

Electrostatic Discharged Protection Devices (ESD) Data Sheet

Description

Brightking's SAT36A05L05 is designed to protect sensitive electronics from damage or latch-up due to ESD and other voltage induced transient events. It is designed for use in applications where board space is at a premium. Each device will protect up to five lines. It is unidirectional devices and may be used on lines where the signal polarities are above ground. The low profile SOT-363 package allows flexibility in the design of crowded circuit boards.

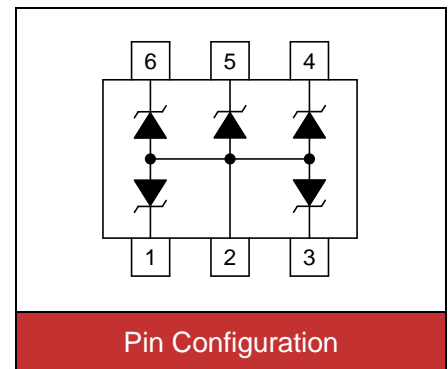


Contact : ±8kV
Air : ±15kV



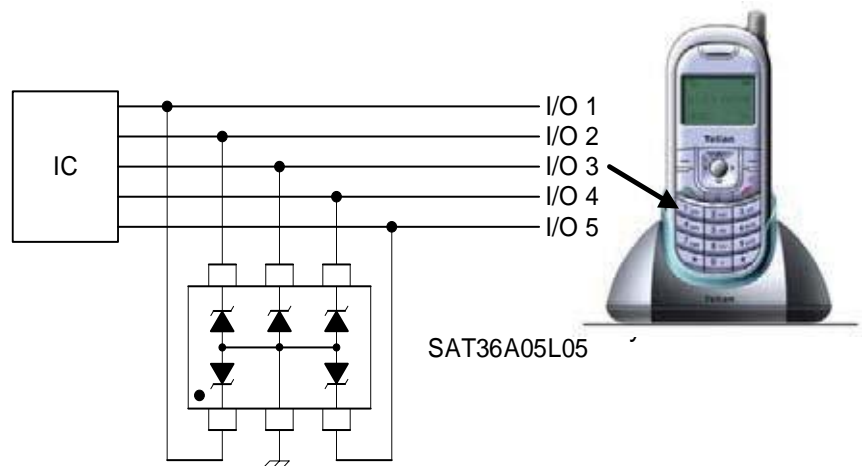
Features

- IEC61000-4-2 ESD 15KV Air, 8KV contact compliance
- SOT-363 surface mount package
- Protects five unidirectional 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
- Lead Free/RoHS compliant
- Solder reflow temperature: Pure Tin-Sn, 260~270°C
- Flammability rating UL 94V-0
- Meets MSL level 1, per J-STD-020
- Marking: WF or 05C
- AEC-Q101 qualified



Applications

- Cell phone handsets and accessories
- Personal digital assistants (PDA's)
- Portable instrumentation
- Set Top Box (STB)
- Servers, notebook and desktop PC
- Digital cameras



Maximum Ratings

Rating	Symbol	Value	Unit
Peak pulse power (tp=8/20μs waveform)	P _{PP}	100	W
ESD voltage (Contact discharge)	V _{ESD}	±8	kV
ESD voltage (Air discharge)		±15	
Storage & operating temperature range	T _{STG} , T _J	-55~+150	°C

Electrical Characteristics (T_J=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V _{RWM}				5	V
Reverse breakdown voltage	V _{BR}	I _{BR} =1mA	6			V
Reverse leakage current	I _R	V _R =5V Each I/O pin			5	μA
Clamping voltage (tp=8/20μs)	V _C	I _{PP} =1A			9.8	V
Off state junction capacitance	C _J	0Vdc, f=1MHz Between I/O pins and GND			50	pF

