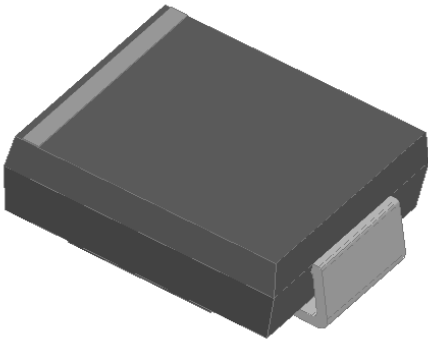


## Surface Mount High Efficient Rectifier

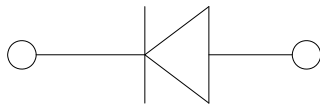


### Features

- 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-214AB (SMC)
- 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: Color band denotes the cathode end

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

PARAMETER	SYMBOL	UNIT	HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M
Device marking code			HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	50	100	200	300	400	600	800	1000
Maximum RMS Voltage	V <sub>RMS</sub>	V	35	70	140	210	280	420	560	700
Maximum DC blocking Voltage	V <sub>DC</sub>	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	3.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	A	100							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>j</sub> =25°C			200							
Current squared time @1ms≤t≤8.3ms T <sub>j</sub> =25°C	I <sup>2</sup> t	A <sup>2</sup> s	41.5							
Storage temperature	T <sub>stg</sub>	°C	-55 ~ +150							
Junction temperature	T <sub>j</sub>	°C	-55 ~ +150							



# HS3A THRU HS3M

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M
Maximum instantaneous forward voltage	V <sub>F</sub>	V	I <sub>FM</sub> =3.0A	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	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	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	60		40		24			

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

PARAMETER	SYMBOL	UNIT	HS3A	HS3B	HS3D	HS3F	HS3G	HS3J	HS3K	HS3M
Typical Thermal resistance	R <sub>θJ-A</sub> (1)	°C/W	48							
	R <sub>θJ-L</sub> (1)		15							
	R <sub>θJ-C</sub> (1)		12							

Note(1)

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x16 mm) copper pad areas

## ■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
HS3A~HS3M	F1	Approximate 0.248	3000	/	42000	13" reel

## ■ Characteristics(Typical)

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

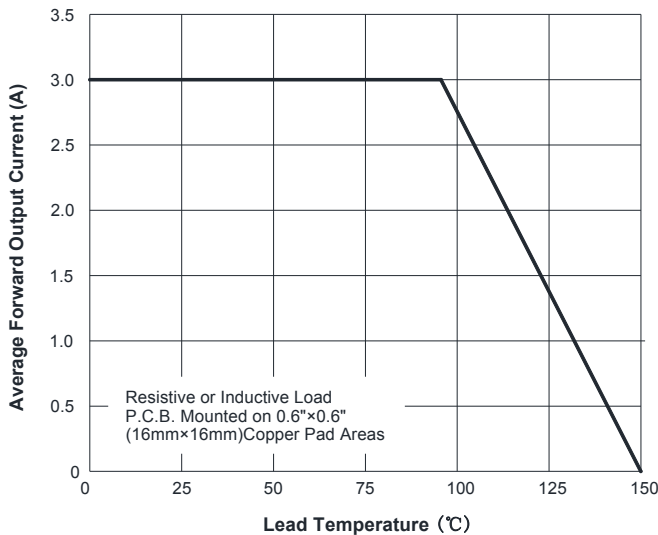
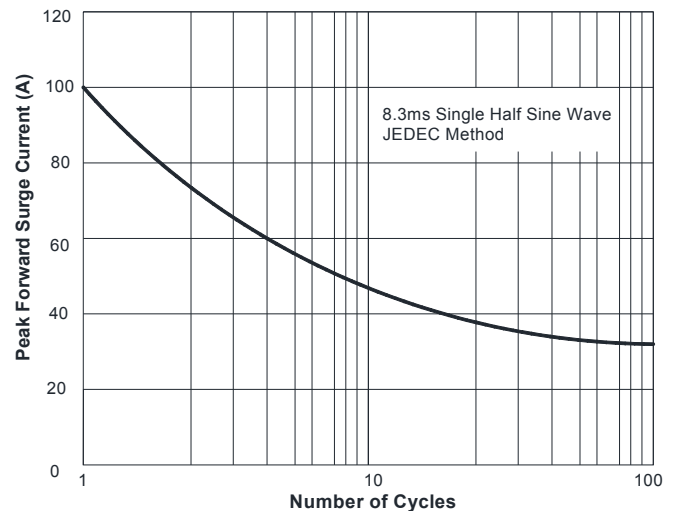


