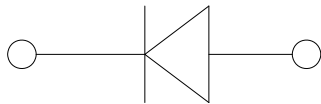


Surface Mount High Efficient Rectifier



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_a=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 _O	A	1.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	30							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			60							
Current squared time @1ms≤t≤8.3ms T _j =25°C, Rating of per diode	I ² t	A ² s	3.735							
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C _j	pF	15			10		7		
Storage temperature	T _{stg}	°C	-55 ~ +150							
Junction temperature	T _j	°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	$I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$	50					75		
Maximum DC reverse current at rated DC blocking voltage per diode	IR	μA	$T_j=25^\circ\text{C}$	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

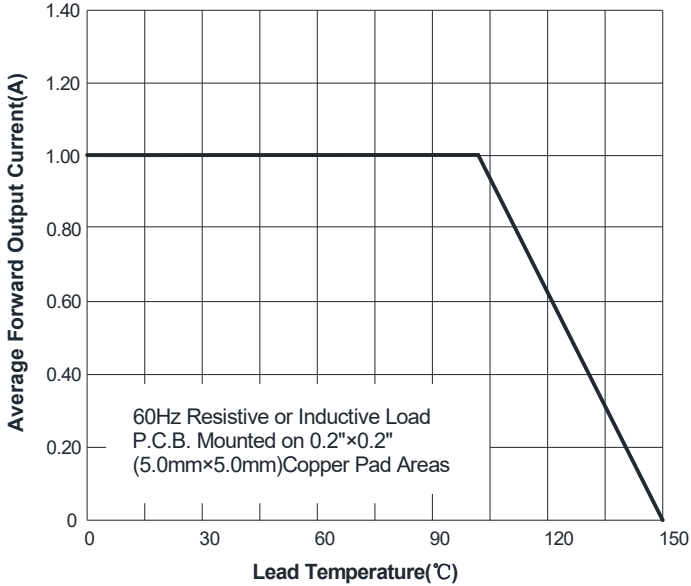
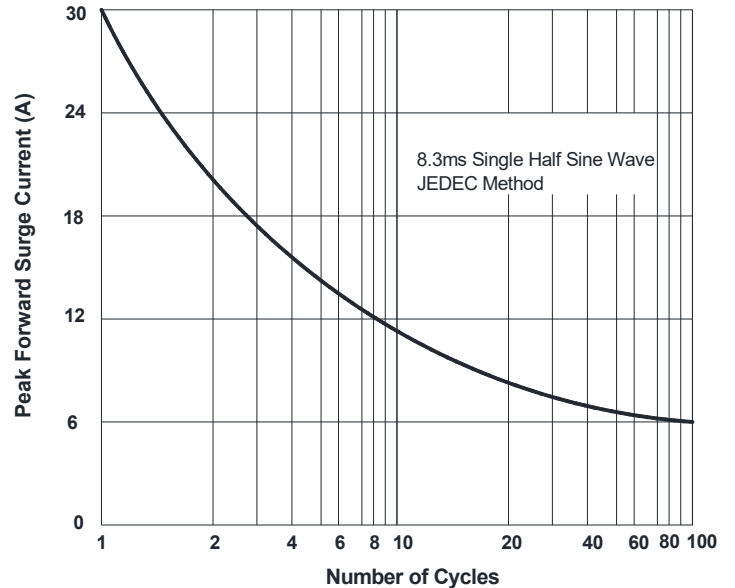


FIG.2: Forward Surge Current Capability





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FIG.3: Typical Forward Characteristics

