



DESCRIPTION

The GSOT05 is a transient voltage suppressor designed to protect components which are connected to data and transmission lines against ESD. It clamps the voltage just above the logic level supply for positive transients, and to a diode drop below ground for negative transients.

The GSOT05 is available in SOT-23 package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	GSOT05
Note	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

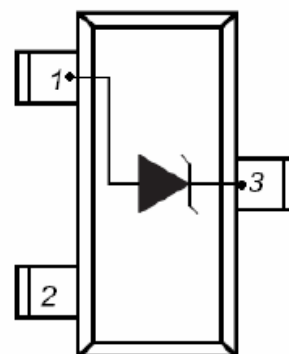
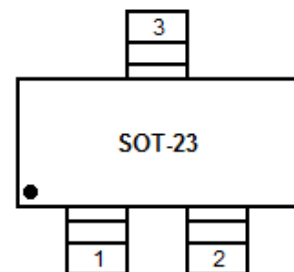
FEATURES

- Unidirectional Transil functions
- Low leakage current: $I_R \max < 20\mu A$ at V_{RM}
- 300W peak pulse power(8/20 μs)
- Transient protection for data lines as per IEC61000-4-2(ESD) 15KV(air) 8KV(contact) IEC61000-4-5(Lightning) see I_{PPM} below
- RoHS Compliance
- Available in SOT-23 package

APPLICATIONS

- Computers
- Printers
- Communication systems

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

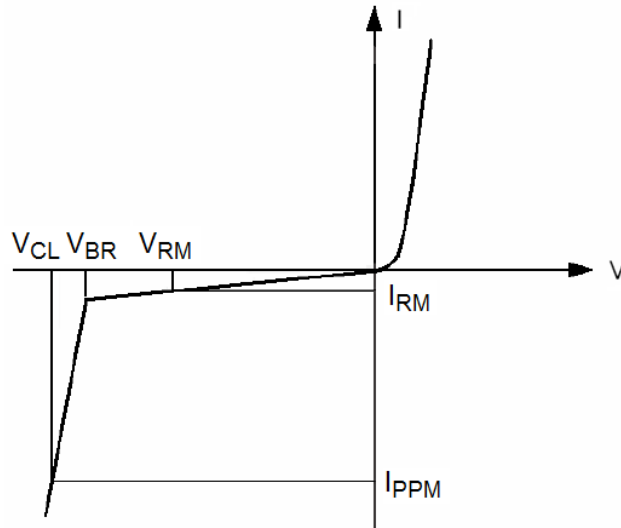
T_{amb}=25°C

P _{PP} , Peak Pulse Power (t _P = 8/20μs)	300W
T _L , Maximum Lead Temperature for Soldering During 10s	260°C
T _{STG} , Storage Temperature Range	-55°C~+150°C
T _{OP} , Operating Temperature Range	-40°C~+125°C
T _J , Maximum junction temperature	150°C
V _{PP} , Electrostatic discharge	
IEC61000-4-2	Air Discharge 15kV
IEC61000-4-2	Contact Discharge 8kV

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



ELECTRICAL PARAMETER



Symbol	Parameter
V_{RM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
V_{CL}	Clamping Voltage
I_{RM}	Leakage Current
I_{PPM}	Peak Pulse Current

ELECTRICAL CHARACTERISTICS

Part Number	Rated Stand-off Voltage	Maximum Leakage Current	Minimum Breakdown Voltage	Maximum Clamping Voltage		Maximum Pulse Peak Current	Maximum Capacitance
	$V_{RM}(V)$	$I_R(\mu A)$ @ V_{RM}	$V_{BR}(V)$ 1mA	$V_{CL}(V)$ 1A ^{NOTE1}	$V_{CL}(V)$ 5A ^{NOTE1}	$I_{PPM}(A)$ $t_p=8/20\mu s$	C(pF) 0V, 1MHz
GSOT05	5.0	20.0	6.0	9.8	12.5	17	220
GSOT12	12.0	1.0	13.3	19.0	28.0	12	150

NOTE1: 8/20 waveform used. (see Figure 2.)



