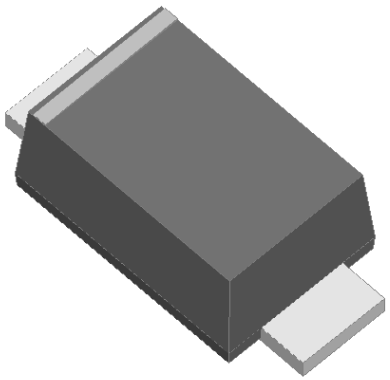
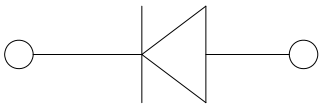
H1AQ THRU H1KQ

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 Date

- **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 (Ta=25℃ 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℃	I_{FSM}	A	30						
Storage temperature	T_{stg}	℃	-55 ~ +150						
Junction temperature	T_j	℃	-55 ~ +150						

■Electrical Characteristics (Ta=25℃ 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_{rr}=0.25A	50					75	
Maximum DC reverse current at rated DC blocking voltage	I_R	μA	T_j =25℃	5						
			T_j =125℃	100						
Typical junction capacitance	C_j	pF	V_R=4V, f=1 MHz	15			10		7	

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	H1AQ	H1BQ	H1DQ	H1FQ	H1GQ	H1JQ	H1KQ
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/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)