FIG.2: Forward Surge Current Capability





# HS3A THRU HS3M

FIG.3: Typical Forward Voltage

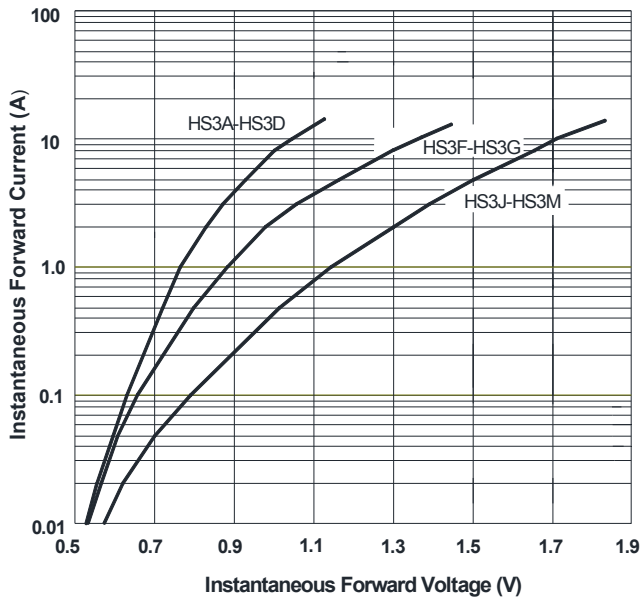


FIG.4: Typical Reverse Characteristics

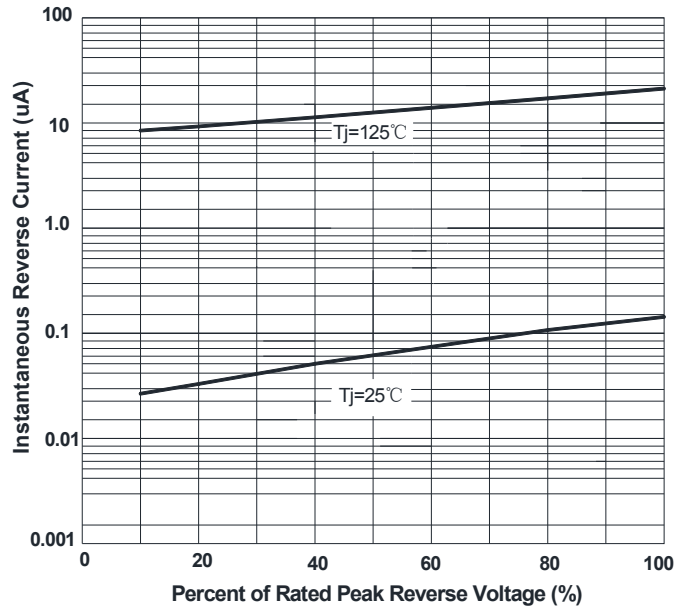
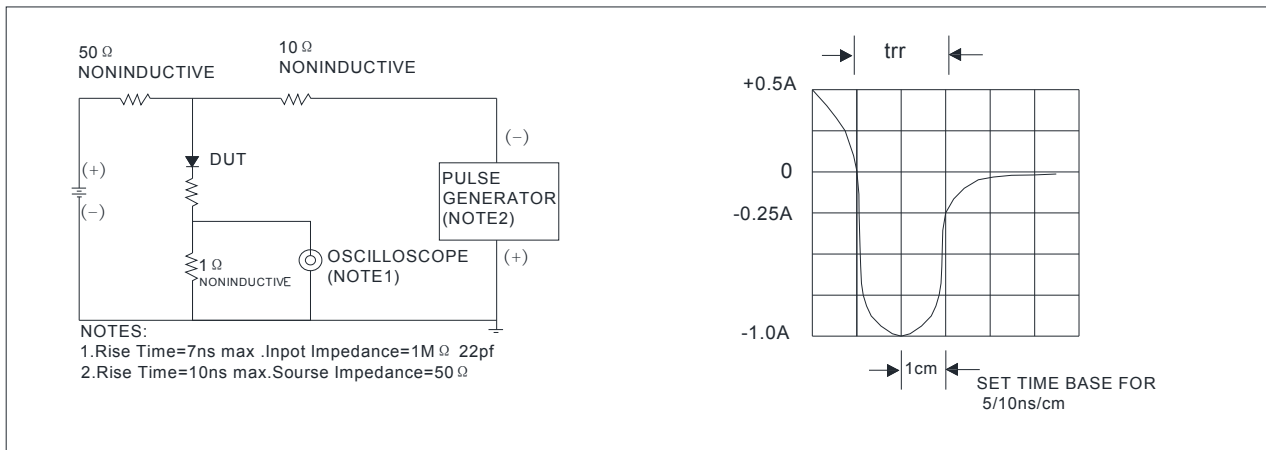
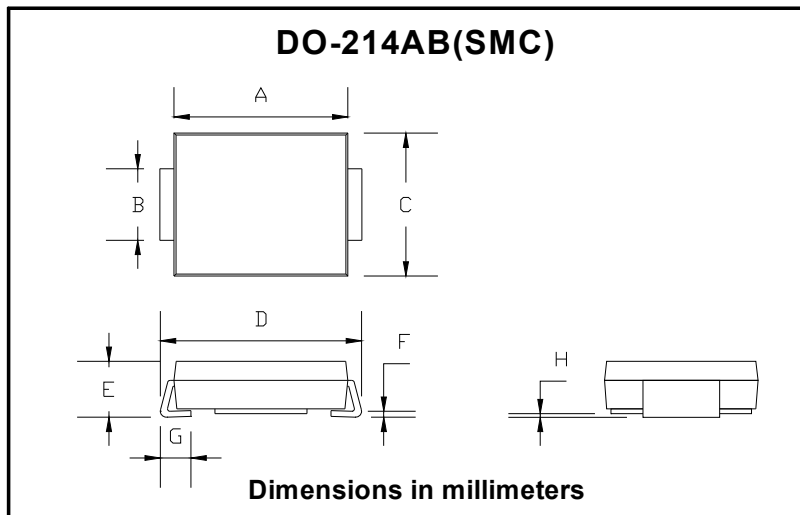


