

Description

The ALD05FU is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time. The ALD05FU suited for use in cellular phones, portable device, digital cameras, power supplies and many other portable applications.



Features

- IEC 61000-4-2 (ESD)
 - ±15kV Contact Discharge
 - ±20kV Air Discharge
- IEC 61000-4-5 (Lightning)
 - 3A (8/20us)
- IEC 61000-4-4 EFT Protection
 - 40A (5/50ns)
- IEC-Q101 reliability standard
- Halogen free and RoHS compliant
- Protects one directional I/O line
- Transient protection for high-speed data lines
- Low clamping voltage
- Low leakage current

Mechanical Data

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants
- Notebooks / Desktops / Servers
- Portable Instrumentation
- Peripherals & Pagers

Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
ALD05FU	DFN1006-2L	D	Halogen free	Tape & Reel	10,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

Pin Configuration and Functions

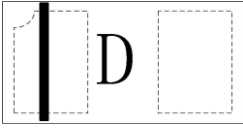
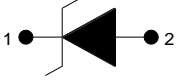
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	GND	Connect to GND		

Table-2 Pin configuration

Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P_{pk}	-	60	W
Peak pulse current (tp=8/20us)@25°C	I_{PP}	-	4	A
ESD (IEC61000-4-2 air discharge) @25°C	V_{ESD}	-	±8	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V_{ESD}	-	±15	kV
Junction temperature	T_J	-	125	°C
Operating temperature	T_{OP}	-40	125	°C
Storage temperature	T_{STG}	-55	150	°C
Lead temperature	T_L	-	260	°C

Table-3 Absolute Maximum rating

Electrical Characteristics

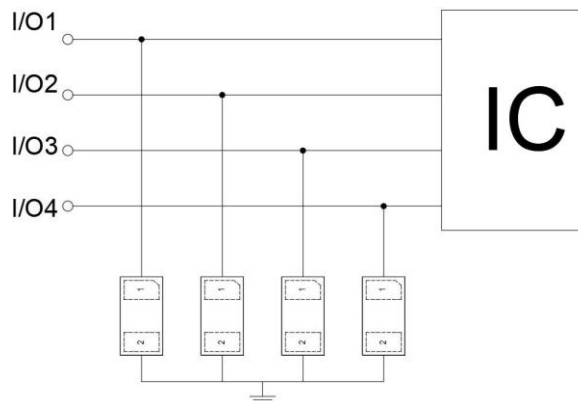
At TA = 25°C unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	6.5			V
Reverse Leakage Current	I_R	$V_{RWM}=5V$			1	μA
Clamping Voltage	V_C	$I_{PP}=1A; t_p=8/20\mu s$		9.0		V
Clamping Voltage	V_C	$I_{PP}=3A; t_p=8/20\mu s$		11.0		V
Junction Capacitance	C_J	I/O to GND; $V_R=0V; f=1MHz$		0.3		pF

Table-4 Electrical Characteristics

Typical Application

Typical Interface Application



Ratings and Characteristic Curves (TA =25°C unless otherwise noted)

