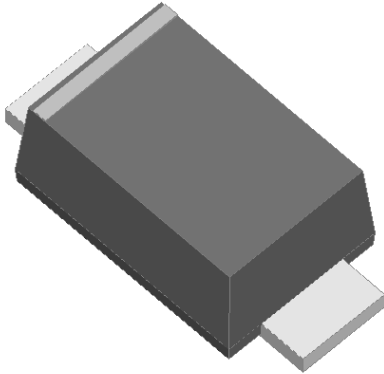


## Surface Mount High Efficient Rectifier

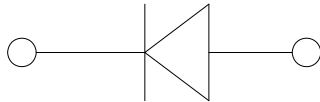


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

### Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.



### Mechanical Data

- **Package:** SOD-123FL  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

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

PARAMETER	SYMBOL	UNIT	H1AQ	H1BQ	H1DQ	H1FQ	H1GQ	H1JQ	H1KQ
Device marking code			H1A	H1B	H1D	H1F	H1G	H1J	H1K
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	50	100	200	300	400	600	800
Maximum RMS Voltage	V <sub>RMS</sub>	V	35	70	140	210	280	420	560
Maximum DC blocking Voltage	V <sub>DC</sub>	V	50	100	200	300	400	600	800
Average rectified output current @60Hz Half-sine wave, Resistance load, T <sub>L</sub> (Fig.1)	I <sub>O</sub>	A	1.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	A	30						
Storage temperature	T <sub>stg</sub>	°C	-55 ~ +150						
Junction temperature	T <sub>J</sub>	°C	-55 ~ +150						

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	H1AQ	H1BQ	H1DQ	H1FQ	H1GQ	H1JQ	H1KQ
Maximum instantaneous forward voltage	V <sub>F</sub>	V	I <sub>FM</sub> =1.0A	1.0			1.3		1.7	
Maximum reverse recovery time	t <sub>rr</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	50					75	
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5						
			T <sub>j</sub> =125°C	100						
Typical junction capacitance	C <sub>j</sub>	pF	V <sub>R</sub> =4V, f=1 MHz	15			10		7	



