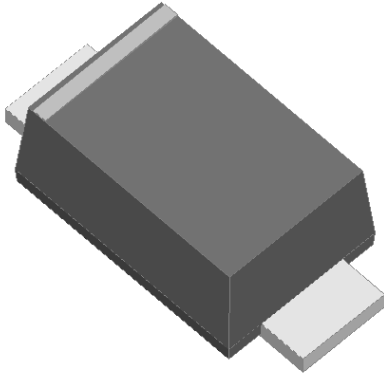


Surface Mount High Efficient Rectifier

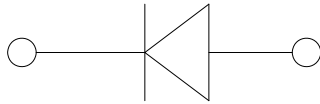


Features

- 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_a=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 _{RRM}	V	50	100	200	300	400	600	800
Maximum RMS Voltage	V _{RMS}	V	35	70	140	210	280	420	560
Maximum DC blocking Voltage	V _{DC}	V	50	100	200	300	400	600	800
Average rectified output current @60Hz Half-sine wave, Resistance load, T _L (Fig.1)	I _O	A	1.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _J =25°C	I _{FSM}	A	30						
Storage temperature	T _{stg}	°C	-55 ~ +150						
Junction temperature	T _J	°C	-55 ~ +150						

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	H1AQ	H1BQ	H1DQ	H1FQ	H1GQ	H1JQ	H1KQ
Maximum instantaneous forward voltage	V _F	V	I _{FM} =1.0A	1.0			1.3		1.7	
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _r =0.25A	50					75	
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _j =25°C	5						
			T _j =125°C	100						
Typical junction capacitance	C _j	pF	V _R =4V, f=1 MHz	15			10		7	



H1AQ THRU H1KQ

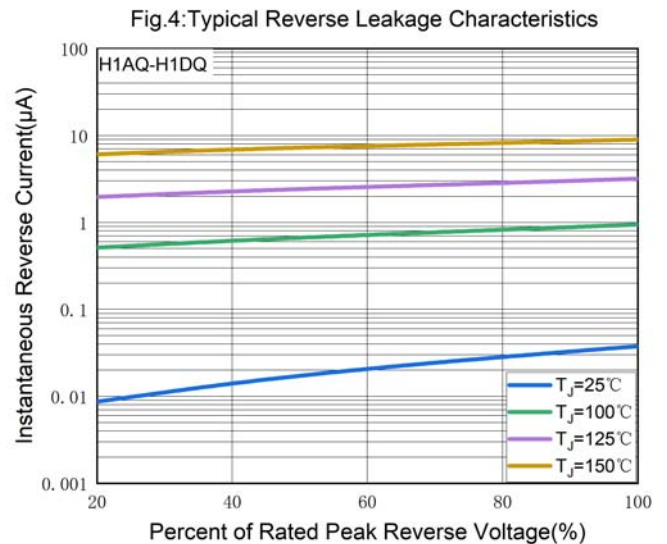
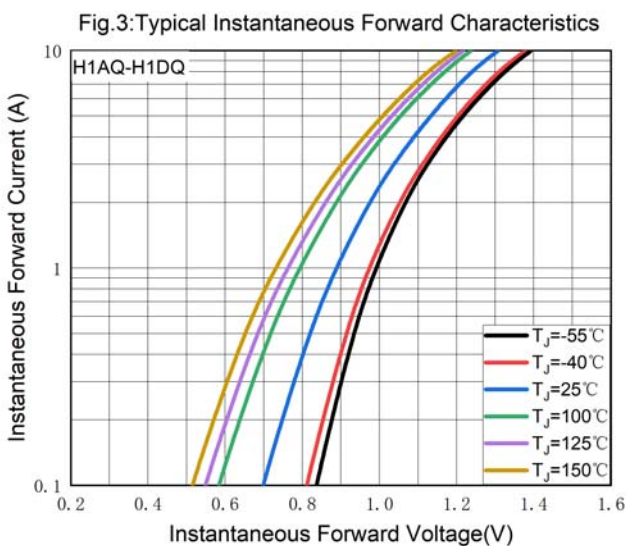
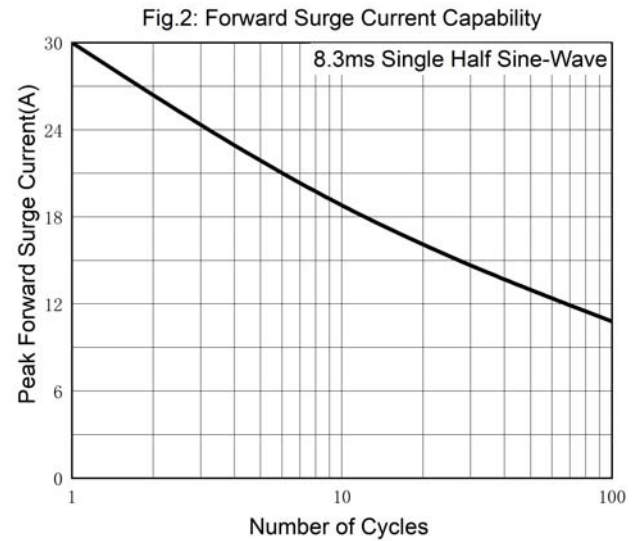
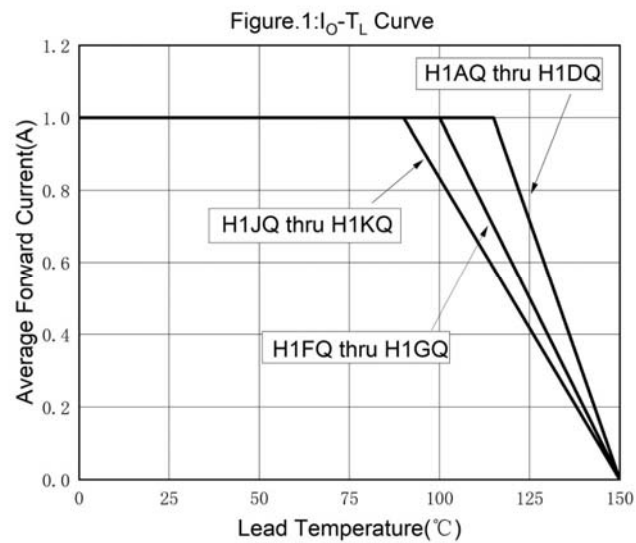
■ Thermal Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

