

## DESCRIPTION

The unidirectional TVS arrays are designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage induced transient events. They are designed for use in applications where board space is at a premium. They will protect up to five lines. They are unidirectional devices and may be used on lines where the signal polarities are above ground. TVS diodes are solid-state devices designed specifically for transient suppression.

They feature large cross-sectional area junctions for conducting high transient currents. They offer desirable characteristics for board level protection including fast response time, low and clamping voltage, and no device degradation. The devices may be used to meet the immunity requirements of IEC61000-4-2, level 4. The size SOT-563 package (1.6×1.6mm) makes them ideal for use in portable electronics such as cell phones, PDA's, notebook computers, and digital cameras.

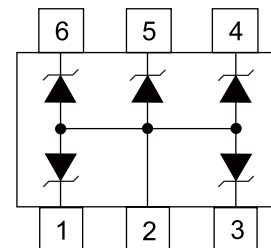


**HBM : ±30kV**  
**Air Mode : ±30kV**



## SPECIFICATION FEATURES

- IEC61000-4-2 ESD ±30KV Air, ±30KV contact compliance
- SOT-563 (1.6×1.6mm) surface mount package
- Protects five I/O lines
- Peak power dissipation of 100W under 8/20µs waveform
- Working voltage : 5V
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology



LAT56A05L05

## APPLICATIONS

- Cell phone handsets and accessories
- Microprocessor based equipment
- Personal digital assistants (PDA's) and Pagers
- Desktops PC and Servers
- Notebook, Laptop, and Palmtop computers
- Portable instrumentation
- Peripherals
- MP3 players

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	Ppp	100	W
ESD voltage (HBM contact)	V <sub>ESD</sub>	±30	KV
ESD voltage (AIR contact)		±30	
Lead soldering temperature	T <sub>L</sub>	260	°C
Storage & operating temperature range	T <sub>STG</sub> , T <sub>J</sub>	-55~+150	°C

**ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C)**

LAT56A05L05 (Marking : U5)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V <sub>RWM</sub>				5	V
Reverse breakdown voltage	V <sub>BR</sub>	I <sub>BR</sub> =1mA	6			V
Reverse leakage current	I <sub>R</sub>	V <sub>R</sub> =5V, each I/O pin			1	μA
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =1A			9.8	V
Clamping voltage (tp=8/20μs)	V <sub>C</sub>	I <sub>PP</sub> =5A			18.5	V
Off state junction capacitance	C <sub>J</sub>	0Vdc, f=1MHZ between I/O pins and GND		30		pF

