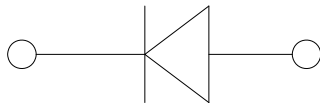
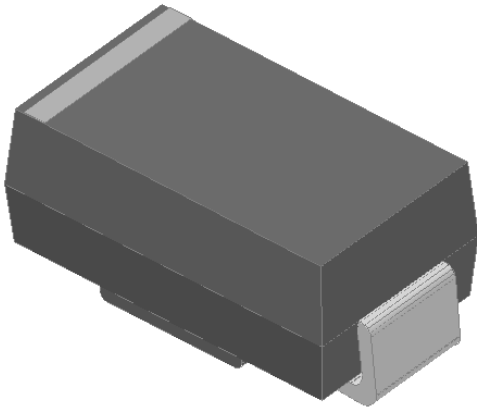


## Surface Mount High Efficient Rectifier



### 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
- **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	US1A	US1B	US1D	US1F	US1G	US1J	US1K	US1M
Device marking code			US1A	US1B	US1D	US1F	US1G	US1J	US1K	US1M
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≤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	15			10		7		
Storage temperature	T <sub>stg</sub>	°C	-55 ~ +150							
Junction temperature	T <sub>j</sub>	°C	-55 ~ +150							



# US1A THRU US1M

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	US1A	US1B	US1D	US1F	US1G	US1J	US1K	US1M
Maximum instantaneous forward voltage drop per diode	$V_F$	V	$I_{FM}=1.0A$	1.0			1.3		1.7		
Maximum reverse recovery time	$t_r$	ns	$I_F=0.5A, I_R=1.0A, I_r=0.25A$	50					75		
Maximum DC reverse current at rated DC blocking voltage per diode	IR	$\mu A$	$T_j=25^\circ\text{C}$	5							
			$T_j=125^\circ\text{C}$	100							

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

PARAMETER	SYMBOL	UNIT	US1A	US1B	US1D	US1F	US1G	US1J	US1K	US1M
Typical Thermal resistance	$R_{\theta J-A}^{(1)}$	$^\circ\text{C/W}$	70							
	$R_{\theta J-L}^{(1)}$		25							
	$R_{\theta J-C}^{(1)}$		20							

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:  $I_o$ -TL Cure

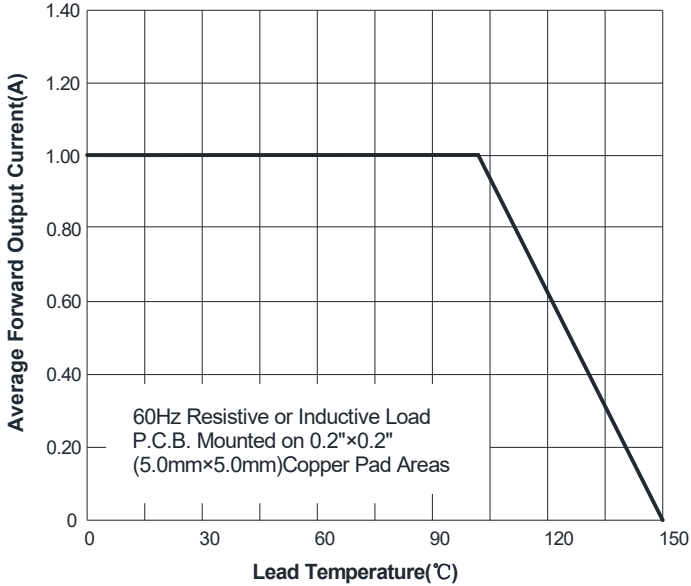
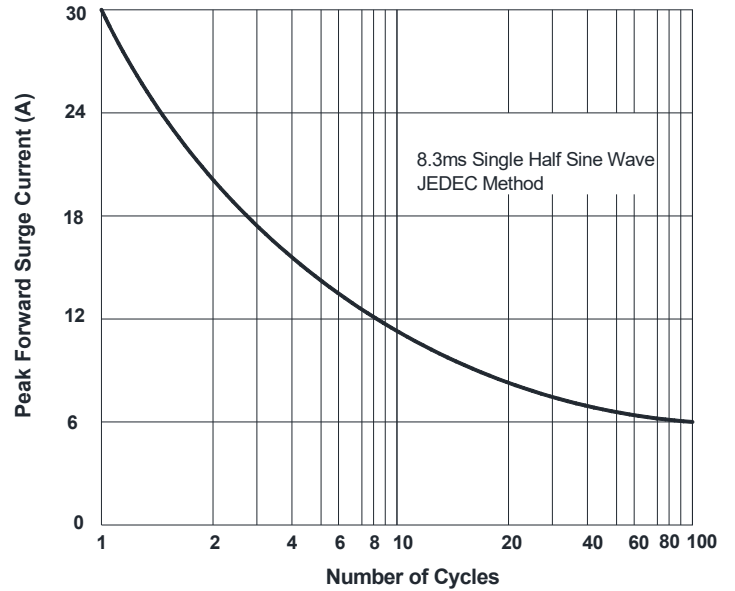


