

# US1AL THRU US1ML

## High Efficient Rectifier

### Features

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

### Typical Application

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

### Mechanical Data

- Package: SOD-123F  
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 (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	Unit	Conditions	US1XL							
				A	B	D	F	G	J	K	M
Repetitive Peak Reverse Voltage	$V_{RRM}$	V		50	100	200	300	400	600	800	1000
Average Forward Current	$I_{F(AV)}$	A	60HZ Half-sine wave,Resistance load, TL=110°C	1.0							
Surge(Nonrepetitive)Forward Current	$I_{FSM}$	A	60HZ Half-sine wave, 1 cycle, Ta=25°C	30							
Storage Temperature	$T_{stg}$	°C		-55 ~ +150							
Junction Temperature	$T_j$	°C		-55 ~ +150							

### Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	Unit	Conditions	US1XL							
				A	B	D	F	G	J	K	M
Peak Forward Voltage	$V_{FM}$	V	$I_{FM} = 1.0A$	1.0			1.3		1.7		
Peak Reverse Current	$I_{RRM1}$	$\mu A$	$V_{RM} = V_{RRM}$					10			
	$I_{RRM2}$							100			
Maximum reverse recovery time	$T_{rr}$	ns	$I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A$	50				75			
Thermal Resistance(Typical)	$R_{\theta J-A}$	°C/W	Between junction and ambient					75 <sup>1)</sup>			
	$R_{\theta J-L}$		Between junction and terminal					27 <sup>1)</sup>			

Notes:

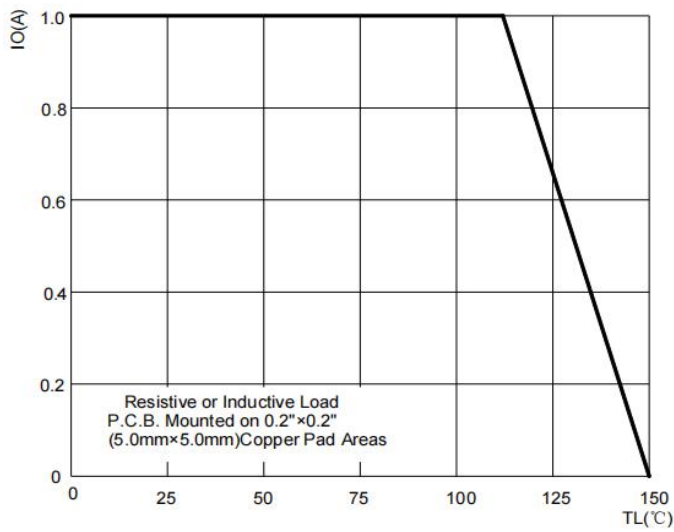
1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B. with 3.0 mm \* 3.0 mm copper pad areas.



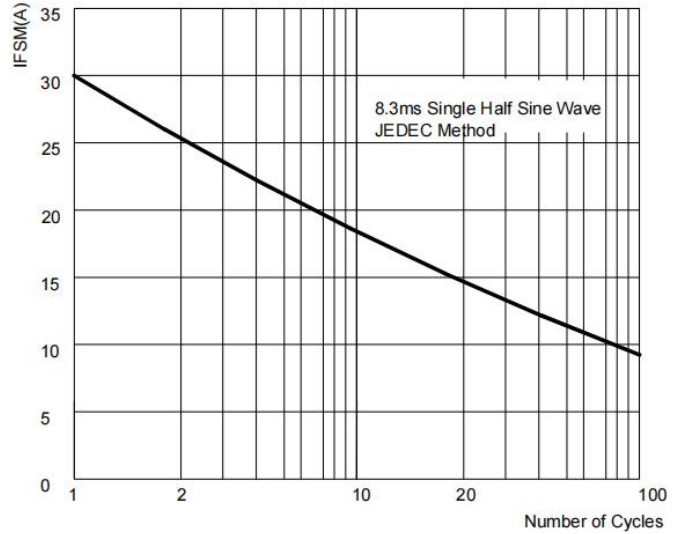
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### ■ Characteristics (Typical)

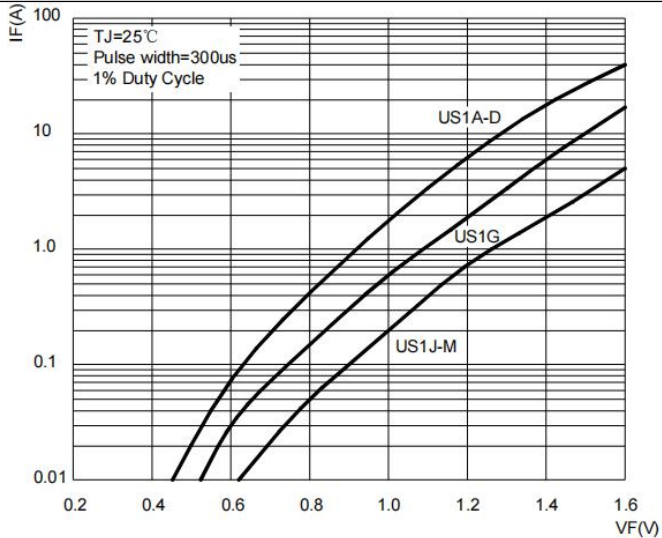
**FIG1: Forward Current Derating Curve**



