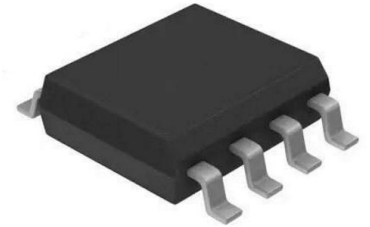


2.8V TVS Diode Array For ESD and Latch-Up Protection



APPLICATION

- ◆ Base Station
- ◆ Analog Inputs
- ◆ Switch Systems
- ◆ 10/100/1000 Ethernet
- ◆ WAN/LAN Equipment
- ◆ Desktops, Servers, and Notebooks
- ◆ Low Voltage Interfaces



IEC COMPATIBILITY

Package: SO-8

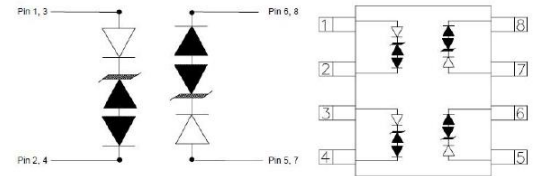
- ◆ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 25A (8/20 μs)



Contact: $\pm 30\text{kV}$ Air: $\pm 30\text{kV}$

FEATURES

- ◆ 600W peak pulse power (8/20 μs)
- ◆ Protects two line pairs (four lines)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 2.8V
- ◆ Very low capacitance: 1pF
- ◆ Ultra low clamping voltage
- ◆ JEDEC SO-8 package



Circuit and Pin Schematic

SO-8 Outline

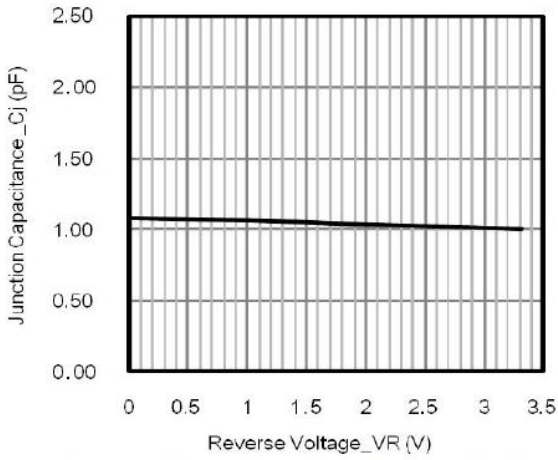
Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20 μs waveform)	P_{ppp}	600	W
Peak Pulse Current (8/20 μs)	I_{pp}	25	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

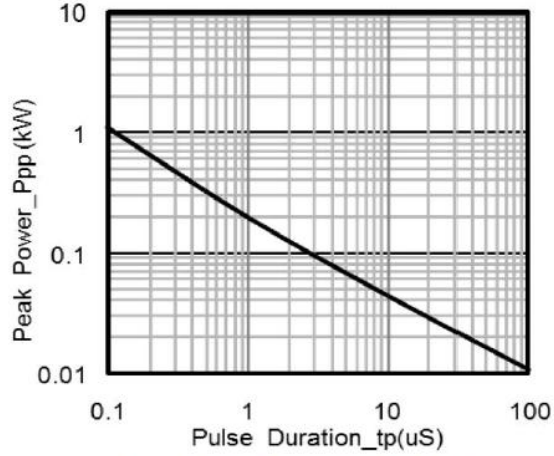
Electrical Characteristics

Part Number	VRWM	VBR	IR (max)	Co Max value	Vc @1A Max	Vc @ A Max	$I_{pp}@8/20\mu\text{s}$	Ppp 8/20 μs	Delivery Time
	V	V	(μA)	pF	V	V	A max	W	Days
HAH2814S8	2.8	3	1	1	5	24	25	600	7days

