

SM05T1G ESD Protection Diode

Feature

- Uni-directional ESD protection of two lines
- 350 Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Junction capacitance: 120pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC 61000-4-5 (Lightning) 16A (8/20 μs)

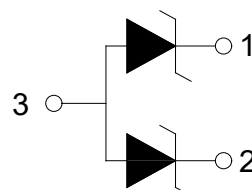
Application

- Portable electronics
- Control & monitoring systems
- Servers, notebooks, and desktop PCs
- Set-top box
- Communication systems

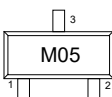
Mechanical Data

- Package: SOT-23
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
SM05T1G	SOT-23		3000 Tape & Reel	7 inches

Absolute Maximum Rating ($T_A = 25^\circ\text{C}$ unless otherwise noted)

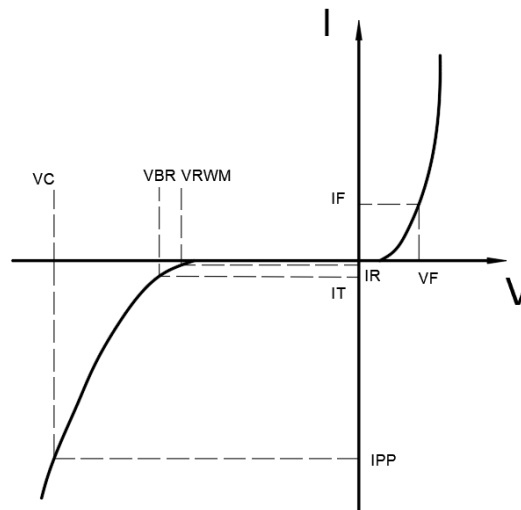
Parameter	Symbol	Min.	Max.	Unit
Peak pulse power ($t_p=8/20\mu\text{s}$)@ 25°C	P_{pk}	-	350	W
Peak pulse current ($t_p=8/20\mu\text{s}$)@ 25°C	I_{pp}		16	A
ESD (IEC61000-4-2 air discharge) @ 25°C	V_{ESD}	-	± 30	kV
ESD (IEC61000-4-2 contact discharge) @ 25°C	V_{ESD}	-	± 30	kV
Junction temperature	T_J	-	125	$^\circ\text{C}$
Operating temperature	T_{OP}	-40	85	$^\circ\text{C}$
Storage temperature	T_{STG}	-55	150	$^\circ\text{C}$
Lead temperature	T_L	-	260	$^\circ\text{C}$

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

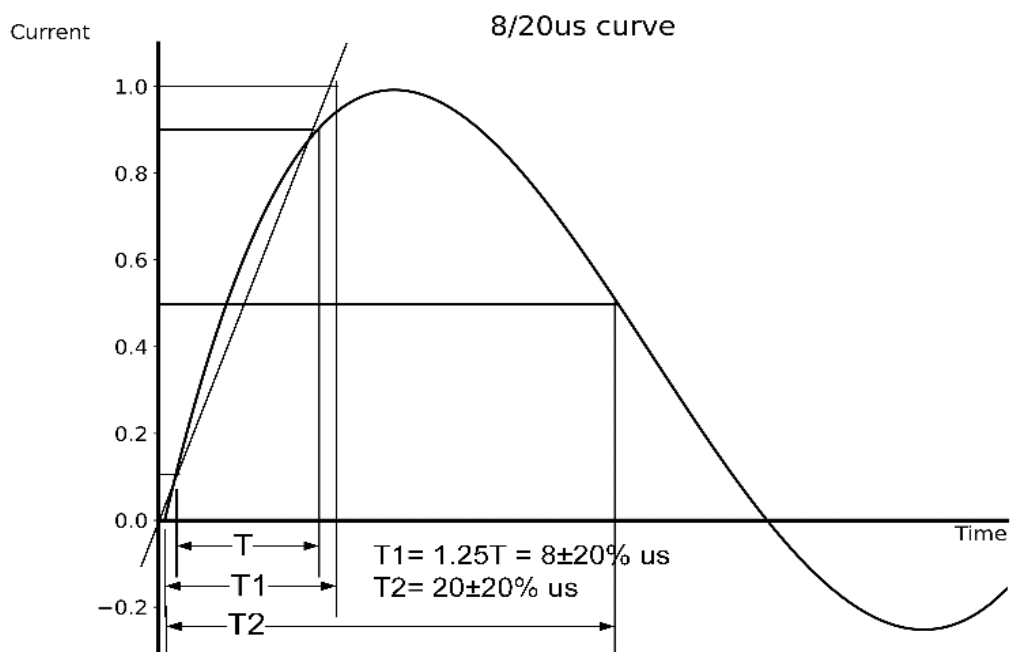
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6		9.5	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$; $t_p=8/20\mu\text{s}$			9	V
Clamping Voltage	V_C	$I_{PP}=16\text{A}$; $t_p=8/20\mu\text{s}$			20	V
Junction Capacitance	C_J	$V_R=0\text{V}$; $f=1\text{MHz}$			120	pF