# H1AQ THRU H1KQ

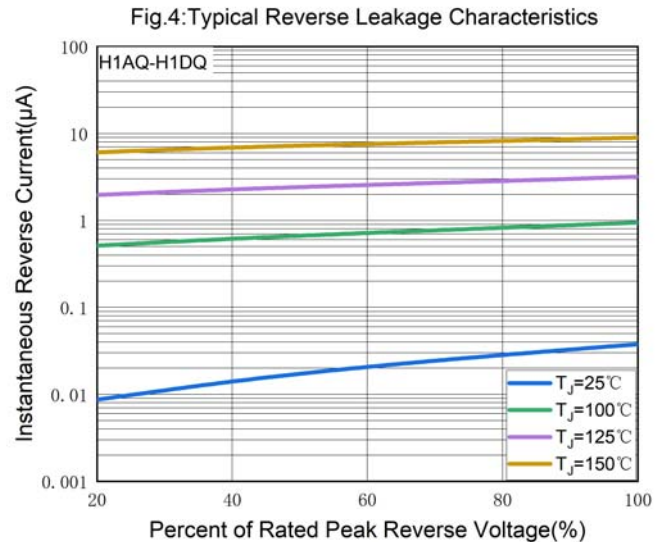
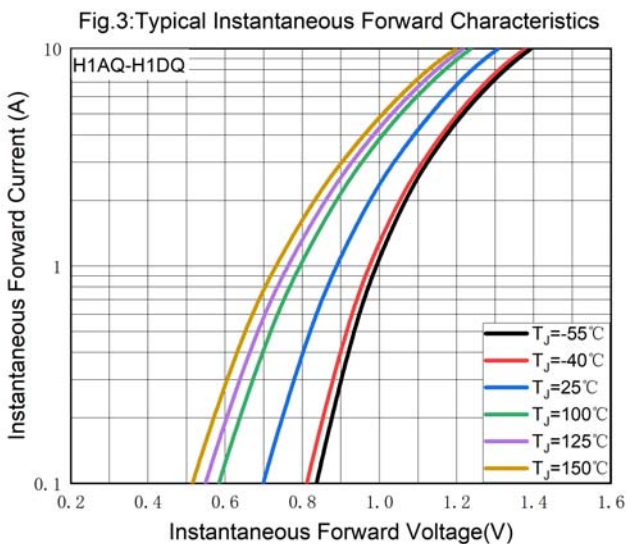
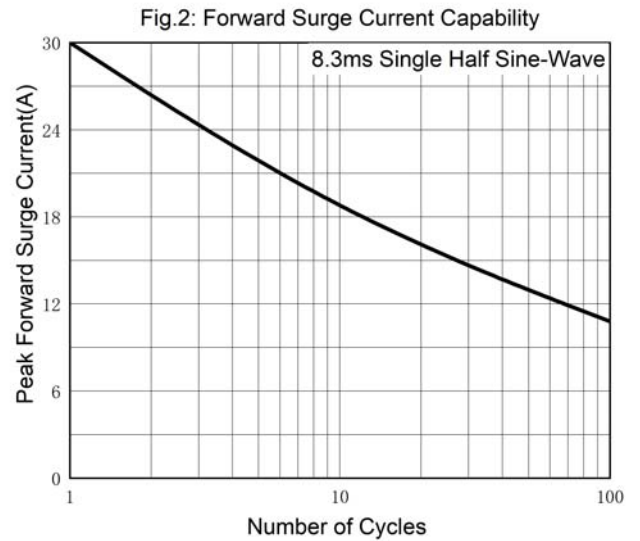
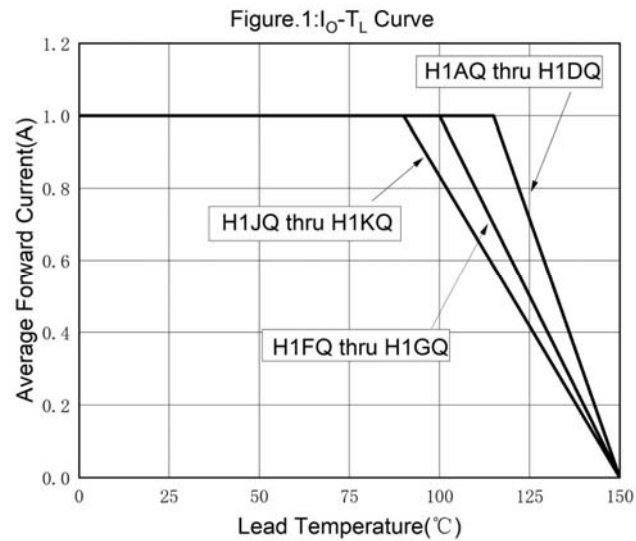
## ■ Thermal Characteristics ( $T_a=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	H1AQ	H1BQ	H1DQ	H1FQ	H1GQ	H1JQ	H1KQ
Typical Thermal resistance	$R_{\theta J-A}^{(1)}$	$^{\circ}\text{C/W}$	90						
	$R_{\theta J-L}^{(1)}$		35						

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 5mm\*5mm copper pad areas.