Figure.1:I_O-T_L Curve

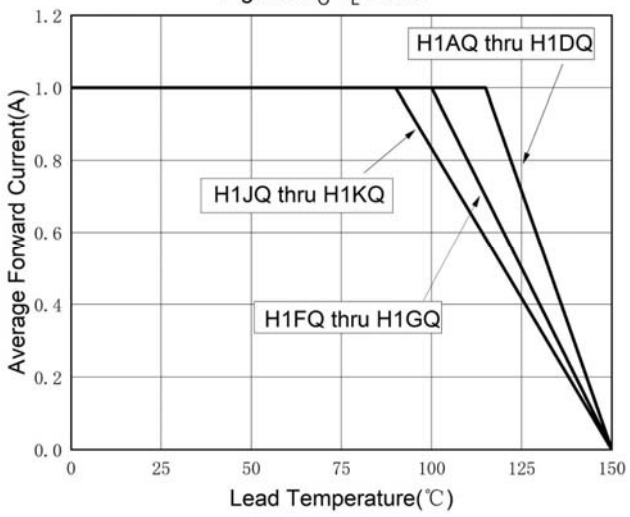


Fig.2: Forward Surge Current Capability

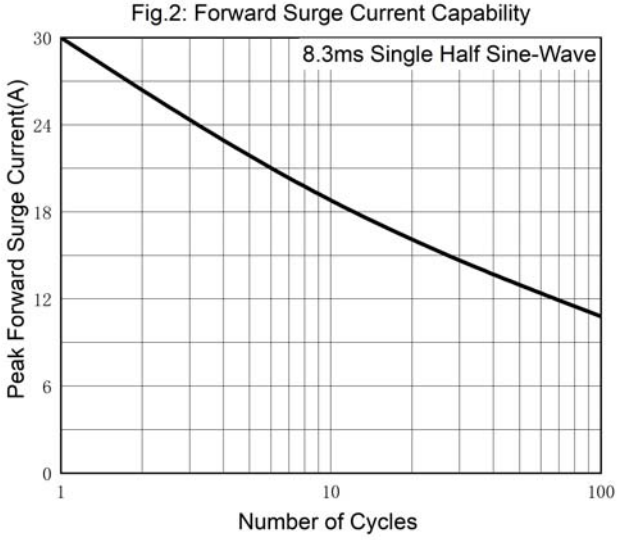


Fig.3:Typical Instantaneous Forward Characteristics

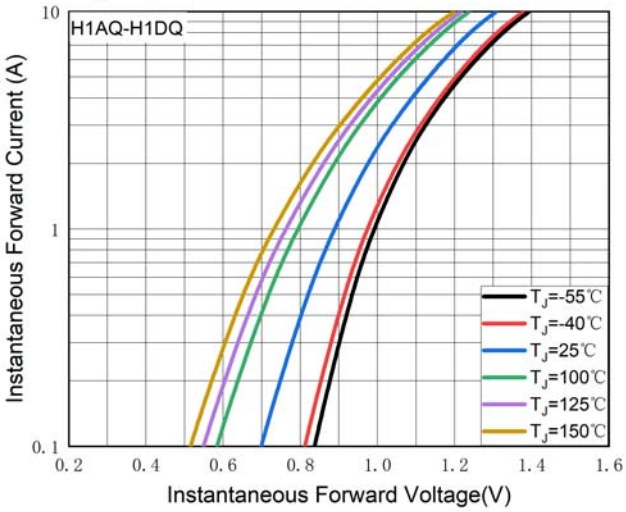


Fig.4:Typical Reverse Leakage Characteristics

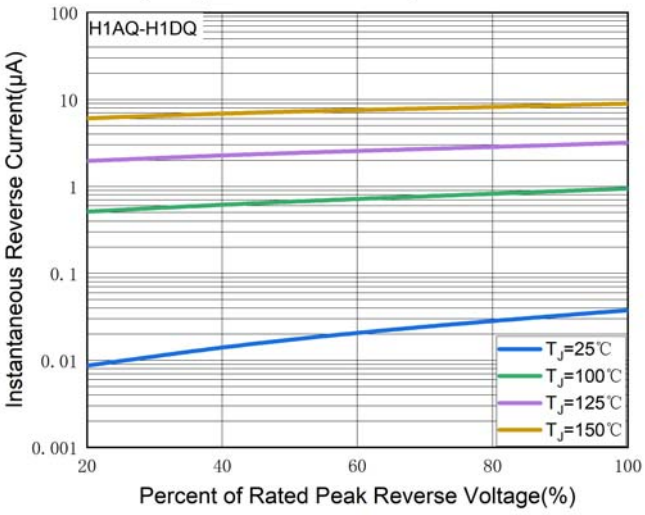


Fig.5:Typical Instantaneous Forward Characteristics

