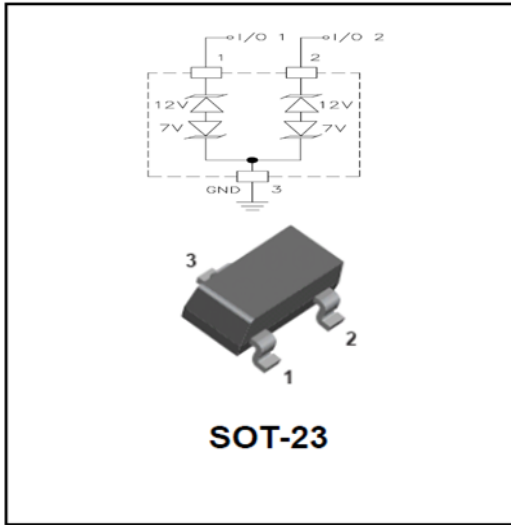
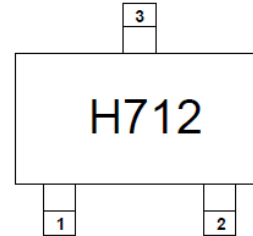


## ESD Protection Diode



### Features

- Low clamping voltage
- Low leakage
- Operating voltage: 7V or 12V
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking:H712



### Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNIT	
Operating Junction	$T_J$	-55 to +125	°C	
Storage Temperature	$T_{STG}$	-55 to +150	°C	
IEC61000-4-2(ESD)Air	$V_{ESD}^{(1)}$	±30	KV	
IEC61000-4-2(ESD)Contact		±30	KV	
Peak Pulse Power	$P_{PP}^{(2)}$	600-1000	W	
Peak Pulse Current	$I_{PP}^{(2)}$	Pin 1 or 2 to Pin 3	30	A
		Pin 3 to Pin 1 or 2	38	

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.



# ASM712H

## ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	CONDITIONS		MIN	TYP	MAX
Reverse Standoff Voltage	V <sub>RWM</sub> <sup>(1)</sup>	V	Pin 1 to Pin 3 and Pin2 to Pin 3				12
			Pin 3 to Pin 1 and Pin3 to Pin 2				7
Reverse Leakage Current	I <sub>R</sub>	uA	Pin 1 to Pin 3 and Pin2 to Pin 3	VR = V <sub>RWM</sub>			0.5
			Pin 3 to Pin 1 and Pin3 to Pin 2	VR = V <sub>RWM</sub>			0.5
Breakdown Voltage	V <sub>(BR)</sub>	V	Pin 1 to Pin 3 and Pin2 to Pin 3	IT = 1mA	13.3		
			Pin 3 to Pin 1 and Pin3 to Pin 2	IT = 1mA	7.5		
Clamping Voltage	V <sub>C</sub> <sup>(2)</sup>	V	Pin 1 to Pin 3 and Pin2 to Pin 3	I <sub>PP</sub> = 1A(8/20μs pulse)			19
			Pin 3 to Pin 1 and Pin3 to Pin 2	I <sub>PP</sub> = 1A(8/20μs pulse)			11
Clamping Voltage	V <sub>C</sub> <sup>(2)</sup>	V	Pin 1 to Pin 3 and Pin2 to Pin 3	I <sub>PP</sub> = 30A(8/20μs pulse)			25
Clamping Voltage	V <sub>C</sub> <sup>(2)</sup>	V	Pin 3 to Pin 1 and Pin3 to Pin 2	I <sub>PP</sub> = 38A(8/20μs pulse)			17
Junction Capacitance	C <sub>J</sub>	pF	Pin 1 to Pin 3 and Pin2 to Pin 3	VR = 0V, f = 1MHz			75
			Pin 3 to Pin 1 and Pin3 to Pin 2	VR = 0V, f = 1MHz			75
Junction Capacitance	C <sub>J</sub>	pF	Pin 1 to Pin 3 and Pin2 to Pin 3	VR = V <sub>RWM</sub> , f = 1MHz			38
			Pin 3 to Pin 1 and Pin3 to Pin 2	VR = V <sub>RWM</sub> , f = 1MHz			55

(1).Other voltages available upon request.

