➢ General Description

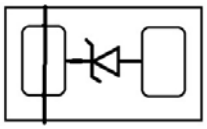
The PAE0551EUCR is designed with latest technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

➢ Feature

- ●Single-channel ESD protection
- ●Stand-off Voltage: 5 V
- ●Replacement for MLV (0402)
- ●Protects I/O Port
- ●Ultralow capacitance 0.5pf
- ●Low Leakage
- ●Response Time is < 1 ns
- ●RoHS Compliant
- ●Meets MSL 1 Requirements
- ●Reliable silicon device avalanche breakdown Structure

➢ DFN-1006

PIN 1  PIN 2

➢ Application

- ●USB(2.0/3.0/3.1)
- ●Cell phone handsets and accessories
- ●Personal Digital Assistants (PDAs)
- ●Portable Instrumentation
- ●Digital Cameras

➢ Protection solution to meet

- ●IEC61000-4-2 (ESD) ±15 kV (contact), ±15kV (air)
- ●IEC61000-4-4 (EFT) 40A (5/50ns)

➢ Maximum Ratings (T_A=25°C Unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD Rating per IEC61000-4-2： Contact Air		15 15	KV
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-55 ~ 125	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

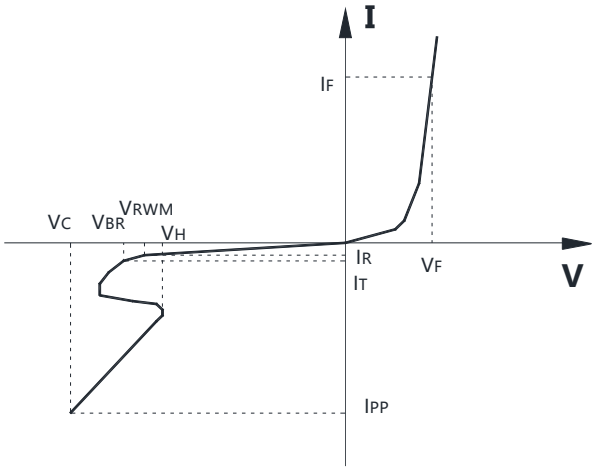
1. Non-repetitive current pulse, per Figure 1.

➢ Electrical Characteristics (T_A=25°C Unless otherwise specified)

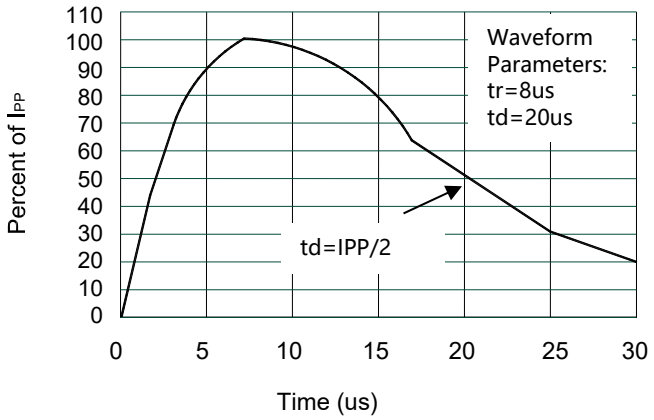
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage				5	V
V_{BR}	Reverse Breakdown Voltage	I_T = 0.1mA,	6			V
V_F	Forward Voltage	I_T =10mA,		0.75	0.9	V
I_R	Reverse Leakage Current	V_{RWM} =5V,			0.5	μA
V_C	Clamping Voltage	I_{PP} = 1A			4.5	V
		I_{PP} =4A		3.8	5.6	V
R_{dyn}	dynamic resistance			0.46		Ω
C_J(2)	Junction Capacitance	V_{IN} = 0V, f = 1MHz,		0.5	0.65	pF
		V_{IN}=0V, f = 1GHz,		0.5	0.65	pF

Junction capacitance is measured in VR=0V,F=1MHz

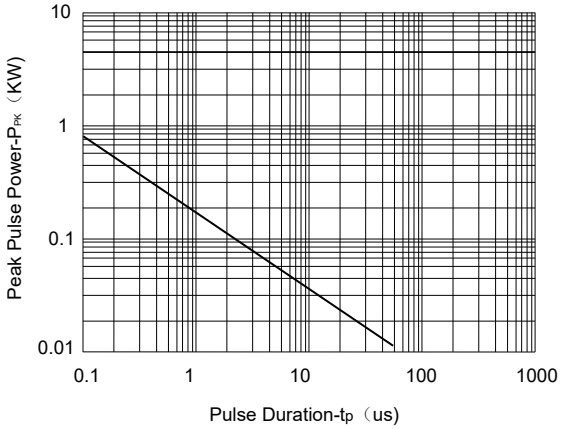
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