FIG.2: Forward Surge Current Capability





# US1A THRU US1M

FIG.3: Typical Forward Characteristics

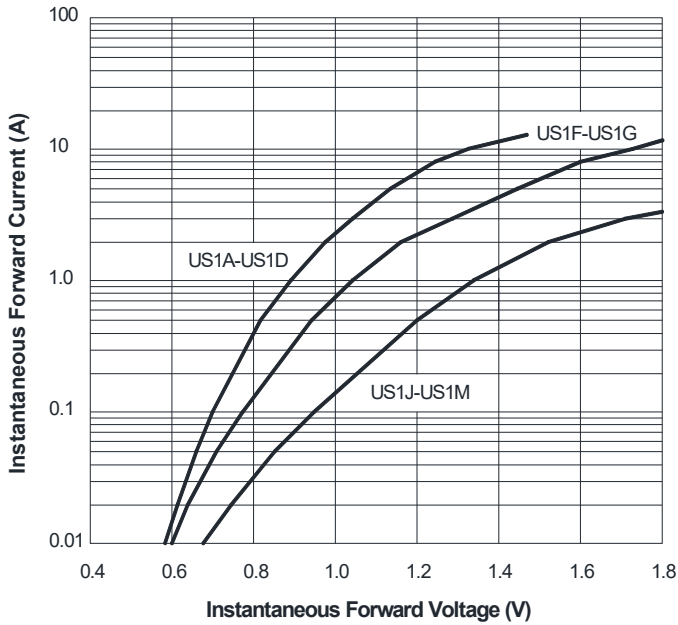


FIG.4: Typical Reverse Characteristics

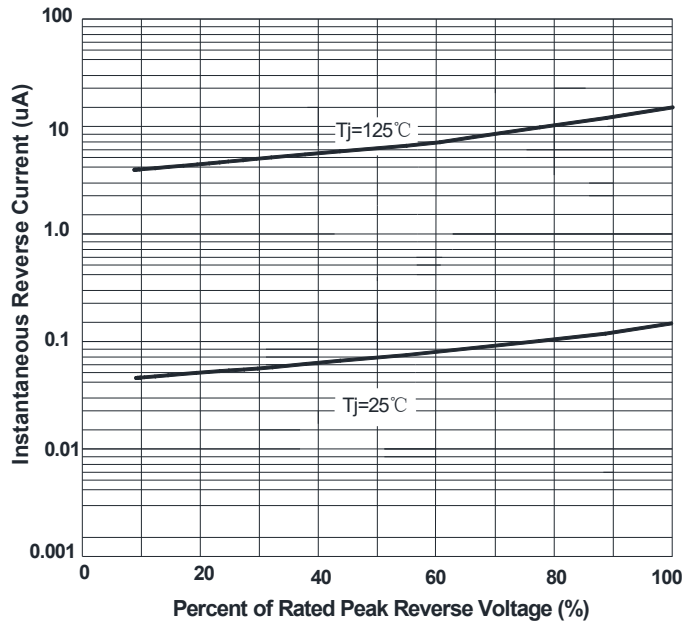
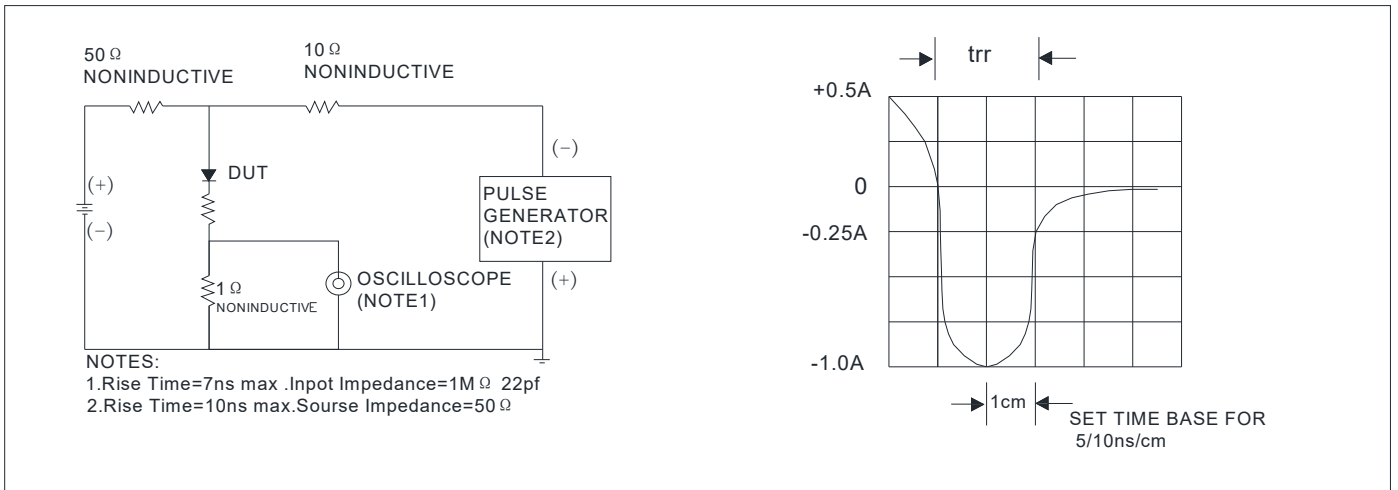


