Selection Guide

ESD Protection

USB Port and Ethernet Port Protection

Part Number	Description	Protected Lines	V _{RWM} (V) (Max)	C _J @ V _R =0V, I/O Pin to GND (pF) (Max)	ESD (kV)		Package
					Contact	Air	
UM5202EEDF	Unidirection	2	5	2	±8	±15	SOT143
UM5204EEAF	Unidirection	4	5	2	±8	±15	SOT363
UM5204EEBF	Unidirection	4	5	2	±8	±15	SOT563
UM5204EECF	Unidirection	4	5	2	±8	±15	SOT23-6
UM5304EEAF	Unidirection	4	5	2	±8	±15	SOT363
UM5304EEBF	Unidirection	4	5	2	±8	±15	SOT563
UM5304EECF	Unidirection	4	5	2	±8	±15	SOT23-6
*UM5404EECF	Unidirection for Ethernet 10/100	4	5	2	±8	±15	SOT23-6

General Purpose Protection

Part Number	Description	Protected Lines	V _{RWM} (V) (Max)	C _J (pF) @ V _R =0V (Typ)	ESD (kV)		Package
					Contact	Air	
UM5055	Unidirection	1	5	40	±8	±15	SOD523
UM5059	Unidirection	1	5	40	±8	±15	DFN2 1.0×0.6
UM5059T	Unidirection	1	5	90	±30	±30	DFN2 1.0×0.6
UM5060	Bi-direction	1	5	40	±30	±30	SOD523
UM5080	Bi-direction	1	5	25	±30	±30	DFN2 1.0×0.6
UM5080T	Bi-direction	1	5	45	±30	±30	DFN2 1.0×0.6
UESD6V8L1F	Unidirection	1	5	17	±8	±15	DFN2 1.0×0.6
UM5051DA	Unidirection	1	5	19	±25	±30	DFN2 0.6×0.3
UM5052DA	Bi-direction	1	5	7	±30	±30	DFN2 0.6×0.3
SM05	Unidirection	2	5	50	±8	±15	SOT23-3
UM5062	Unidirection	2	5	40	±8	±15	DFN3 1.4×1.1
UESD6V8S2B	Unidirection	2	5	40	±8	±15	SOT523
UESD54B	Unidirection	4	5	40	±8	±15	SOT353
UESD55B	Unidirection	4	5	40	±8	±15	SOT563
UESD64B	Unidirection	4	5	40	±8	±15	SOT553
UESD16V8S4C	Unidirection	4	12	20	±8	±15	SOT23-6
UESD6V8L4A	Unidirection	4	5	20	±8	±15	SOT353
UESD6V8L4B	Unidirection	4	5	20	±8	±15	SOT553
UESD56B	Unidirection	5	5	40	±8	±15	SOT563
UESD6V85CT36	Unidirection	5	5	40	±8	±15	SOT363
UESD6V8L5A6	Unidirection	5	5	20	±8	±15	SOT363
UESD6V8L5B	Unidirection	5	5	18	±8	±15	SOT563
UESD57B	Unidirection	6	5	40	±8	±15	DFN6 1.6×1.6

*: Future product, contact factory.

Product Selection Guide

ESD Protection

High and Medium Working Voltage

Part Number	Description	Protected Lines	V _{RWM} (V) (Max)	C _J @ V _R =0V (pF) (Typ)	ESD (kV)		Package
					Contact	Air	
SM12	Unidirection	2	12	20	±8	±15	SOT23-3
SM15	Unidirection	2	15	20	±8	±15	SOT23-3
UM5075	Unidirection	1	7	40	±8	±15	SOD523
UM5079	Unidirection	1	7	40	±8	±15	DFN2 1.0×0.6
UM50125	Unidirection	1	12	20	±30	±30	SOD523
UM50129	Unidirection	1	12	20	±30	±30	DFN2 1.0×0.6
UESD16V8S4C	Unidirection	4	12	20	±30	±30	DFN2 1.0×0.6

*: Future product, contact factory.

ESD Protection

Single Line ESD Protection Diode in DFN0603 Package

UM5051DA/UM5052DA

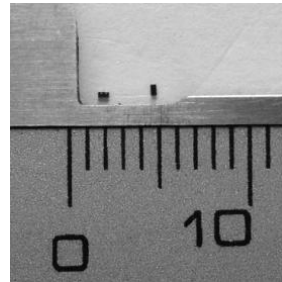
Key Features

- UM5051DA ESD Protection Class:
IEC 61000-4-2 ±30kV (Air), ±25kV (Contact)
- UM5052DA ESD Protection Class:
IEC 61000-4-2 ±30kV (Air), ±30kV (Contact)
- Protect One I/O or Power Line
- Low Clamping Voltage
- Stand-Off Voltage: 5V
- Low Leakage Current
- Ultra Small 0.6mm×0.3mm Outline

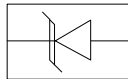
Applications

- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops and Servers
- Portable Instrumentations
- Digital Cameras
- MP3 Players

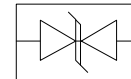
The UM5051DA/5052DA ESD protection diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebook computers and PDAs. The devices are available in DFN2 0.6mm×0.3mm package with working voltage of 5 volt. It gives designer the flexibility to protect one unidirectional (UM5051DA) or one bi-directional (UM5052DA) line in applications where arrays are not practical. Additionally, it may be “sprinkled” around the board in applications where board space is at a premium.



Ultra Small DFN2 0.6×0.3 Package



UM5051DA Pin Configuration



UM5052DA Pin Configuration

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