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

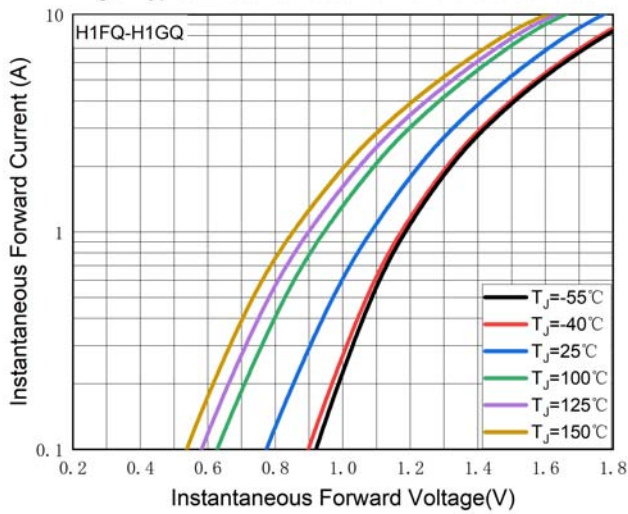


Fig.6: Typical Reverse Leakage Characteristics

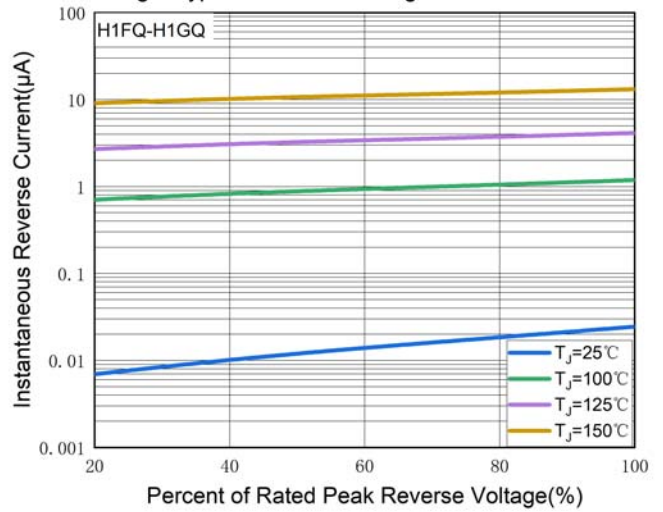