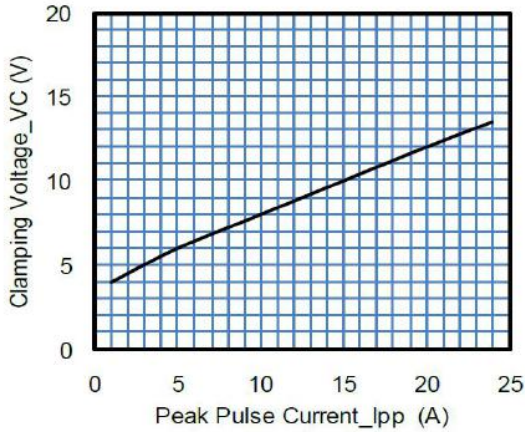
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



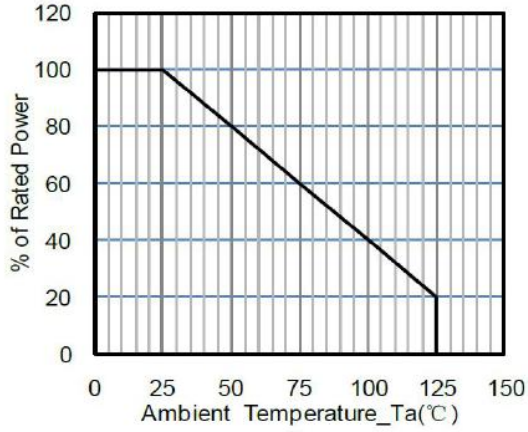
Junction Capacitance vs. Reverse Voltage



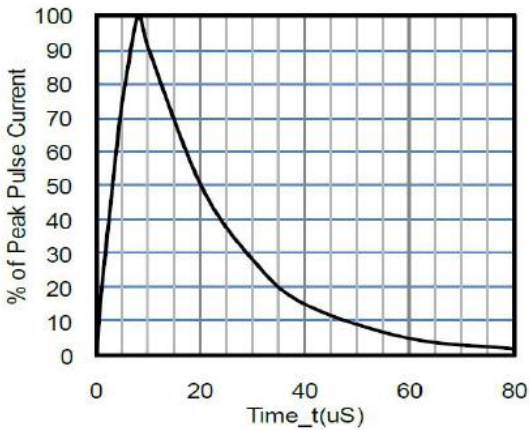
Peak Pulse Power vs. Pulse Time



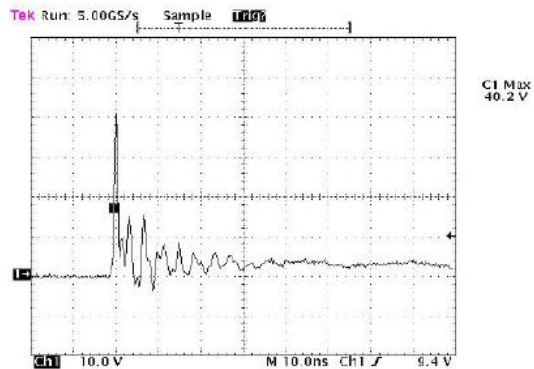
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20us Pulse Waveform



