

EGA Series



FEATURES

- Protection against ESD voltages and currents (IEC61000-4-2 Level 4)
- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.2pF typical)
- Extremely low leakage current
- Bi-directional device
- SMD (Surface Mount Device)
- Zero signal distortion
- Compact size for EIA 0201/0402/0603

APPLICATIONS

- Antenna circuit, USB2.0/3.0, IEEE-1394, DVI, HDMI

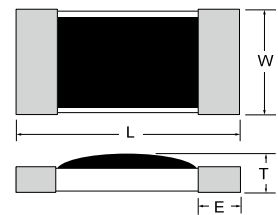
EXPLANATION OF PART NUMBER

EGA	1	0201	V05	B0
1	2	3	4	5

- 1: ESDGUARD Series
- 2: Element:1 element
- 3: Chip size
- 4: Rated voltage
- 5: B0: Model code

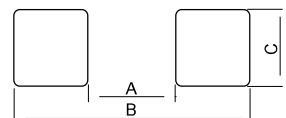
DIMENSION Unit: mm

EIA	L	W	T	E
0201	0.63±0.05	0.30±0.03	0.23±0.05	0.165±0.05
0402	1.00±0.10	0.50±0.10	0.34±0.10	0.20±0.15
0603	1.60±0.10	0.85±0.15	0.51±0.05	0.30±0.20



SOLDER LAND INFORMATION Unit: mm

Size (EIA)	A	B	C
0201	0.35	1.05	0.35
0402	0.50	1.50	0.50
0603	0.75	2.25	0.75



STANDARD PACKING

Size (EIA)	0201	0402	0603
Quantity (pcs/reel)	15,000	10,000	4,000

SPECIFICATIONS

Characteristic	Symbol	Unit	EGA10201V05B0
			Typical.
Rated voltage	VDC	V	5
Leakage current	IL	µA	0.01
Trigger voltage	Vt	V	250
Clamping voltage	Vc	V	30
Capacitance, @1MHz	Cp	pF	0.2
Response time		ns	<1
ESD voltage capability, Contact discharge mode		kV	8
ESD voltage capability, Air discharge mode		kV	15
ESD pulse withstand		Pulses	1000

Rated voltage - IL measurement rated voltage
 Vt – Measurement by using Transmission Line Pulse (TLP)
 Vc – Measurement by using Transmission Line Pulse (TLP)
 Cp – Device capacitance measured with 1Vrms

EGA Series



SPECIFICATIONS

			EGA10402V05B0	EGA10402V12B0	EGA10402V24B0	EGA10402V30B0
Characteristic	Symbol	Unit	Typical.	Typical.	Typical.	Typical.
Rated voltage	VDC	V	5	12	24	30
Leakage current	IL	μA	0.01	0.01	0.01	0.01
Trigger voltage	Vt	V	300	300	300	300
Clamping voltage	Vc	V	30	30	30	30
Capacitance, @1MHz	Cp	pF	0.2	0.2	0.2	0.2
Response time		ns	<1	<1	<1	<1
ESD voltage capability, Contact discharge mode		kV	8	8	8	8
ESD voltage capability, Air discharge mode		kV	15	15	15	15
ESD pulse withstand		Pulses	1000	1000	1000	1000

			EGA10603V05B0	EGA10603V12B0	EGA10603V24B0	A10603V30B0
Characteristic	Symbol	Unit	Typical.	Typical.	Typical.	Typical.
Rated voltage	VDC	V	5	12	24	30
Leakage current	IL	μA	0.01	0.01	0.01	0.01
Trigger voltage	Vt	V	300	300	300	300
Clamping voltage	Vc	V	30	30	30	30
Capacitance, @1MHz	Cp	pF	0.2pF	0.2pF	0.2pF	0.2pF
Response time		ns	<1	<1	<1	<1
ESD voltage capability, Contact discharge mode		kV	8	8	8	8
ESD voltage capability, Air discharge mode		kV	15	15	15	15
ESD pulse withstand		Pulses	1000	1000	1000	1000

Rated voltage - IL measurement rated voltage

Vt – Measurement by using Transmission Line Pulse (TLP)