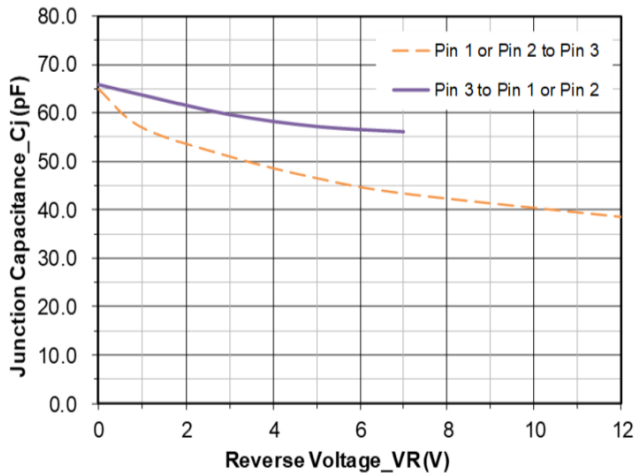
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

## ■Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

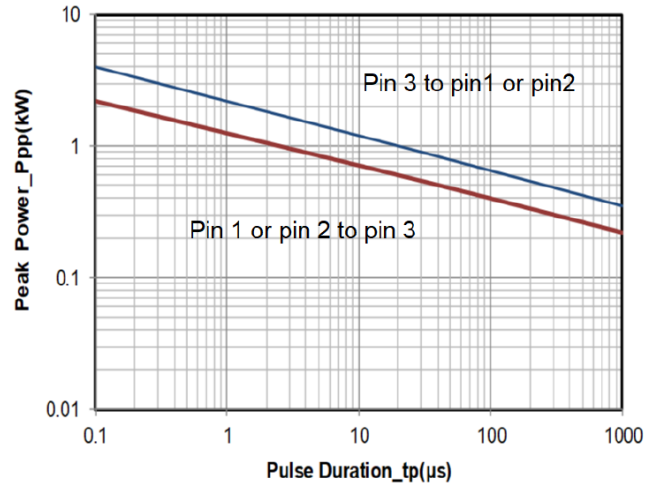
PARAMETER	SYMBOL	UNIT	ASM712H
Thermal Resistance(Typical)	R <sub>θJ-A</sub>	°C/W	357
	R <sub>θJ-C</sub>	°C/W	143



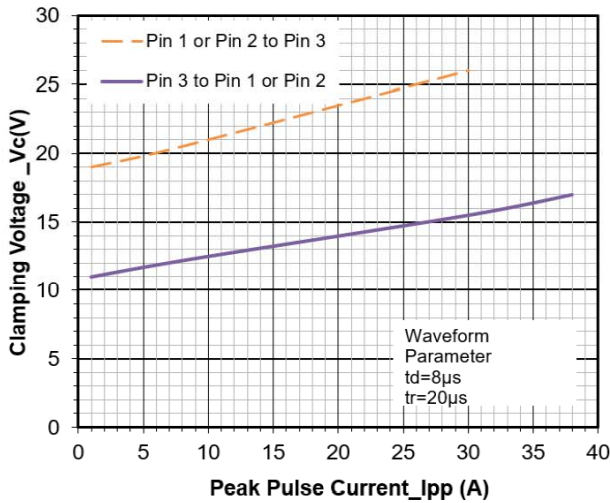
## ■ Characteristics (Typical)



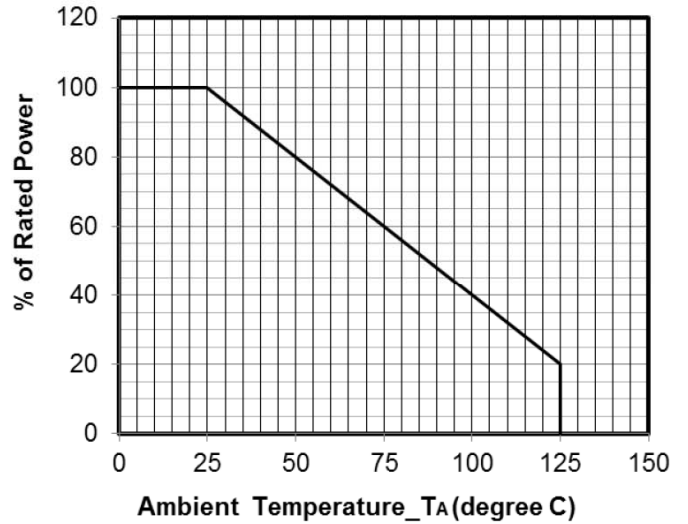
Junction Capacitance vs. Reverse Voltage