TYPICAL CHARACTERISTICS

Figure1. Peak Pulse Power vs. Pulse Time

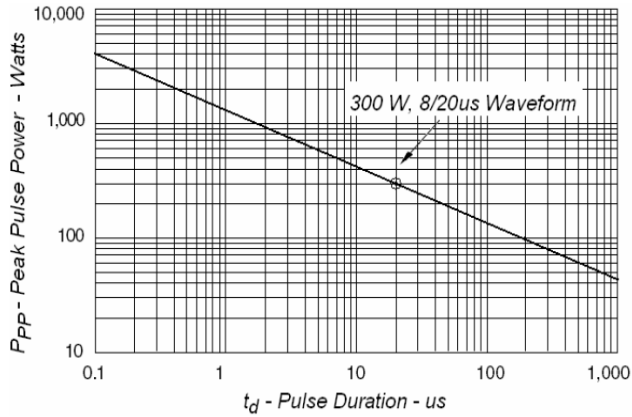


Figure 2. Pulse Waveform

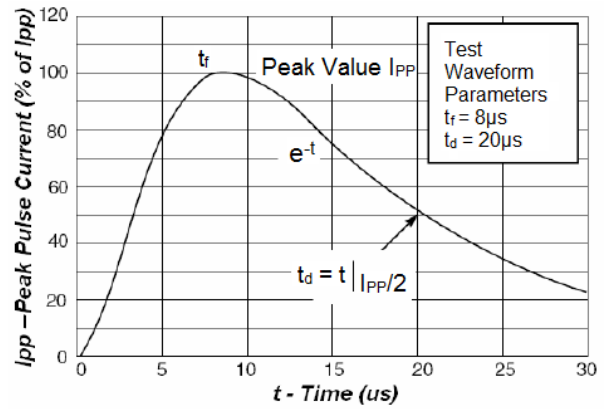
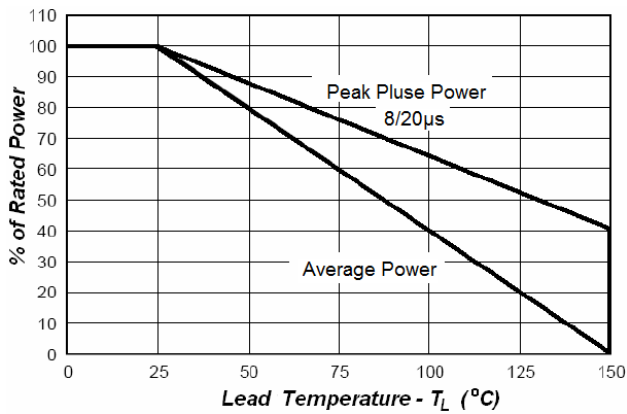


Figure3. Power Derating





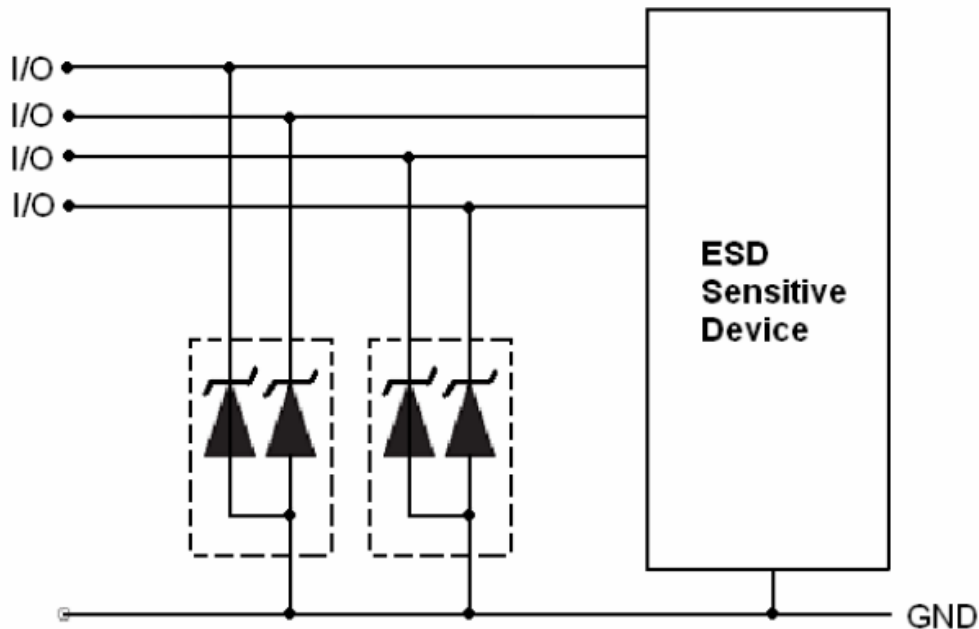
DETAILED INFORMATION

Application Note

Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

Surface mount TVS offer the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal line to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The GSOT05 is the ideal board level protection of ESD sensitive semiconductor components.

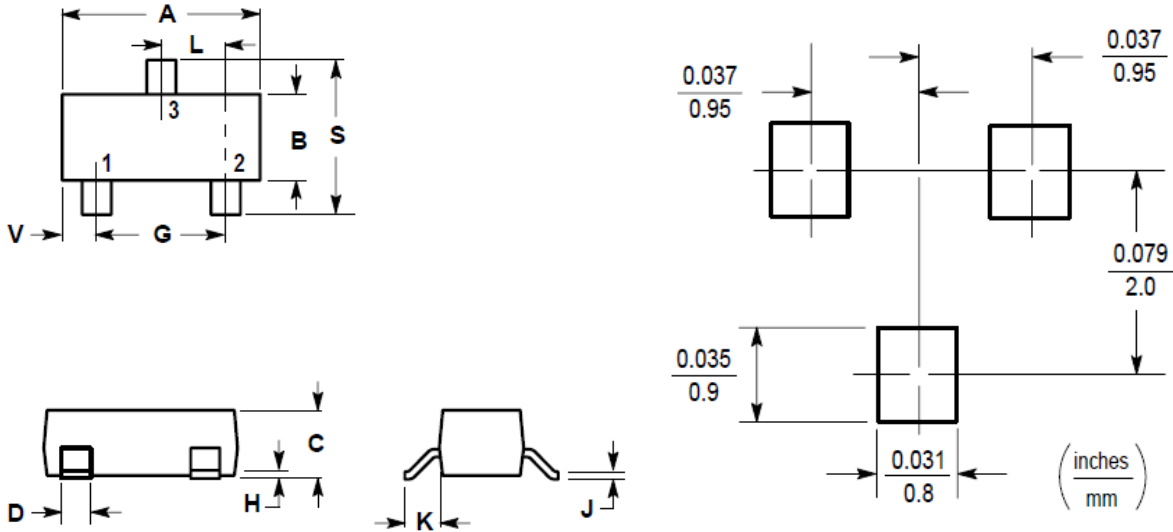
The tiny SOT-23 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	0.89	1.11	0.0350	0.0440
D	0.37	0.50	0.0150	0.0200
G	1.78	2.04	0.0701	0.0807
H	0.013	0.100	0.0005	0.0040
J	0.085	0.177	0.0034	0.0070
K	0.35	0.69	0.0140	0.0285
L	0.89	1.02	0.0350	0.0401
S	2.10	2.64	0.0830	0.1039
V	0.45	0.60	0.0177	0.0236



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.