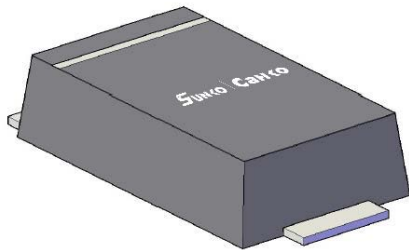


Surface Mount Fast Recovery Rectifier

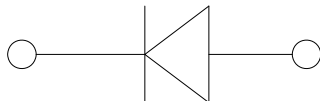


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for fast recovery
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer and telecommunication.



Mechanical Date

- **Package:** SOD-123HE
Molding compound meets UL 94 V-0 flammability rating, -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	F2AE	F2BE	F2DE	F2GE	F2JE	F2KE	F2ME
Device marking code			F2AE	F2BE	F2DE	F2GE	F2JE	F2KE	F2ME
Maximum Repetitive Peak Reverse Voltage	VRRM	V	50	100	200	400	600	800	1000
Maximum RMS Voltage	VRMS	V	35	70	140	280	420	560	700
Maximum DC blocking Voltage	VDC	V	50	100	200	400	600	800	1000
Average rectified output current @60Hz sine wave, Resistance load, Ta (FIG.1)	IO	A	2.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25°C	IFSM	A	50						
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			100						
Current squared time @1ms≤t8.3≤ms Tj=25°C, Rating of per diode	I²t	A²s	10.375						
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	Cj	pF	18				11		
Storage temperature	Tstg	°C	-55 ~ +150						
Junction temperature	Tj	°C	-55 ~ +150						

F2AE THRU F2ME

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	F2AE	F2BE	F2DE	F2GE	F2JE	F2KE	F2ME
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =2.0A	1.3						
Maximum reverse recovery time	t _r	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	150				250	500	
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	μA	T _j =25°C	5						
			T _j =125°C	100						

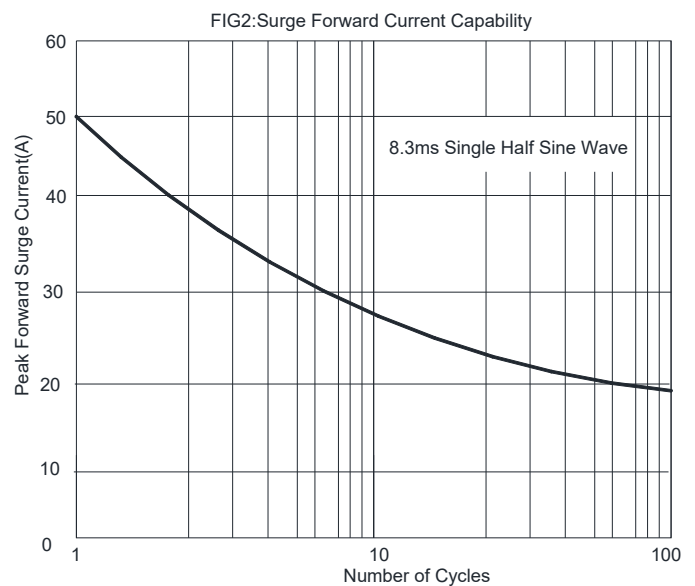
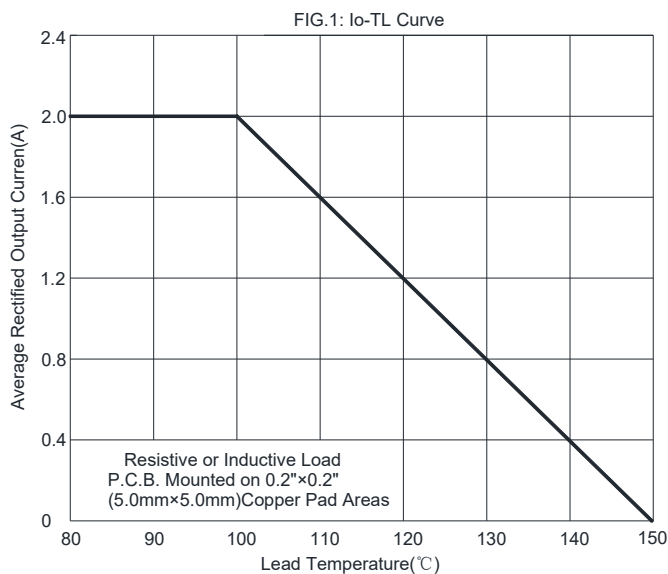
■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	F2AE	F2BE	F2DE	F2GE	F2JE	F2KE	F2ME
Typical Thermal resistance	R _{θJ-A} ⁽¹⁾	°C/W	90						
	R _{θJ-L} ⁽¹⁾		30						

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm*3mm.

