



### Discription

The HAQ12C-01FTG protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



SOD-323

### Features

- ★ Small Body Outline Dimensions
- ★ Low Body Height
- ★ Peak Power up to 350 Watts @ 8 x 20  $\mu$ s Pulse
- ★ Low Leakage current
- ★ Response Time is Typically < 1 ns
- ★ IEC61000-4-2 Level 4 ESD Protection
- ★ IEC61000-4-4 Level 4 EFT Protection



Circuit Diagram

### Ordering information

Product ID	Pack	Qty(PCS)
HAQ12C-01FTG	SOD-323	3000

### Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units	
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20 $\mu$ s)	350	W	
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C	
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C	
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C	
T <sub>j</sub>	Maximum junction temperature	150	°C	
	IEC61000-4-2 (ESD)	air discharge contact discharge	$\pm$ 30 $\pm$ 30	KV
	IEC61000-4-4 (EFT)		40	A
	ESD Voltage	Per Human Body Model	16	KV



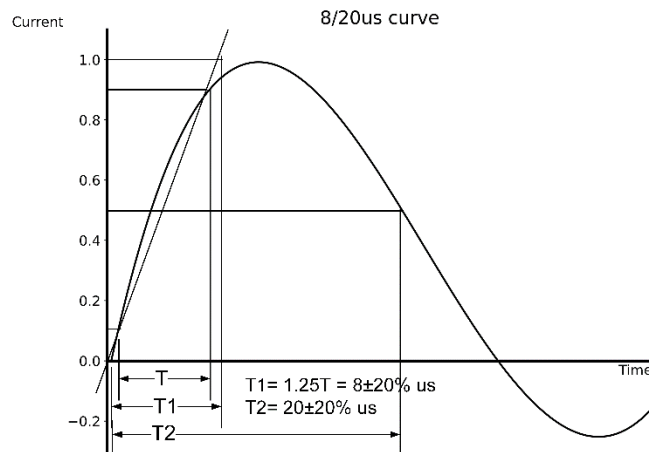
**Electrical Characteristics** Ratings at 25°C ambient temperature unless otherwise specified. VF = 0.9V at IF = 10mA

$V_{RWM}$ (V)	$I_R$ ( $\mu$ A) @ $V_{RWM}$	$V_{BR}$ (V)@ $I_T$ (Note 1)	$I_T$	$V_C$ (V) @ $I_{PP}=1$ A*	$V_C$ (V) @ Max $I_{PP}$ *	$I_{PP}$ (A)*	$P_{PK}$ (W)*	C (pF)
Max	Max	Min	mA	Typ	Max	Max	Max	Max
12	1.0	13.3	1	20	37	12	350	50

\*Surge current waveform per Figure 1.

1.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of 25°C.

### Typical Characteristics





### Outline And Dimensions

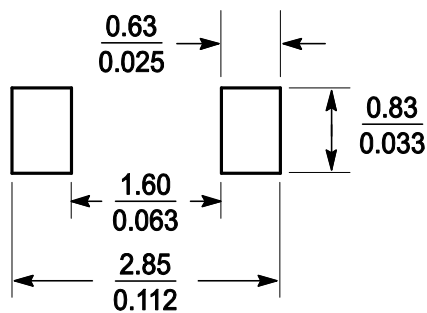
Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.8	0.9	1	0.031	0.035	0.04
A1	0	0.05	0.1	0	0.002	0.004
A3	0.15REF			0.006REF		
b	0.25	0.32	0.4	0.01	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.6	1.7	1.8	0.062	0.066	0.07
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
$H_E$	2.3	2.5	2.7	0.09	0.098	0.105

### Soldering Footprint





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