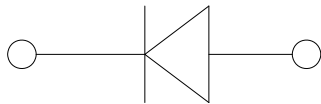


## Surface Mount High Efficient Rectifier



### Features

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

### Typical Applications

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

### Mechanical Data

- **Package:** DO-214AC (SMA)  
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	HS1A	HS1B	HS1D	HS1F	HS1G	HS1J	HS1K	HS1M
Device marking code			HS1A	HS1B	HS1D	HS1F	HS1G	HS1J	HS1K	HS1M
Maximum Repetitive Peak Reverse Voltage	VRRM	V	50	100	200	300	400	600	800	1000
Maximum RMS Voltage	VRMS	V	35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	VDC	V	50	100	200	300	400	600	800	1000
Average rectified output current @60Hz sine wave, Resistance load, TL (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							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>j</sub> =25°C			60							
Current squared time @1ms≤t <sub>1</sub> ≤8.3ms T <sub>j</sub> =25°C, Rating of per diode	I <sup>2</sup> t	A <sup>2</sup> s	3.735							
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C <sub>j</sub>	pF	17				12		7	
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	HS1A	HS1B	HS1D	HS1F	HS1G	HS1J	HS1K	HS1M
Maximum instantaneous forward voltage drop per diode	V <sub>F</sub>	V	I <sub>FM</sub> =1.0A	1.0			1.3		1.7		
Maximum reverse recovery time	t <sub>r</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 per diode	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5							
			T <sub>j</sub> =125°C	100							



# HS1A THRU HS1M

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

PARAMETER	SYMBOL	UNIT	HS1A	HS1B	HS1D	HS1F	HS1G	HS1J	HS1K	HS1M
Typical Thermal resistance	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	75							
	R <sub>θJ-L</sub> <sup>(1)</sup>		28							
	R <sub>θJ-C</sub> <sup>(1)</sup>		22							

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## ■ Characteristics (Typical)