■ Characteristics (Typical)



F2AE THRU F2ME

FIG.3: Typical Forward Characteristics

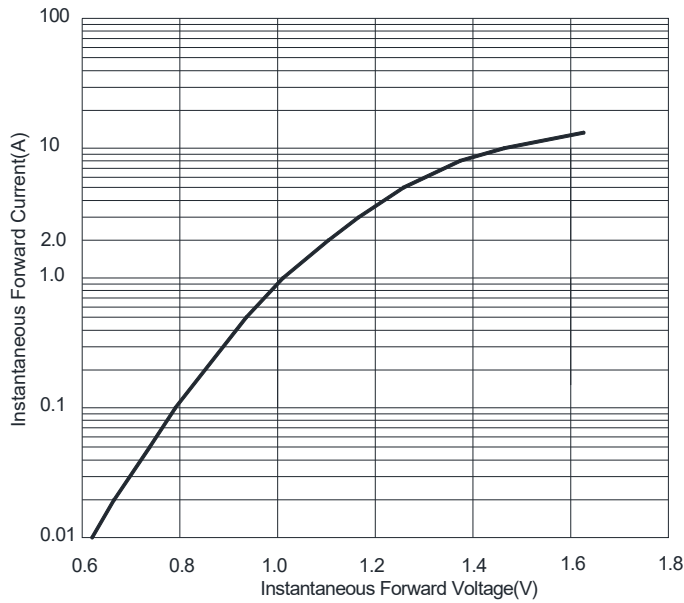


FIG4: Typical Reverse Characteristics

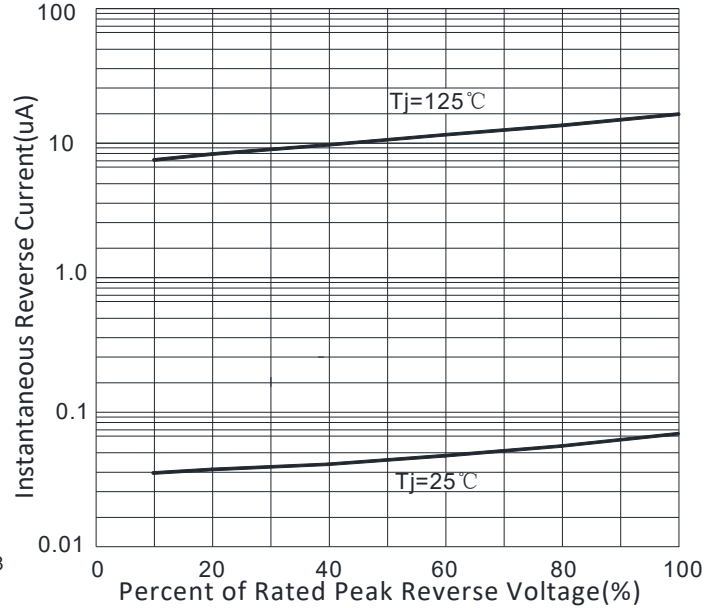
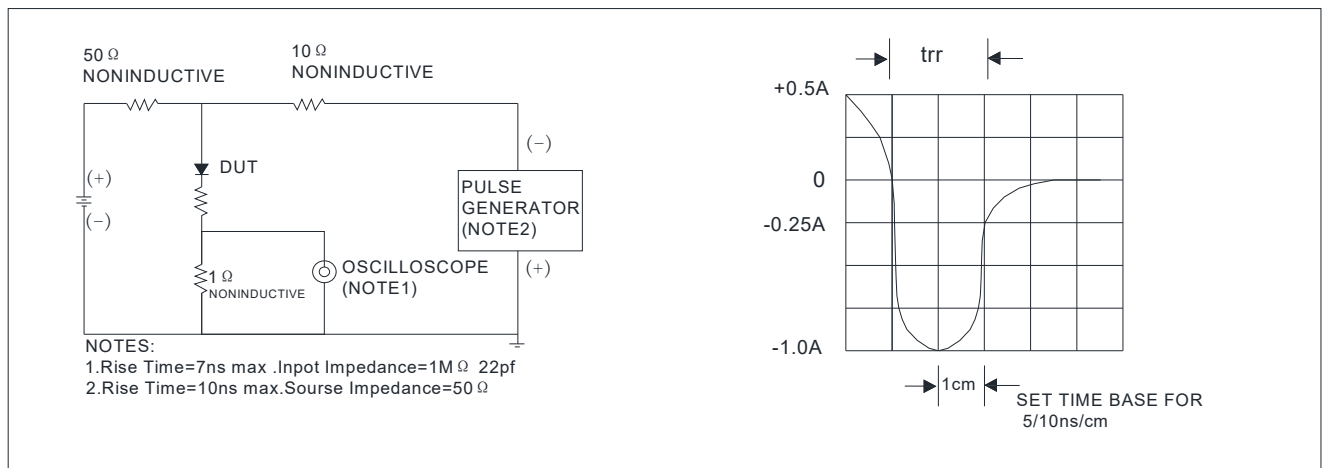
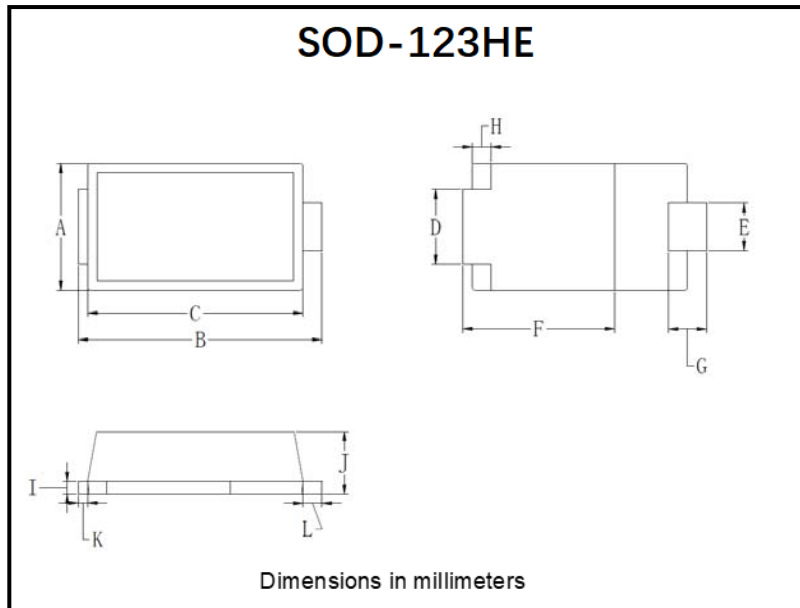


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

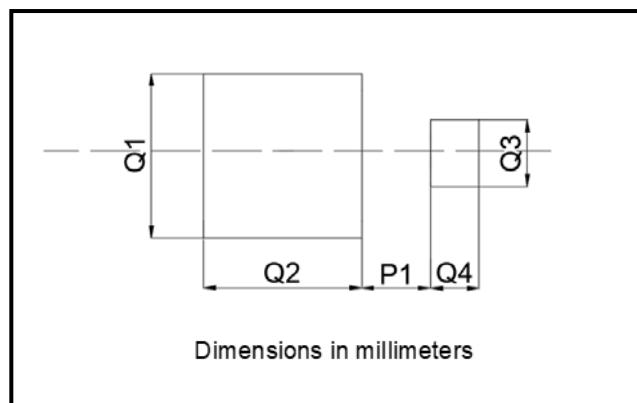


■ **Outline Dimensions**



SOD-123HE		
Dim	Min	Max
A	1.88	2.18
B	3.70	4.00
C	3.19	3.61
D	1.05	1.35
E	0.61	0.91
F	2.20	2.90
G	0.40	0.80
H	0.30 TYP	
I	0.10	0.30
J	0.85	1.15
K	0.00	0.30
L	0.15	0.45

■ **Suggested pad layout**



SOD-123HE	
Dim	Millimeters
P1	0.64
Q1	2.54
Q2	2.67
Q3	1.27
Q4	0.76

Disclaimer

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