**TYPICAL CHARACTERISTICS CURVES**

Figure 1. Power Derating Curve

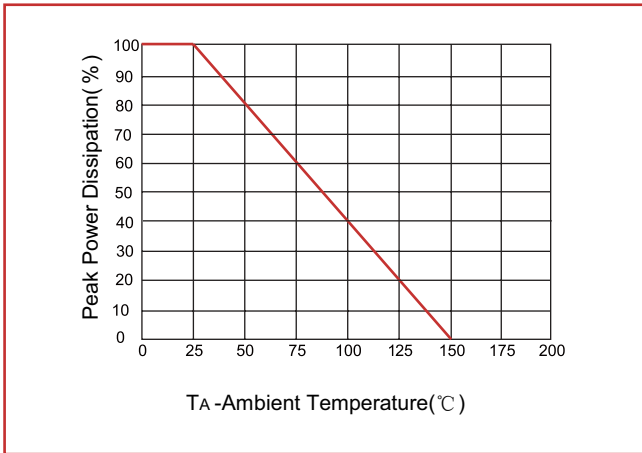


Figure 2. Pulse Waveforms

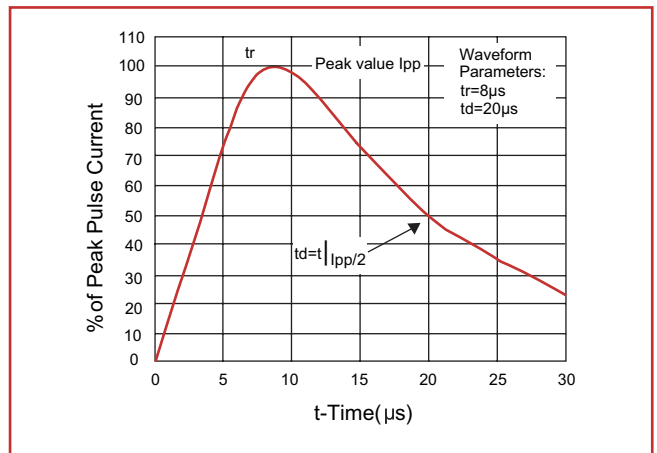


Figure 3. Non-Repetitive Peak Pulse vs Pulse Time

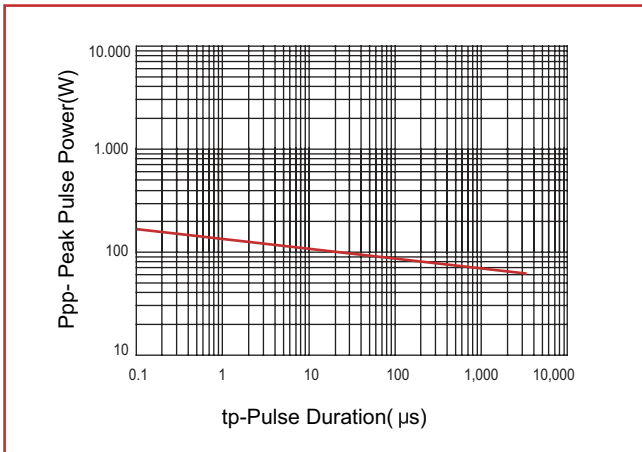


Figure 4. Normalized Capacitance vs. Reverse Voltage

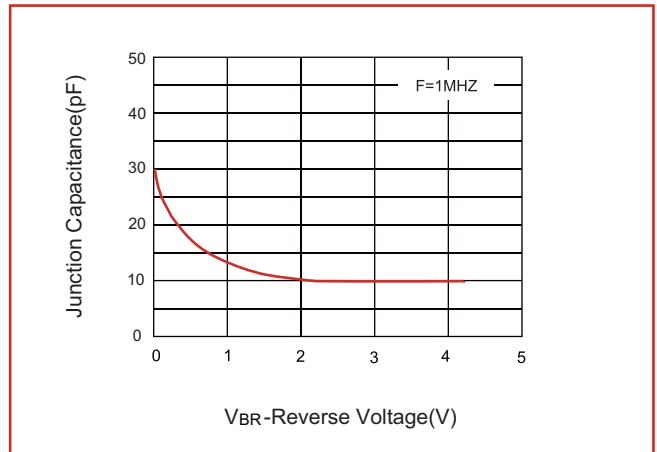


Figure 5. ESD Clamping(8kV Contact per IEC61000-4-2)

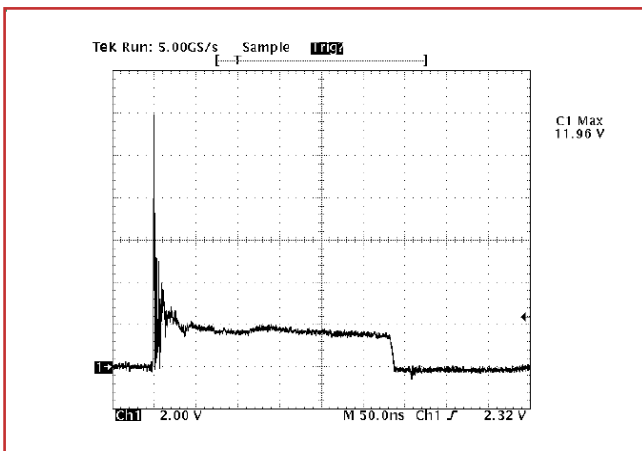
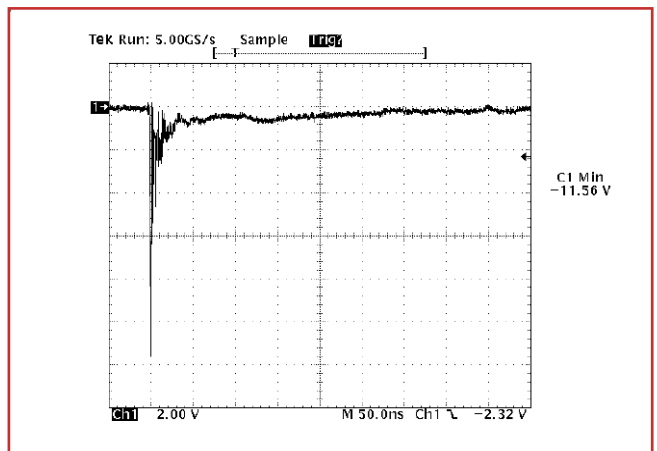
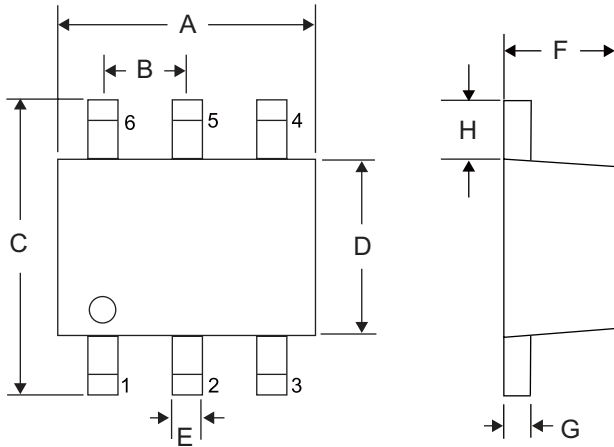


Figure 6. ESD Clamping(-8kV Contact per IEC61000-4-2)



**PACKAGE AND SUGGESTED PAD LAYOUT DIMENSION**

**SOT-563 (unit:mm)**



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.059	0.066	1.50	1.70
B	0.020BSC		0.50BSC	
C	0.059	0.066	1.50	1.70
D	0.043	0.051	1.10	1.30
E	0.007	0.011	0.17	0.27
F	0.020	0.023	0.50	0.60
G	0.003	0.007	0.08	0.18
H	0.004	0.012	0.10	0.30

