Ultra Low Capacitance ESD Protection -ESD0402**P***

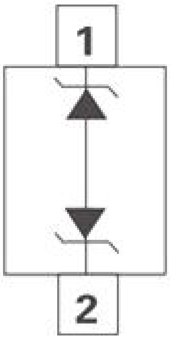
Description

The ESD0402**P*** in a 0402 package and will protect one bidirectional line. These devices are designed to portable applications such as cell phones, notebook computers, and PDA’s. They offer superior electrical characteristics ultra low capacitance The ESD0402**P** are designed to protect sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD),and other voltage induced transient events.

Feature

- Case : 0402 package
- Ultra low capacitance
- Surface Mount Devices
- Compatible with IEC 61000-4-2(ESD) :Air 15KV , Contact 8KV
- Compatible with IEC 61000-4-4(EFT) :40A ,5/50 nS

Schematic & PIN Configuration



Applications

- USB3.0/USB2.0
- Smart Phones
- External Storage
- High speed data transmission line

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
IEC61000-4-2 (Contact)	V_{ESD}	>8	KV
IEC61000-4-2 (Air)	V_{ESD}	>15	KV
Lead Soldering Temperature	T_L	260 (10 sec)	° C
Operating Temperature	T_J	-40 to 85	° C
Storage Temperature Range	T_{STG}	-40 to 85	° C

Electrical Characteristics (T =25° C)

ESD040205P015

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	$V_R = V_{RWM}$			1	µ A
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			30	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.15		pF

ESD040208P030

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				8.0	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	$V_R = V_{RWM}$			1	µ A
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			45	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.30		pF

ESD040212P060

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				12	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	$V_R = V_{RWM}$			1	µ A
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			50	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.60		pF

ESD040215P080

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				15	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	V_R =V_{RWM}			1	µA
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			60	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.80		pF

ESD040218P080

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				18	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	V_R =V_{RWM}			1	µA
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			65	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.80		pF

ESD040224P080

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				24	V
Trigger voltage(VT)	V_T			300		V
Reverse Leakage Current	I_R	V_R =V_{RWM}			1	µA
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20µs			80	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.80		pF

Rating & Characteristic Curves

Figure 1- Insertion Loss I/O to GND

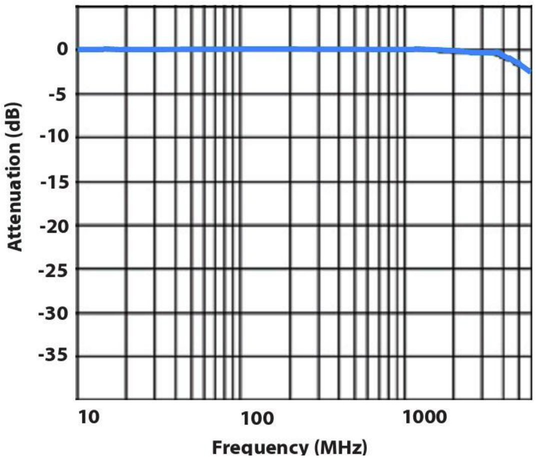
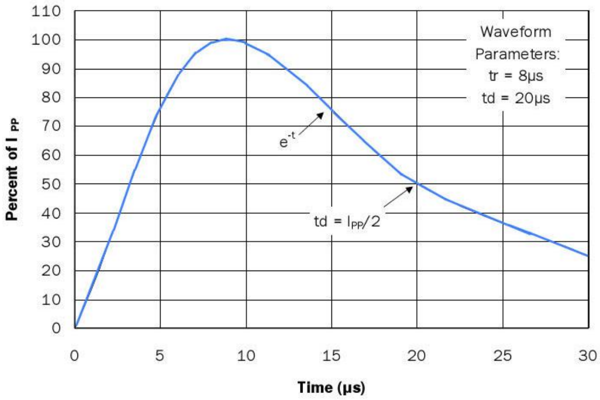
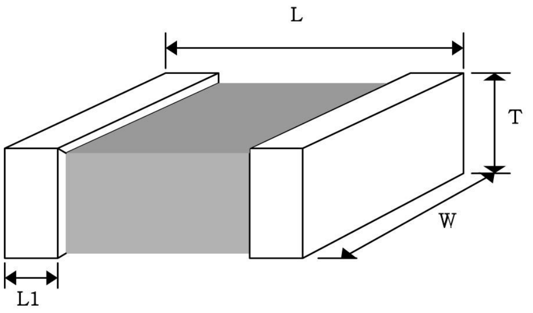


Figure 2- Pulse Waveform



PACKAGE OUTLINE DIMENSIONS



CODE	DIMENSION(mm)			
	L	W	T	L1
0402	1.0±0.05	0.5±0.05	0.5±0.05	0.2±0.15/-0.1

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.