Vc – Measurement by using Transmission Line Pulse (TLP)

Cp – Device capacitance measured with 1Vrms

EGA Array Series



FEATURES

- Protection against ESD voltages and currents (IEC61000-4-2 Level 4)
- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.25pF typical)
- Extremely low leakage current
- Bi-directional device
- SMD (Surface Mount Device)
- Zero signal distortion
- Compact size for EIA 1206

APPLICATIONS

- Antenna circuit, USB2.0/3.0, IEEE-1394, DVI, HDMI

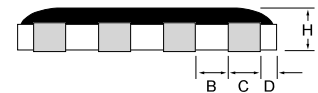
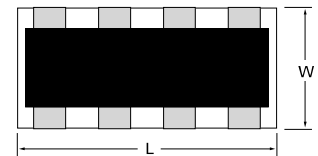
EXPLANATION OF PART NUMBER

EGA	4	1206	V12	B0
1	2	3	4	5

- 1: ESDGUARD Series
- 2: Elements: 4 elements
- 3: Chip size
- 4: Rated voltage
- 5: B0: Model code

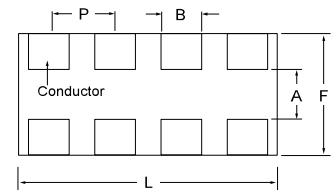
DIMENSION Unit: mm

EIA	L	W	H	B	C	D
1206	3.20±0.10	1.60±0.10	0.50±0.10	0.40±0.20	0.40±0.20	0.20±0.10



SOLDER LAND INFORMATION Unit: mm

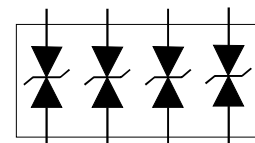
EIA	L	F	P	A	B
1206	3.20	2.20	0.80 typ.	1.00	0.50



STANDARD PACKING

Size (EIA)	1206
Quantity (pcs/reel)	5,000

Equivalent Circuit



SPECIFICATIONS

Characteristic	Symbol	Unit	EGA41206V12B0 Typical.
Rated voltage	VDC	V	12
Leakage current	IL	µA	0.01
Trigger voltage	Vt	V	300
Clamping voltage	Vc	V	30
Capacitance, @1MHz	Cp	pF	0.25
Response time		ns	<1
ESD voltage capability, Contact discharge mode		kV	8
ESD voltage capability, Air discharge mode		kV	15
ESD pulse withstand		Pulses	1000

Rated voltage - IL measurement rated voltage
 Vt – Measurement by using Transmission Line Pulse (TLP)
 Vc – Measurement by using Transmission Line Pulse (TLP)
 Cp – Device capacitance measured with 1Vrms

EGA Array Series



FEATURES

- Protection against ESD voltages and currents (IEC61000-4-2 Level 4)
- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.1pF typical)
- Extremely low leakage current
- SMD (Surface Mount Device)
- Zero signal distortion
- Lead Free, RoHS Compliance

APPLICATIONS

- Antenna circuit, USB2.0/3.0, IEEE-1394, DVI, HDMI

EXPLANATION OF PART NUMBER

TVU	12	4	0R1	A
1	2	3	4	5

- 1: TVU
- 2: Rated voltage
- 3: Channel: 4 channels
- 4: Capacitance
- 5: Chipsize Chip size

DIMENSION Unit: mm

L	W	T	B	C	D	E
2.50±0.10	1.00±0.10	0.50±0.10	0.20±0.10	0.30±0.05	0.20±0.05	0.50±0.05

SOLDER LAND INFORMATION Unit: mm

Y	G	Z	X	X1	P	P1	C
0.60	0.20	1.40	0.20	0.30	0.50	1.00	0.80

EQUIVALENT CIRCUIT

Pin	Identification
1, 2, 4, 5	Data Lines
6, 7, 9, 10	Data Lines (No Internal Connection)
3, 8 (GND)	Ground