FIG.1: I<sub>o</sub>-T<sub>L</sub> Cure

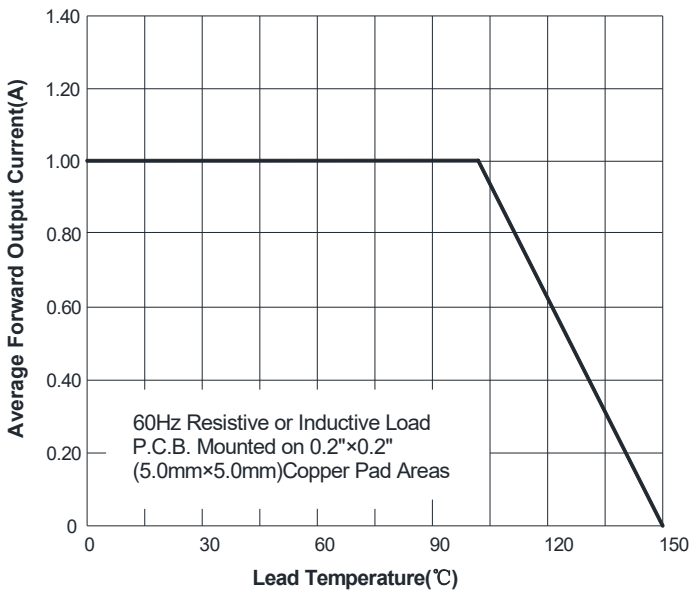


FIG.2: Forward Surge Current Capability

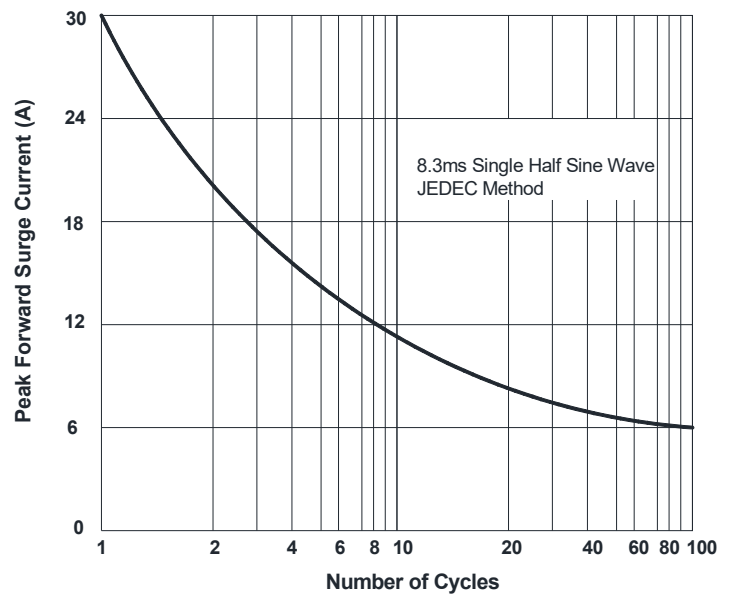


FIG.3: Typical Forward Characteristics

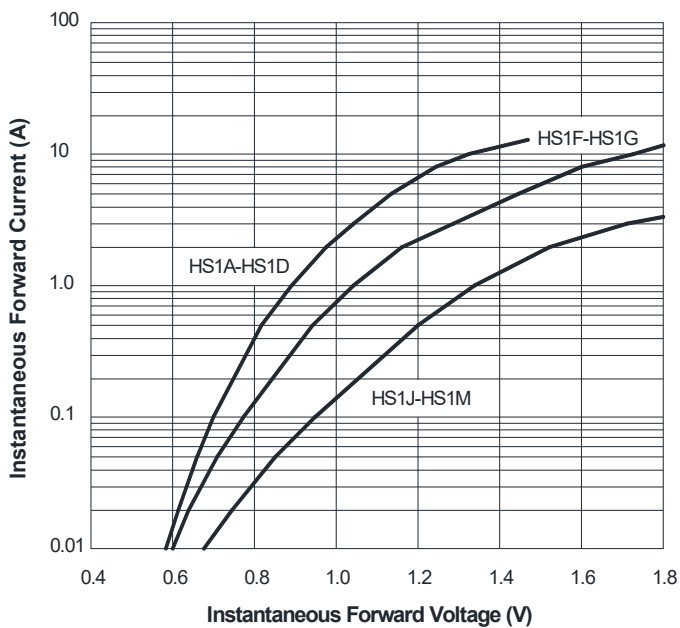
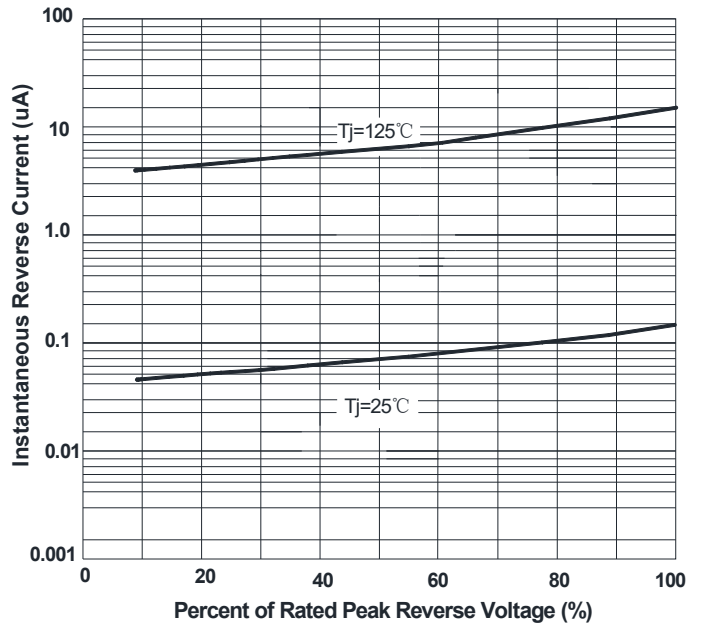