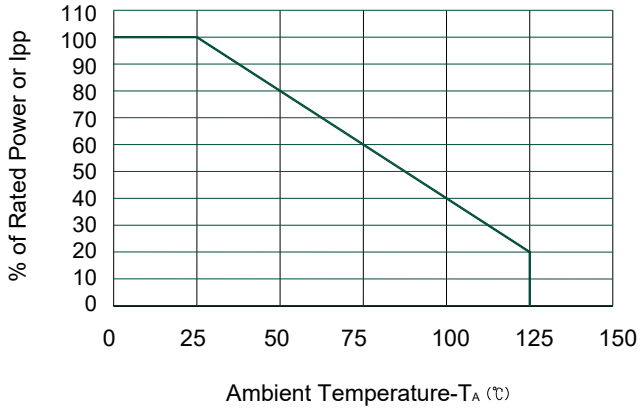
➢ Typical Characteristics



Pulse Waveform



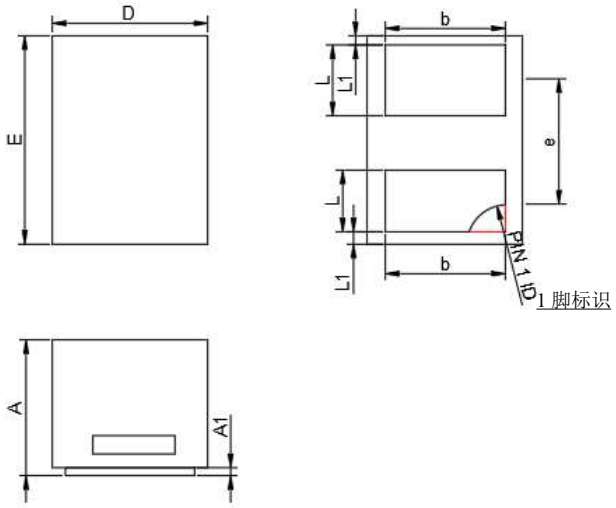
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve

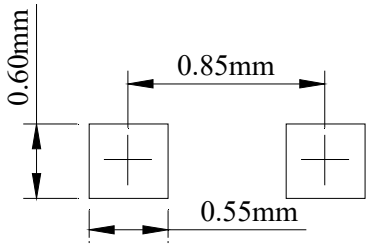
➢ Package Information (DFN1006)

Case Material: Molded Plastic. UL Flammability

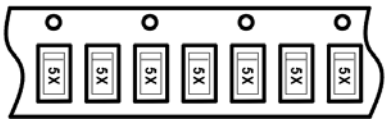


DIM	Millimeters	
	Min	Max
A	0.37	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.25	0.60
e	0.65TYP	
L	0.15	0.35
L1	0.05REF	

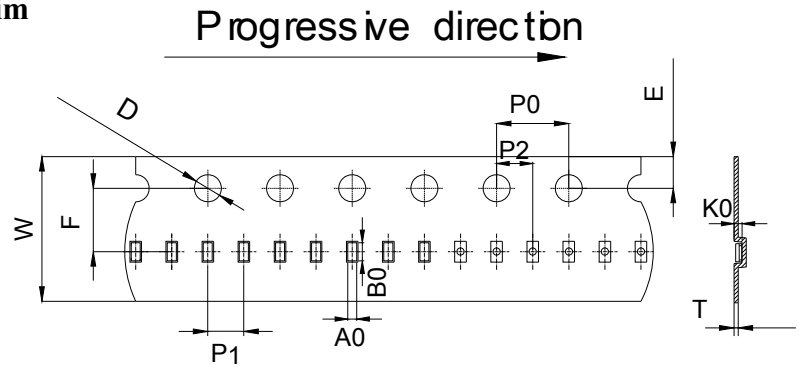
Recommended Pad outline



Device Orientation in Tape



DFN1006 Reel Dim



PACKAGE	W	E	F	P0	D	P2	P1	T	A0	B0	K0
DFN1006	8mm ±0.1	1.75mm ±0.1	3.5mm ±0.05	4mm ±0.1	1.5mm ±0.1	2mm ±0.05	2mm ±0.1	0.23mm ±0.02	0.67mm ±0.05	1.2mm ±0.05	0.55mm ±0.05

➢ Ordering Information

Part Number	Description	Quantity
PAE0551EUCR	DFN1006 Reel	10000 pcs

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