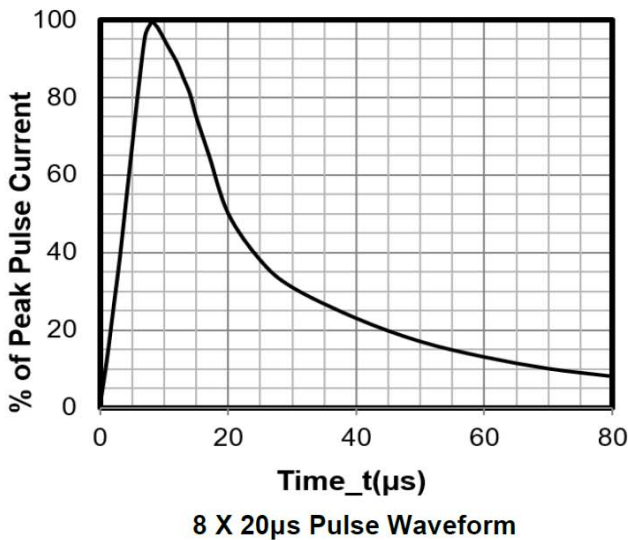
Peak Pulse Power vs. Pulse Time



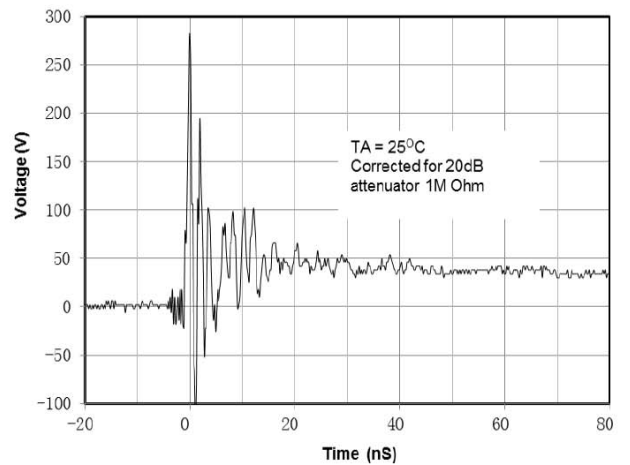
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20  $\mu s$  Pulse Waveform

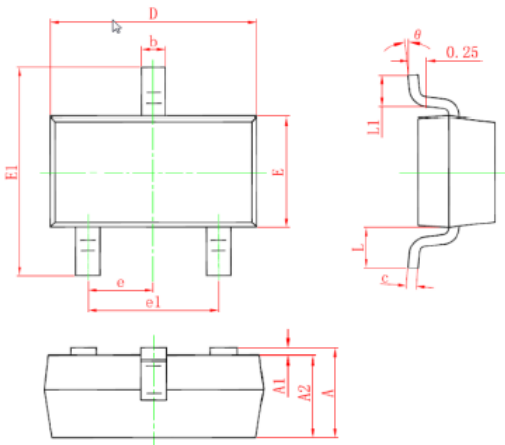


ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2



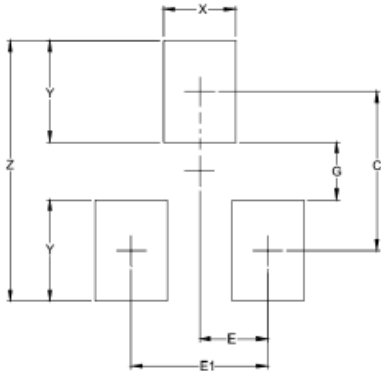
# ASM712H

## ■ Outline Dimensions



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	--	1.15	0.035	--	0.045
A1	0.00	--	0.10	0.000	--	0.004
A2	0.90	--	1.05	0.035	--	0.041
b	0.30	--	0.50	0.012	--	0.020
c	0.08	--	0.15	0.003	--	0.006
D	2.80	--	3.00	0.110	--	0.118
E	1.20	--	1.40	0.047	--	0.055
E1	2.25	--	2.55	0.089	--	0.100
e	0.95TYP			0.037TYP		
e1	1.80	--	2.00	0.071	--	0.079
L	0.55REF			0.022REF		
L1	0.30	--	0.50	0.012	--	0.020
θ	0°	--	8°	0°	--	8°

## ■ Soldering Footprint



SYM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.087)	(2.20)
E	.037	0.95
E1	.075	1.90
G	.031	0.80
X	.039	1.00
Y	.055	1.40
Z	.141	3.60



# ASM712H

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