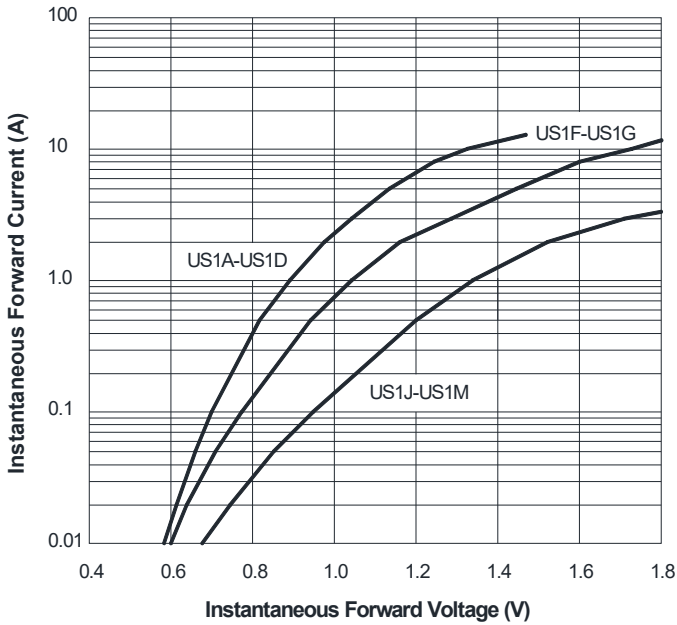


FIG.4: Typical Reverse Characteristics

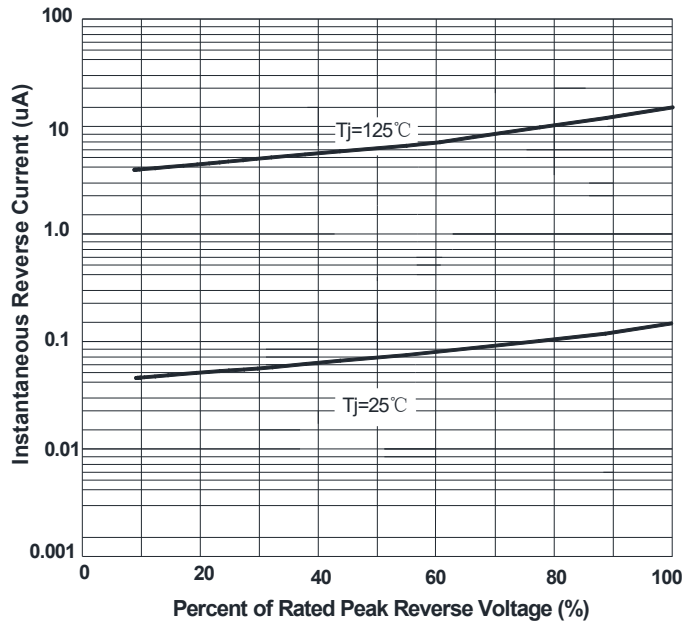
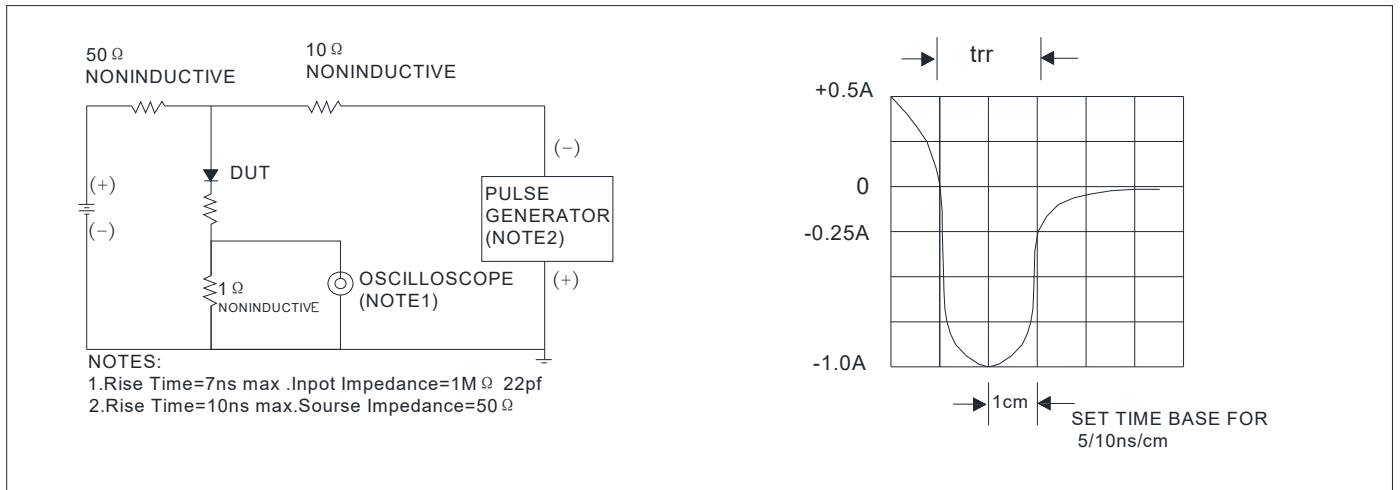