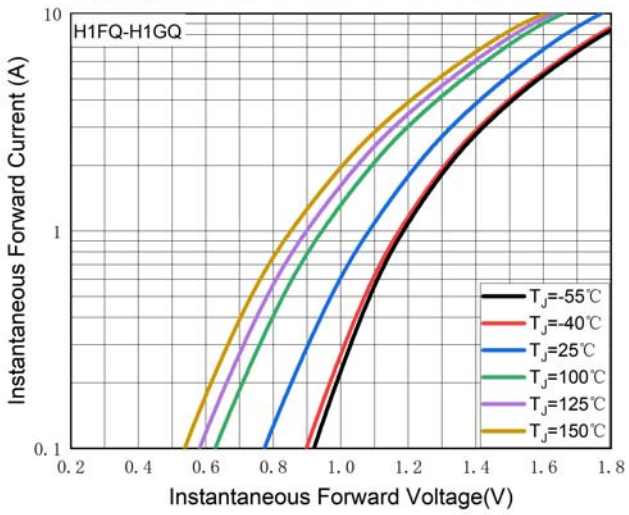


Fig.6:Typical Reverse Leakage Characteristics

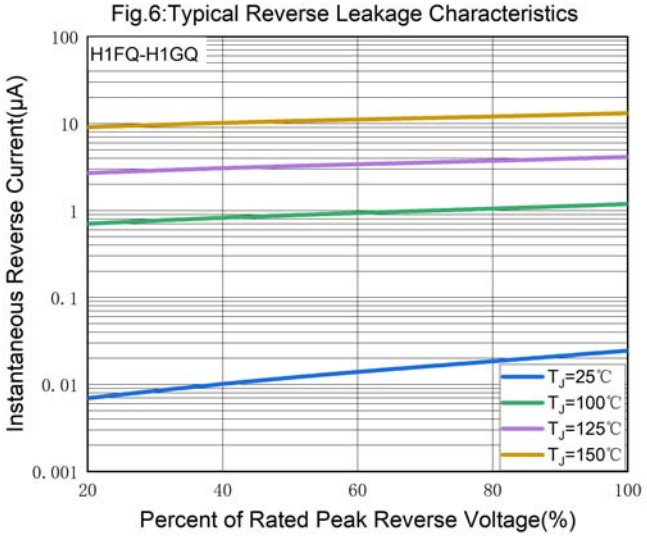


Fig.7:Typical Instantaneous Forward Characteristics

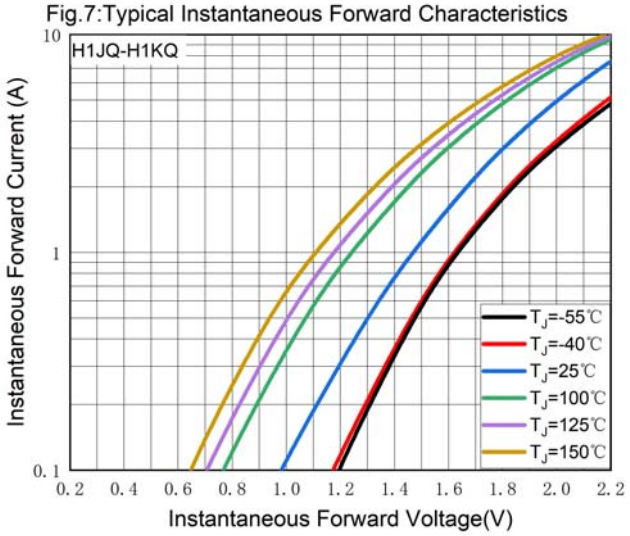


Fig.8:Typical Reverse Leakage Characteristics

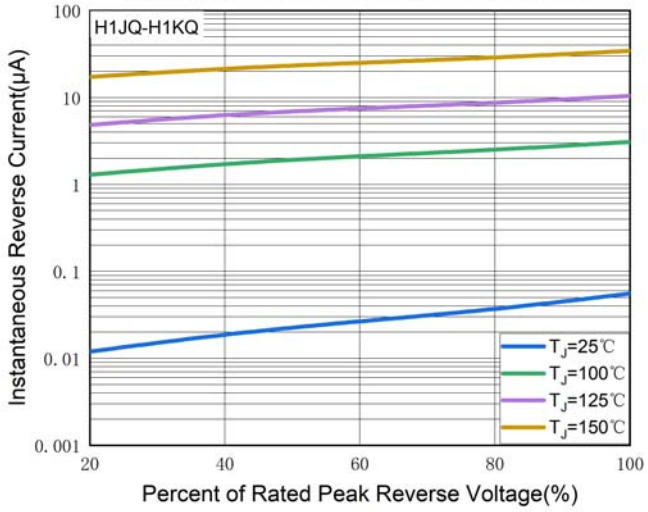
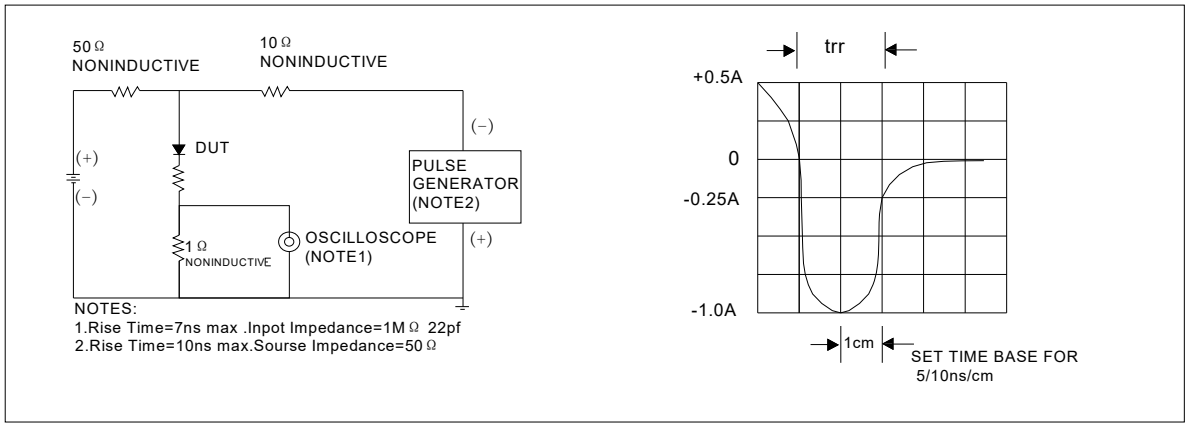