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



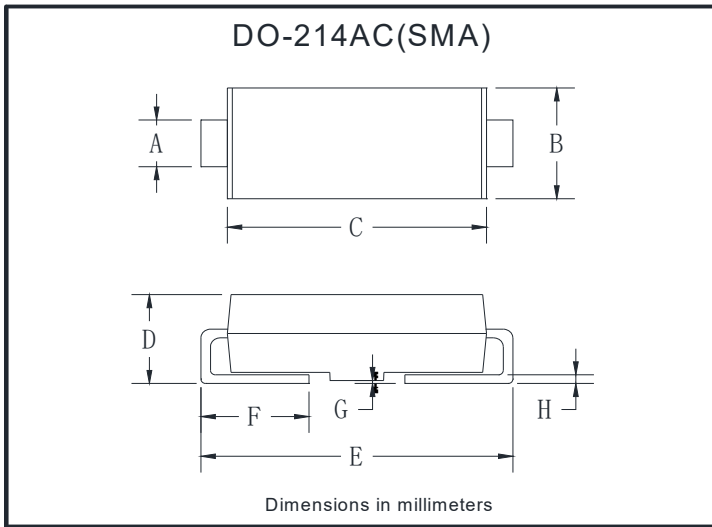
## Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
US1A-US1M	F1	Approximate 0.059	5000	10000	80000	13" reel
US1A-US1M	F2	Approximate 0.059	7500	15000	120000	13" reel
US1A-US1M	F3	Approximate 0.059	7500	15000	60000	13" reel
US1A-US1M	F4	Approximate 0.059	1800	14400	57600	7" reel
US1A-US1M	F5	Approximate 0.059	2000	16000	64000	7" reel
US1A-US1M	F6	Approximate 0.059	5000	10000	100000	13" reel



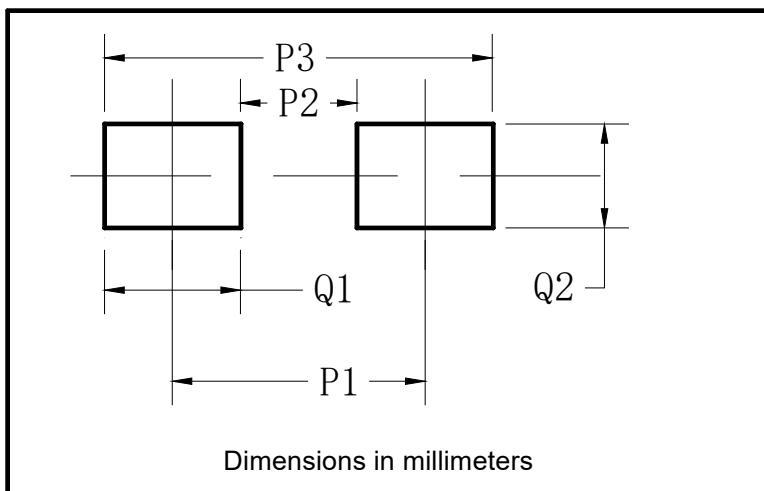
# US1A THRU US1M

## ■ 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

## ■ Suggested Pad Layout



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



## US1A THRU US1M

---

### Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

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.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.