Fig.7: Typical Instantaneous Forward Characteristics

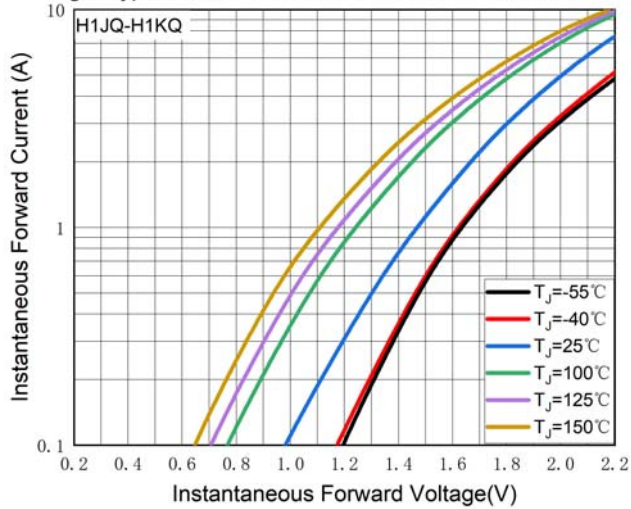


Fig.8: Typical Reverse Leakage Characteristics

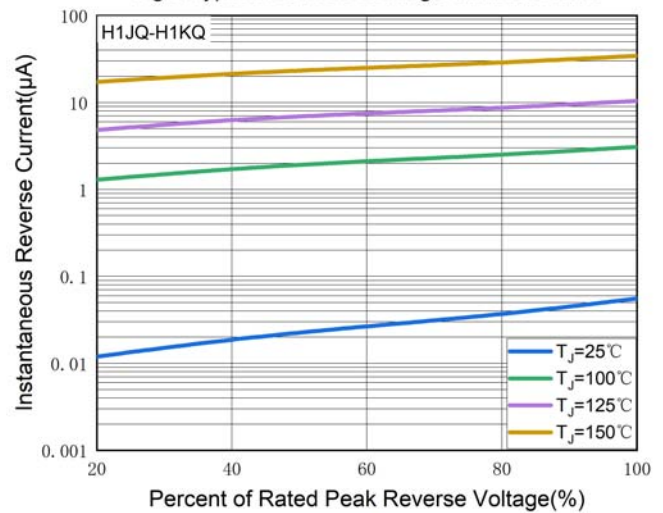
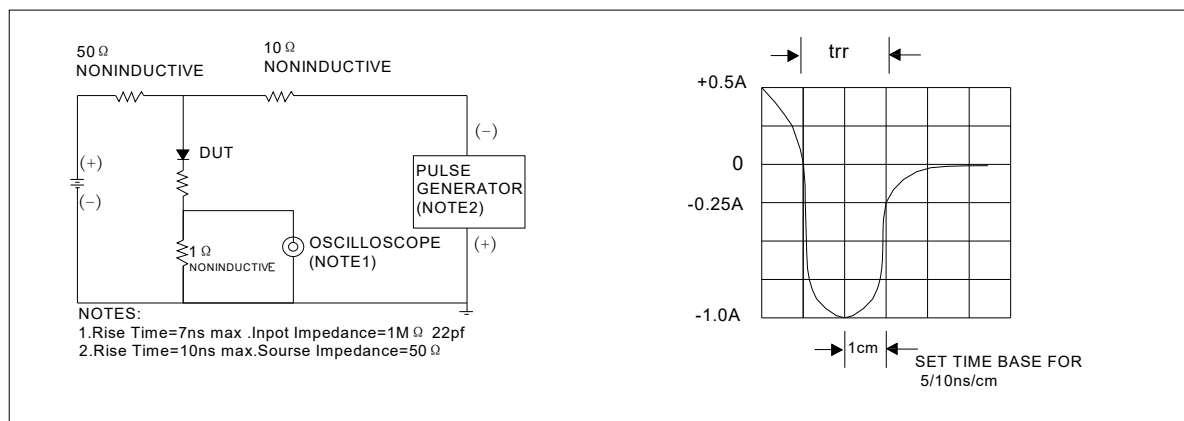