## ■ Characteristics(Typical)





## H1AQ THRU H1KQ

Fig.5: Typical Instantaneous Forward Characteristics

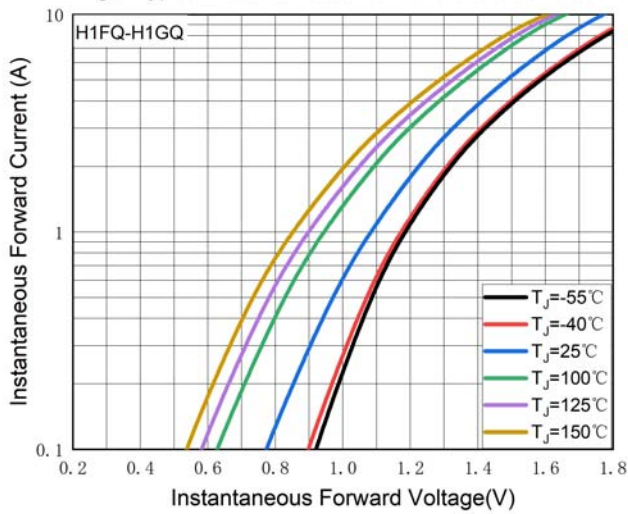


Fig.6: Typical Reverse Leakage Characteristics

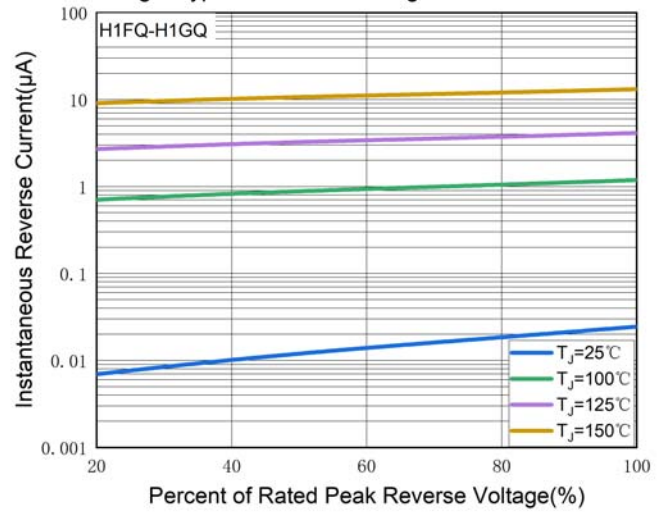


Fig.7: Typical Instantaneous Forward Characteristics

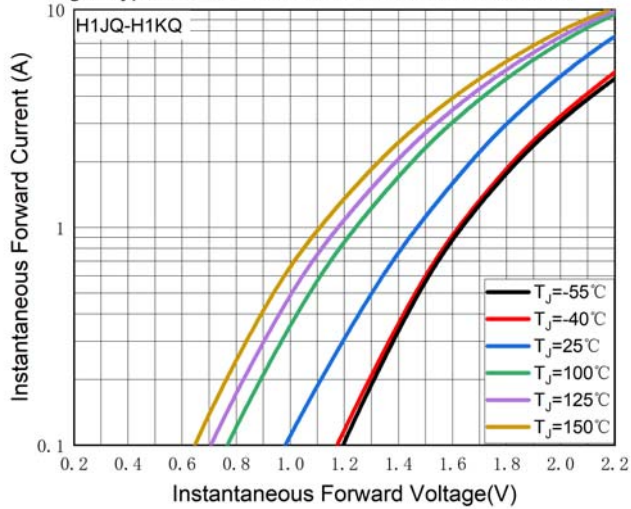


Fig.8: Typical Reverse Leakage Characteristics

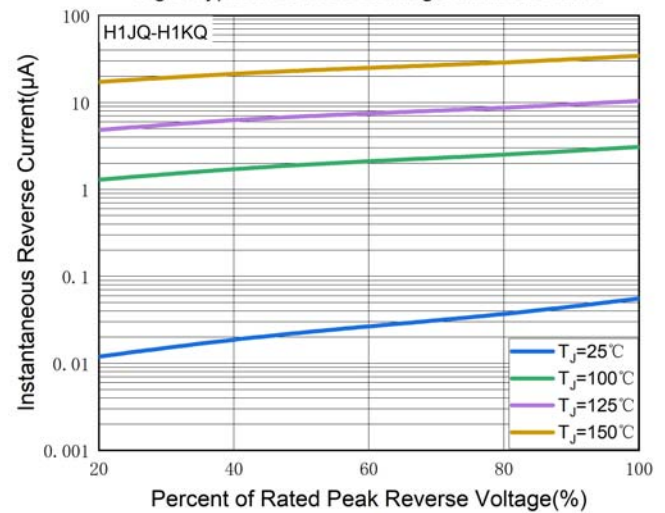
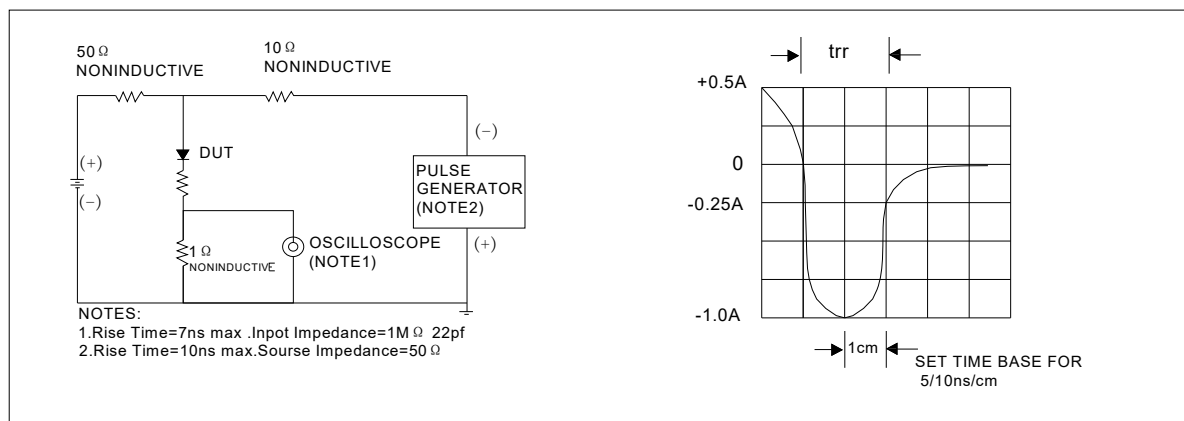