ESD Clamping Voltage

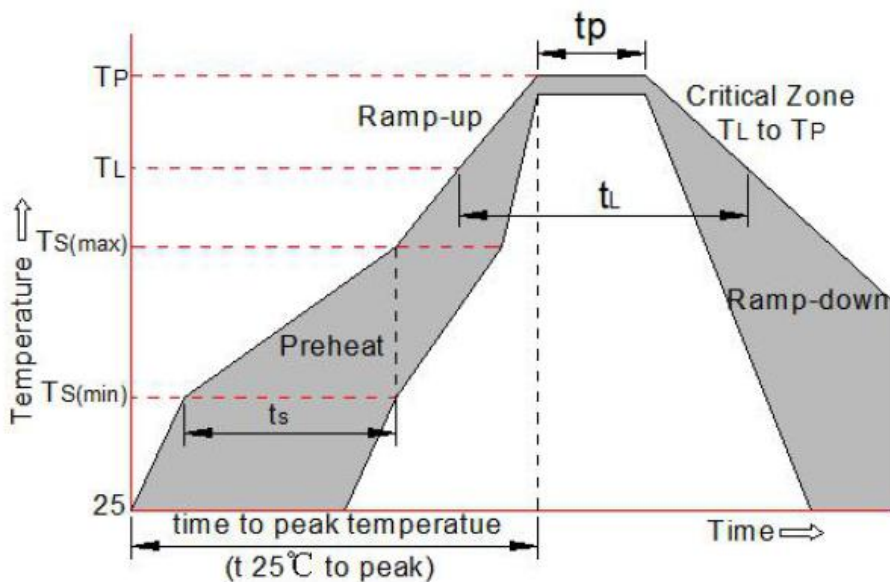
8 kV Contact per IEC61000-4-2

2.8V TVS Diode Array For ESD and Latch-Up Protection

Soldering Parameters



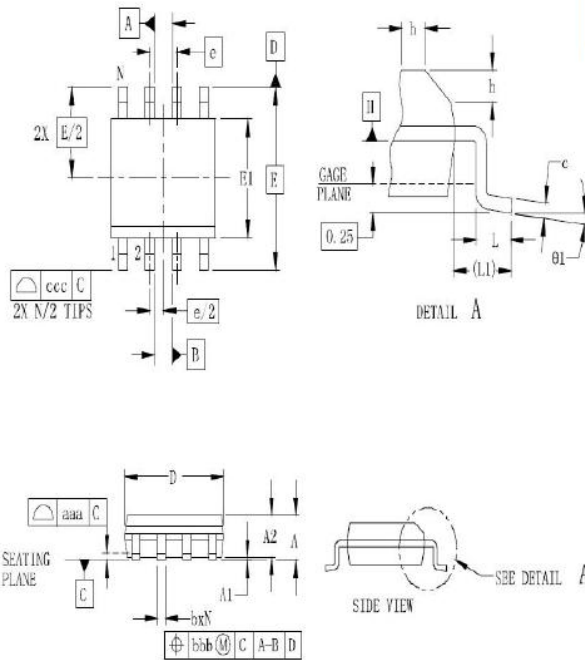
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



2.8V TVS Diode Array For ESD and Latch-Up Protection

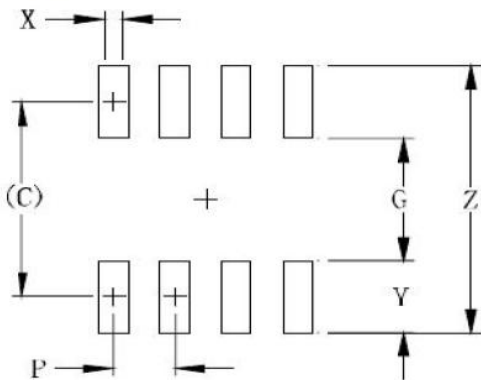


Package Mechanical Data



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.35		1.75	0.053		0.069
A1	0.10		0.25	0.004		0.010
A2	1.25		1.65	0.049		0.065
b	0.31		0.51	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.80	4.90	5.00	0.189	0.193	0.197
E1	3.80	3.90	4.00	0.150	0.154	0.157
E	6.00BSC			0.236BSC		
e	1.27BSC			0.050BSC		
h	0.25		0.50	0.010		0.020
L	0.40	0.72	1.04	0.016	0.028	0.041
L1	(1.04)			(0.041)		
N	8			8		
Ø1	0		8	0		8
	0.10			0.004		
	0.25			0.010		
H _E	0.20			0.008		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	(5.20)	0.205
G	3.00	0.118
P	1.27	0.050
X	0.60	0.024
Y	2.20	0.087
Z	7.40	0.291

Ordering Information

Part Number	Qty per Reel	Reel Size	Package	Delivery Time
HAH2814S8	2500pcs	13inch	SO-8	7days