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



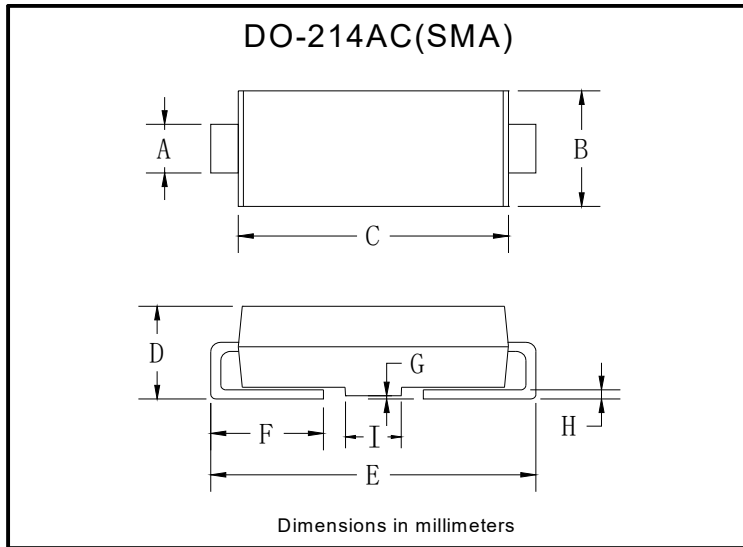
Ordering Information (Example)

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	/	80000	13" reel
US1A-US1M	F2	Approximate 0.059	7500	/	120000	13" reel
US1A-US1M	F3	Approximate 0.059	7500	/	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	/	100000	13" reel



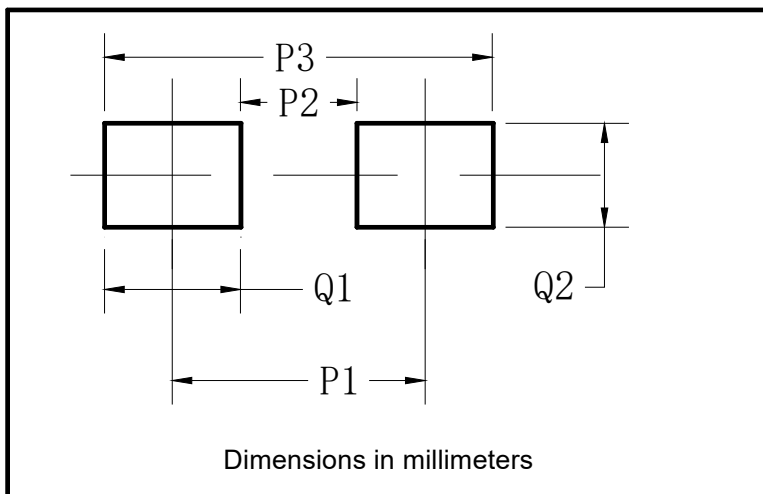
US1A THRU US1M

■ Outline Dimensions



DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.70	2.10

■ 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

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