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■ Outline Dimensions

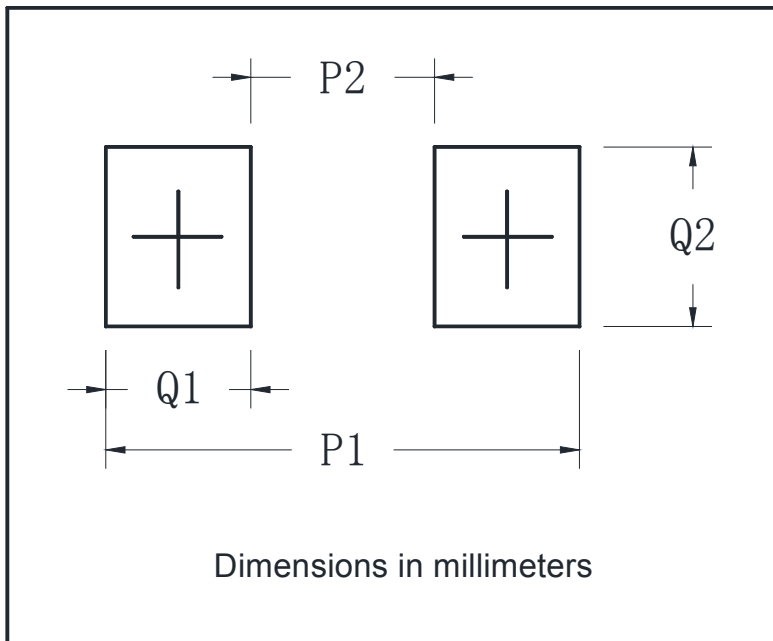


DO-214AB (SMC)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.10	0.20



## HS3A THRU HS3M

### ■ Suggested pad layout



DO-214AB (SMC)	
Dim	Min
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82



## HS3A THRU HS3M

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