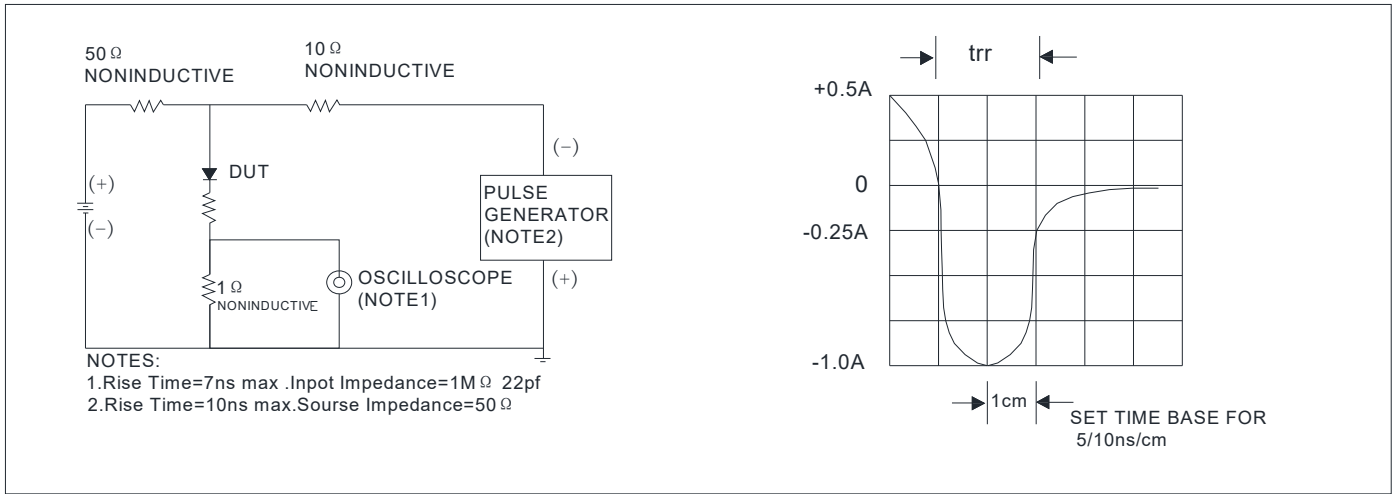
FIG.4: Typical Reverse Characteristics





# HS1A THRU HS1M

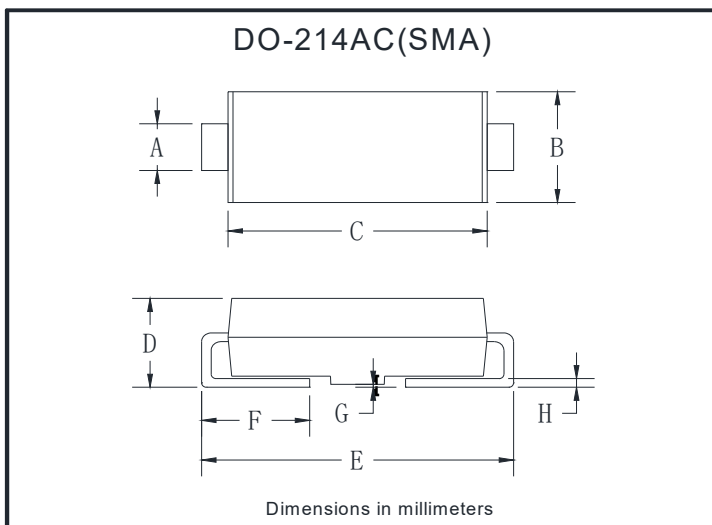
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
HS1A-HS1M	F1	Approximate 0.059	5000	10000	80000	13" reel
HS1A-HS1M	F2	Approximate 0.059	7500	15000	120000	13" reel
HS1A-HS1M	F3	Approximate 0.059	7500	15000	60000	13" reel
HS1A-HS1M	F4	Approximate 0.059	1800	14400	57600	7" reel
HS1A-HS1M	F5	Approximate 0.059	2000	16000	64000	7" reel
HS1A-HS1M	F6	Approximate 0.059	5000	10000	100000	13" reel

## Outline Dimensions

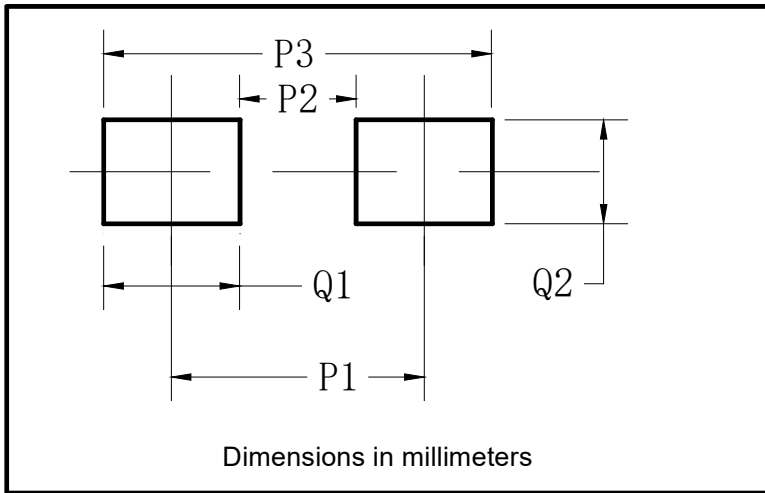


DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.06	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.08	0.20
H	0.15	0.31



## HS1A THRU HS1M

### ■ Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



## HS1A THRU HS1M

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