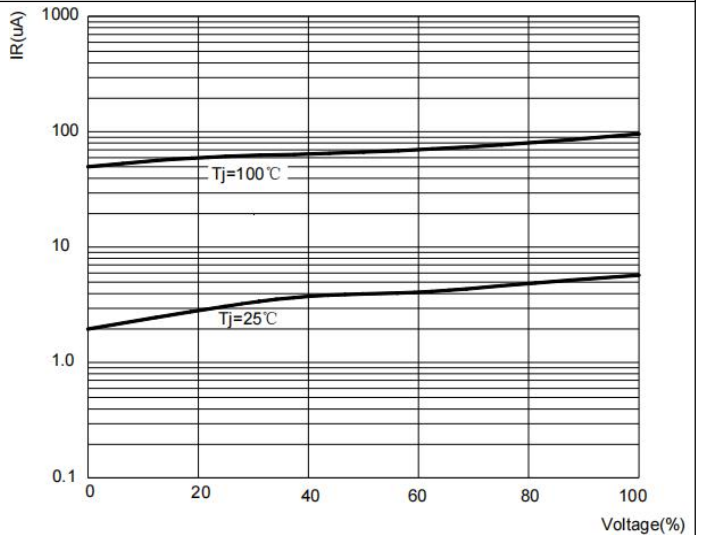
**FIG2: Surge Forward Current Capability**



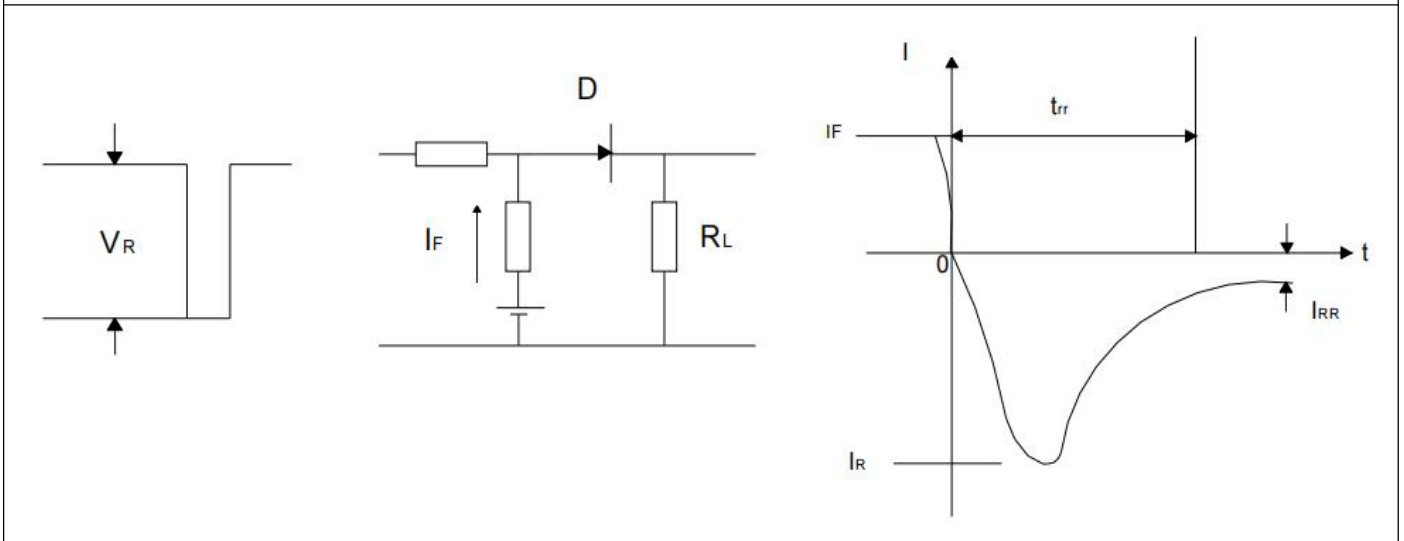
**FIG3: Instantaneous Forward Voltage**



**FIG4: Typical Reverse Characteristics**



**FIG5: Diagram of circuit and Testing wave form of reverse recovery time**



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### Ordering Information (Example)

PREFERED	PACKAGE CODE	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
US1AL~US1ML	SOD-123F	3000	15000	120000	7" reel
US1AL~US1ML	SOD-123F	10000	20000	160000	13" reel
US1AL~US1ML	SOD-123F	10000	30000	210000	13" reel

### Outline Dimensions