Fig.9: Diagram of circuit and Testing wave form of reverse recovery time



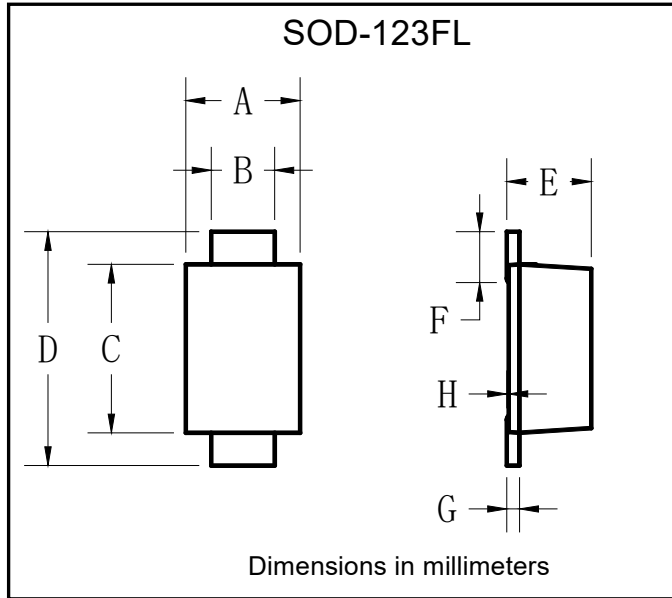


H1AQ THRU H1KQ

■ Ordering Information (Example)

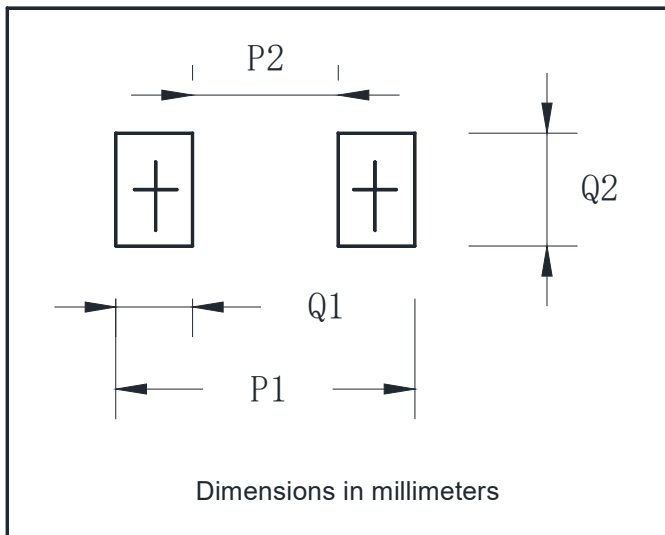
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
H1AQ ~ H1KQ	F1	0.0169	3000	30000	120000	7" reel

■ 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	0.02	0.05

■ Suggested pad layout

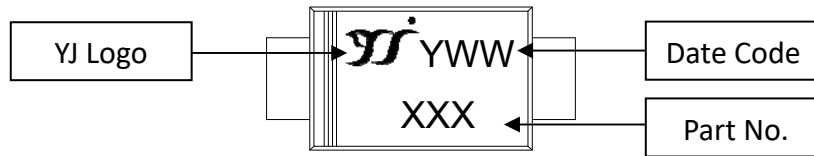


SOD-123FL	
Dim	Millimeters
P1	3.90
P2	1.90
Q1	1.00
Q2	1.50



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 17th week of 2024, date code is 417
The 17th week of 2025, date code is 517



H1AQ THRU H1KQ

Disclaimer

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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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