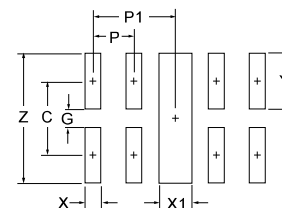
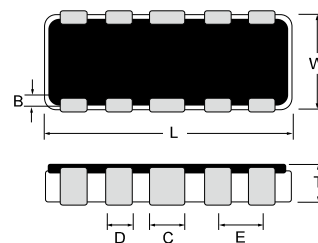
STANDARD PACKING

Size (mm)	2510
Quantity (pcs/reel)	5,000

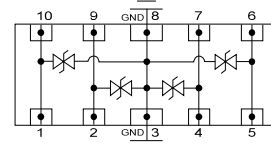
SPECIFICATIONS

			TVU1240R1A
Characteristic	Symbol	Unit	Typical.
Rated voltage	VDC	V	12
Leakage current	IL	µA	0.01
Trigger voltage	Vt	V	300
Clamping voltage	Vc	V	30
Capacitance, @1MHz	Cp	pF	0.1
Response time		ns	<1
ESD voltage capability, Contact discharge mode		kV	10
ESD voltage capability, Air discharge mode		kV	15
ESD pulse withstand		Pulses	1000

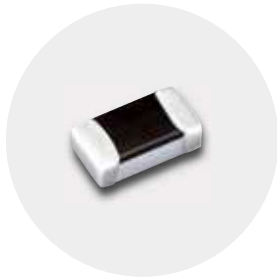
Rated voltage - IL measurement rated voltage
 Vt – Measurement by using Transmission Line Pulse (TLP)
 Vc – Measurement by using Transmission Line Pulse (TLP)
 Cp – Device capacitance measured with 1Vrms



Equivalent Circuit



EGA AM Series



FEATURES

- Qualified based on AEC-Q200
- For RoHS Compliance.
- Meet IEC61000-4-2 Level 4 standard
- Extremely quick response time (<1ns)
- Extremely low capacitance (0.2pF typical)
- Extremely low leakage current
- Bi-directional device
- More than 1000 pulses ESD withstand capability
- Compact size for EIA 0402/0603

APPLICATIONS

- USB 3.0, HDMI, Displayport, MIPI, LVDS, MDDI, DVI, RGB

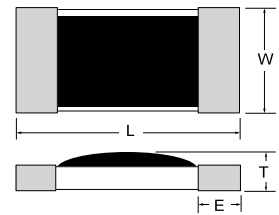
EXPLANATION OF PART NUMBER

EGA	1	0603	V24	AM
1	2	3	4	5

- 1: ESDGUARD Series
- 2: Element: 4 element
- 3: Chip size
- 4: Rated voltage
- 5: AM: Automotive series

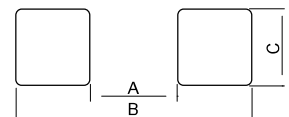
DIMENSION Unit: mm

EIA	L	W	T	E
0402	1.00±0.10	0.50±0.10	0.34±0.10	0.20±0.15
0603	1.60±0.10	0.85±0.15	0.51±0.05	0.30±0.20



SOLDER LAND INFORMATION Unit: mm

Size (EIA)	A	B	C
0402	0.50	1.50	0.50
0603	0.75	2.25	0.75



STANDARD PACKING

Size (EIA)	0402	0603
Quantity (pcs/reel)	10,000	5,000

SPECIFICATIONS

Characteristic	Symbol	Unit	EGA10402			EGA10603		
			V05	V12	V24	V05	V12	V24
Rated voltage (max)	VDC	V	5	12	24	5	12	24
Leakage current	IL	µA	0.01					
Trigger voltage	Vt	V	300V typ.					
Clamping voltage	Vc	V	30V typ.					
Capacitance, @1MHz	Cp	pF	0.2 typ.					
Response time		ns	<1					
ESD voltage capability, IEC 61000-4-2 Contact discharge mode		Kv	8					
ESD voltage capability, IEC 61000-4-2 Air discharge mode		Kv	15KV					
ESD withstand pulses		Pulses	1000 typ.					

Rated voltage - IL measurement rated voltage
 Vt – Measurement by using Transmission Line Pulse (TLP)
 Vc – Measurement by using Transmission Line Pulse (TLP)
 Cp – Device capacitance measured with 1Vrms