Electrical Parameters

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F

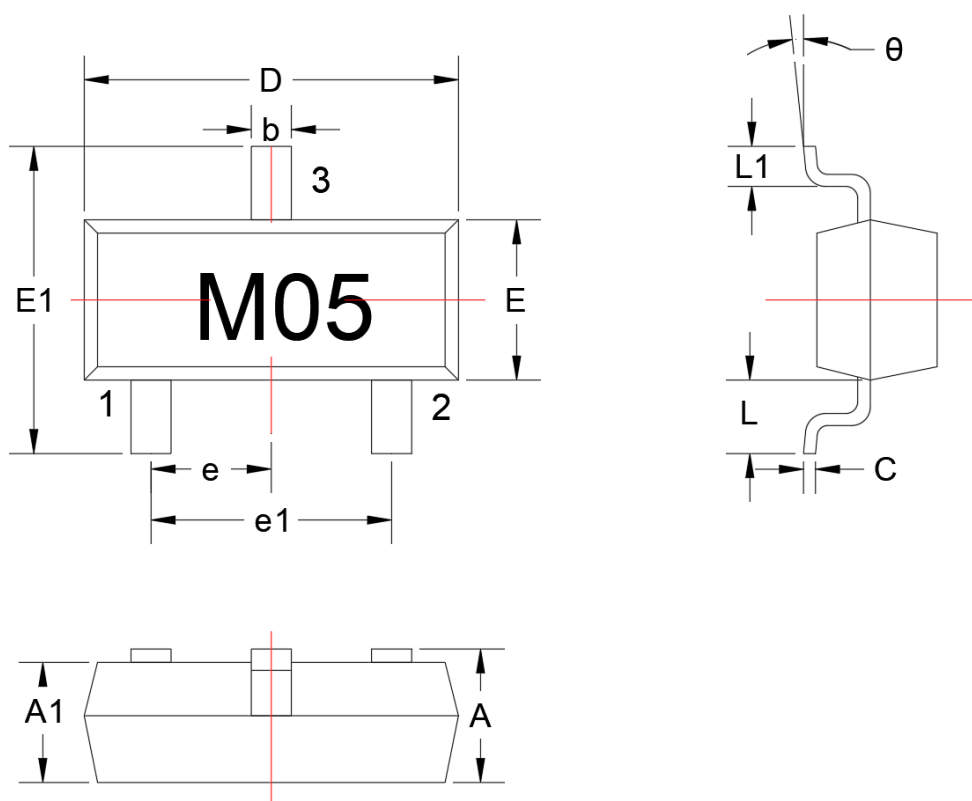


Typical Characteristic ($T_A = 25^\circ\text{C}$ unless otherwise noted)





Outline Drawing – SOT-23



Dimensions in Millimeters					
Symbol	Min.	Max.	Symbol	Min.	Max.
A	0.90	1.15	e1	1.80	2.00
A1	0.90	1.05	L	0.55REF	
b	0.30	0.50	L1	0.30	0.50
C	0.08	0.15	θ	0°	8°
D	2.80	3.00			
E	1.20	1.40			
E1	2.25	2.55			
e	0.95TYP				