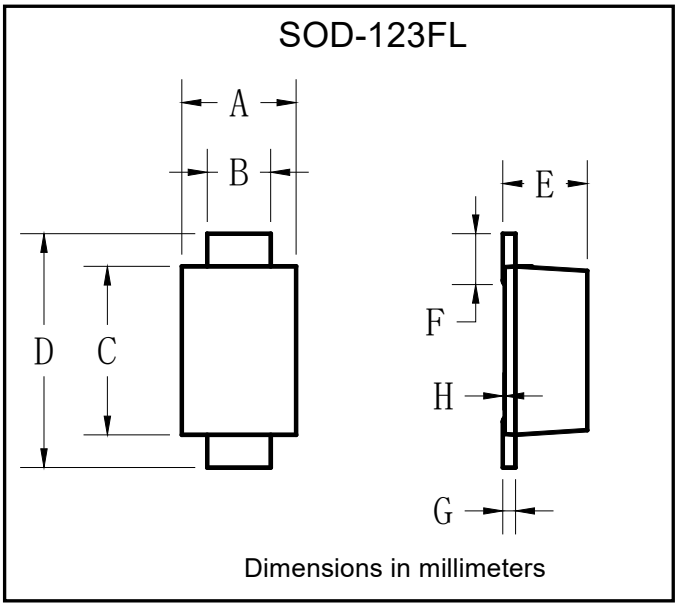
Fig.9: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

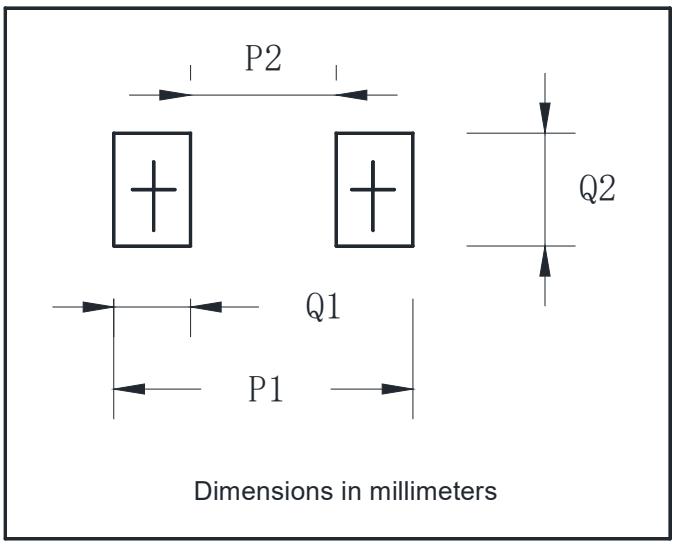
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
H1AQ ~ H1KQ	F1	0.0169	3000	30000	120000	7" reel

■ Outline Dimensions



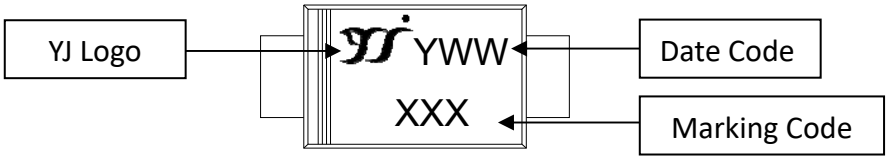
SOD-123FL		
Dim	Min	Max
A	1.60	1.90
B	0.90	1.10
C	2.55	2.85
D	3.60	3.90
E	1.00	1.20
F	0.40	0.90
G	0.10	0.25
H	0	0.05

■ Suggested pad layout



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

■ 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

Disclaimer

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