Fig.9: Diagram of circuit and Testing wave form of reverse recovery time



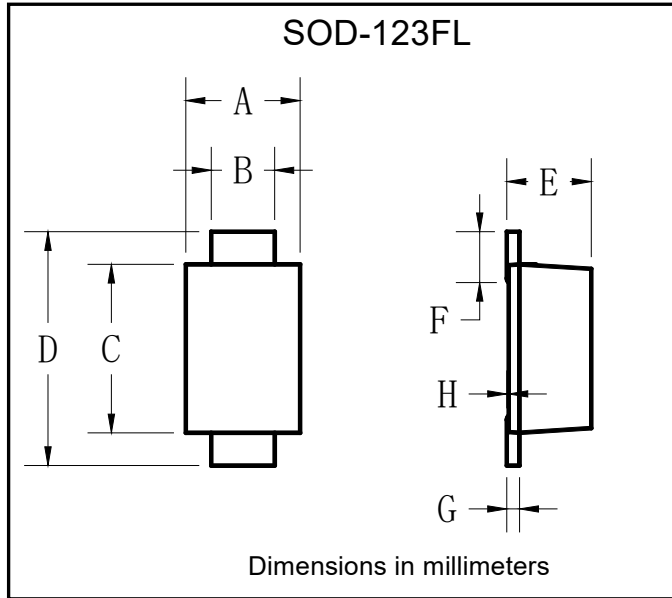


## H1AQ THRU H1KQ

### ■ Ordering Information (Example)

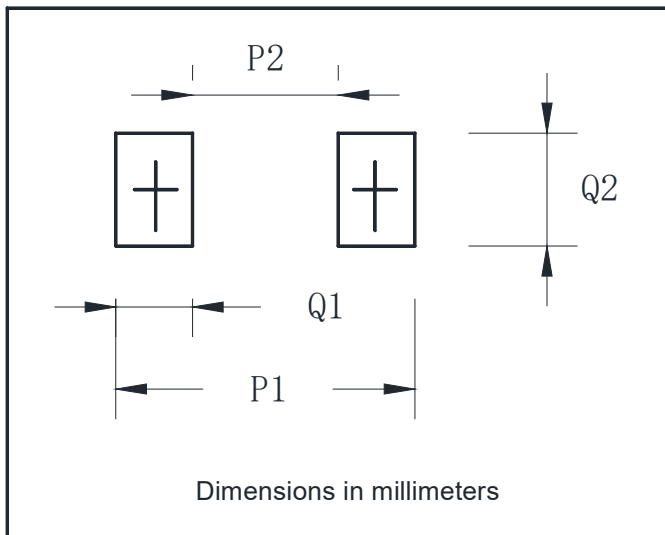
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
H1AQ ~ H1KQ	F1	0.0169	3000	30000	120000	7" reel

### ■ Outline Dimensions



SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	-	0.05

### ■ Suggested pad layout



SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



## H1AQ THRU H1KQ

### ■ Marking Information



**Note:**

1. All marking is at middle of the product body
2. All marking is in laser printing
3. XXX is marking code, like H1KQ marking code is H1K.
4. Body color: Black
5. YWW is date code, "Y" is year. "WW" is week.

**For instance:**

The 17<sup>th</sup> week of 2024, date code is 417  
The 17<sup>th</sup> week of 2025, date code is 517



## H1AQ THRU H1KQ

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### Disclaimer

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