Typical Characteristics Curves

Figure 1. Power Derating Curve

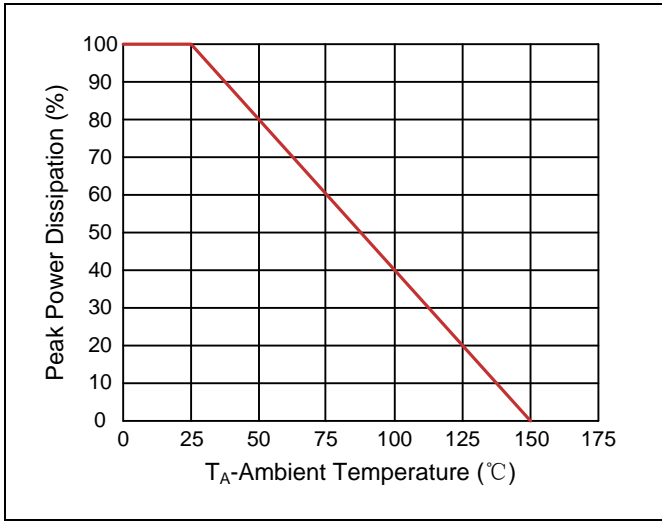


Figure 2. Pulse Waveforms

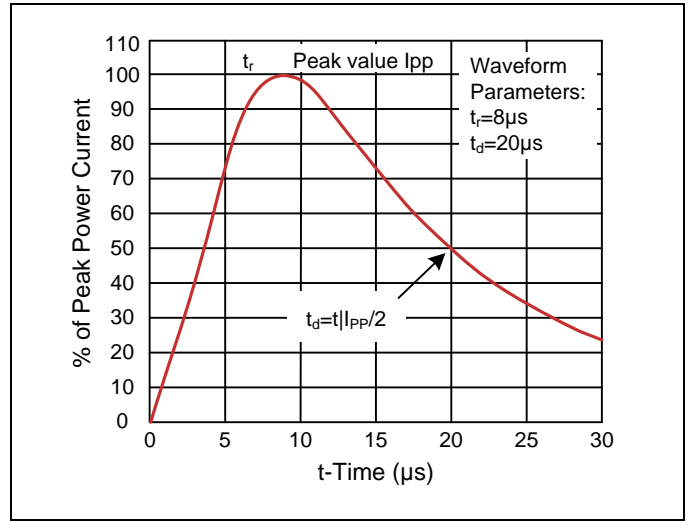


Figure 3. Non-Repetitive Peak Pulse vs. Pulse Time

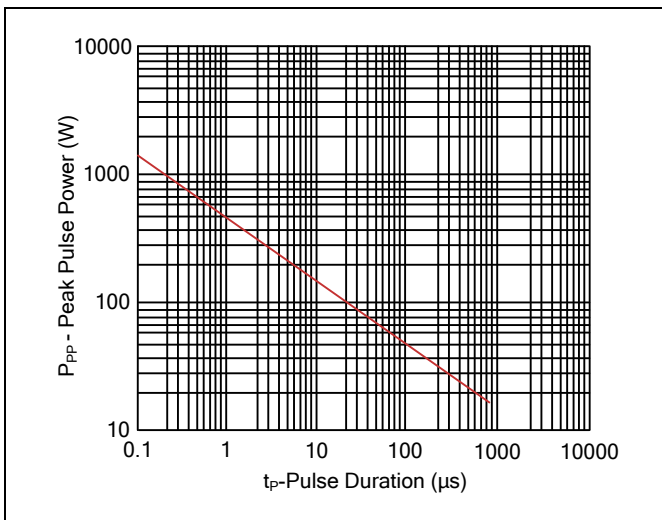
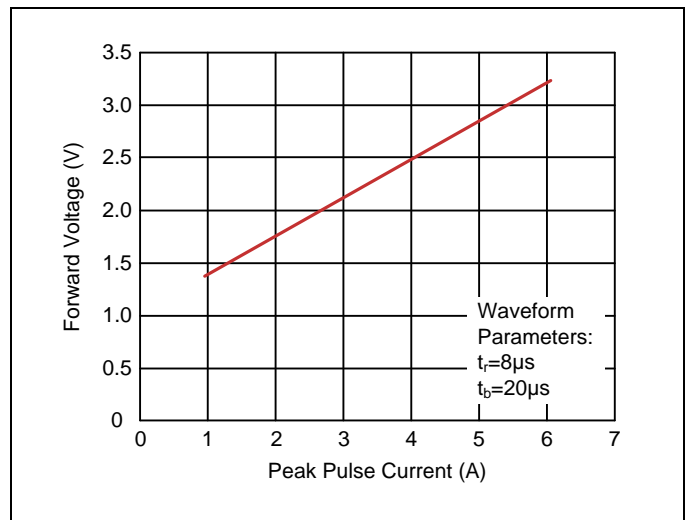
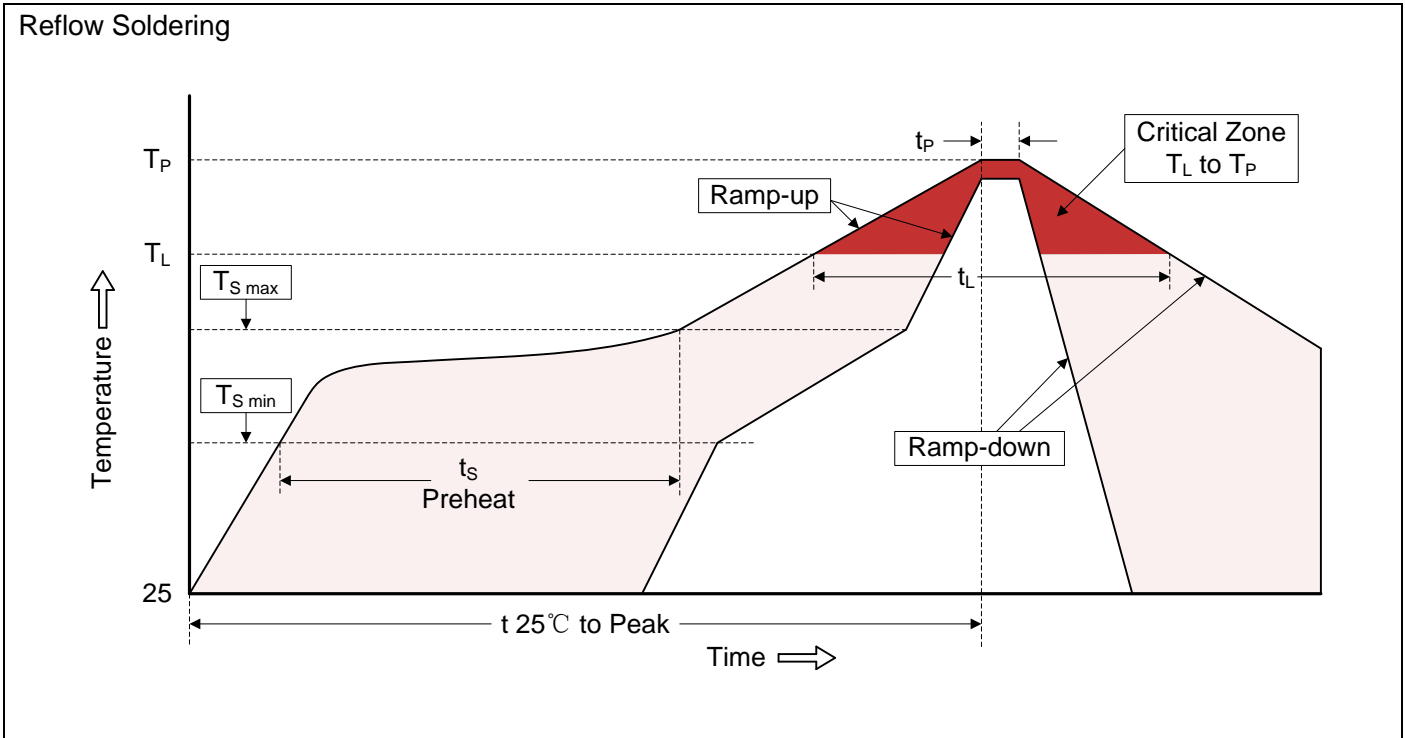


Figure 4. Forward Voltage vs. Forward Current



Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Dimensions (SOT-363)

Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.85	2.15	0.073	0.085
B	1.30		0.051	
C	0.65		0.026	
D	1.90	2.30	0.075	0.091
E	1.10	1.40	0.043	0.055
F	0.15	0.30	0.006	0.012
G	-	0.10	-	0.004
H	0.25	-	0.010	-
I	0.10	0.25	0.004	0.010
J	0.80	1.00	0.031	0.039

Recommended Soldering Pad Layout

Packaging

Type	Symbol	Dimension (mm)
		W
P0		4.00±0.10
P1		4.00±0.10
P2		2.00±0.10
D0		Φ1.55±0.10
D1		Φ1.05±0.05
E		1.75±0.10
F		3.50±0.10
A		2.30±0.10
B		2.45±0.10
K		1.15±0.10
t		0.25±0.05

Reel	Symbol	Dimension (mm)
	D	Φ178.0±2.0
	D2	Φ13.0
	W1	9.5
		Quantity: 3000PCS