Figure 1. Pulse rating curve

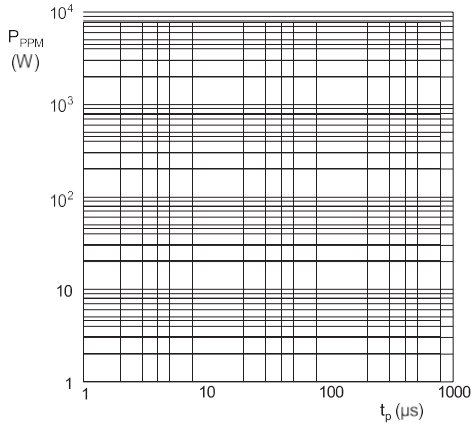


Figure 2 Peak pulse power derating curve

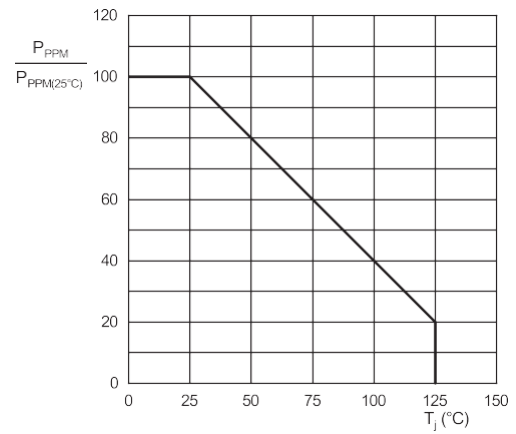


Figure 3 Pulse waveform

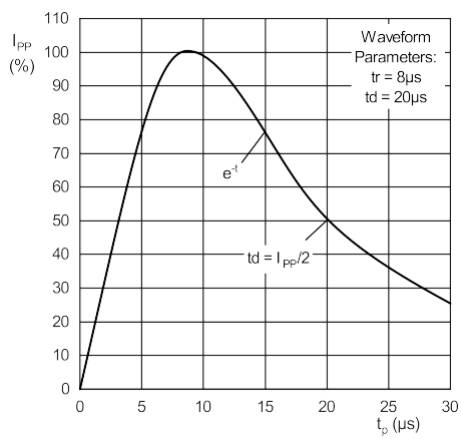
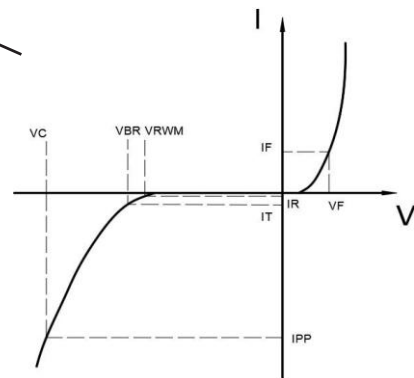
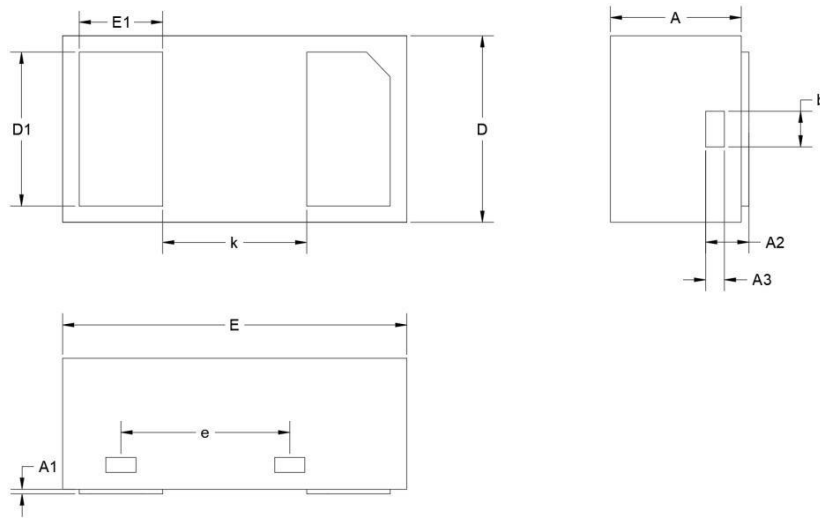


Figure 4 Parameters



Dimension

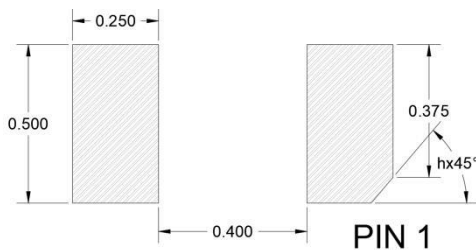


Units in millimeters

Symbol	Min.	Nom.	Max.
A	0.350	0.450	0.550
A1	0.000	0.020	0.050
A2	0.077	0.127	0.207
A3	0.013	0.063	0.113
b	0.070	0.120	0.200
D	0.500	0.600	0.700
D1	0.400	0.500	0.600
E	0.900	1.000	1.100
E1	0.150	0.250	0.350
e	0.310	0.410	0.560
k	0.300	0.400	0.500

Table-5 product dimensions

Recommended Land Pattern



Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference only