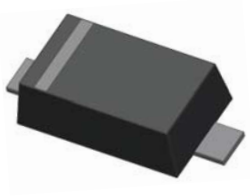
Ultra Fast Recovery Diodes

US1AF ~ US1MF

SOD-123F



1 2

Top View

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

■ Features

- Glass Passivated Chip
- Low Forward Voltage Drop And High Current Capability
- Low Reverse Leakage Current
- Epoxy meets UL 94 V-0 flammability rating
- Ultra Fast Switching For High Efficiency

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	US 1AF	US 1BF	US 1CF	US 1DF	US 1GF	US 1JF	US 1KF	US 1MF	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	400	600	800	1000	V
RMS Voltage	V_{RMS}	35	70	105	140	280	420	560	700	
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	400	600	800	1000	
Averaged Forward Current.T_L=110℃	I_{FAV}	1								A
Peak Forward Surge Current @ 8.3ms	I_{FSM}	30								
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	30								℃/W
Junction Temperature	Tj	150								℃
Operating Temperature	T_{OP}	-65 to 175								
Storage Temperature	Tstg	-65 to 175								

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Forward voltage	US1AF-1DF	V_F	I_{FM}=1A, T_J = 25°C			1	V
	US1GF					1.4	
	US1JF-1MF					1.7	
Reverse voltage leakage current		I_R	Ta = 25℃			10	uA
			Ta = 100℃			100	
Reverse Recovery Time	US1AF-US1GF	T_{rr}	I_F=0.5A, I_R=1A, I_{rr}=0.25A			50	ns
	US1JF~US1KF					75	
	US1MF					100	
Typical Junction Capacitance	US1AF-1GF	C_J	V_R=4V, f=1MHz			20	pF
	US1JF-1MF					17	

■ Marking

NO.	US1AF	US1BF	US1CF	US1DF	US1GF	US1JF	US1KF	US1MF
Marking	US1A	US1B	US1C	US1D	US1G	US1J	US1K	US1M

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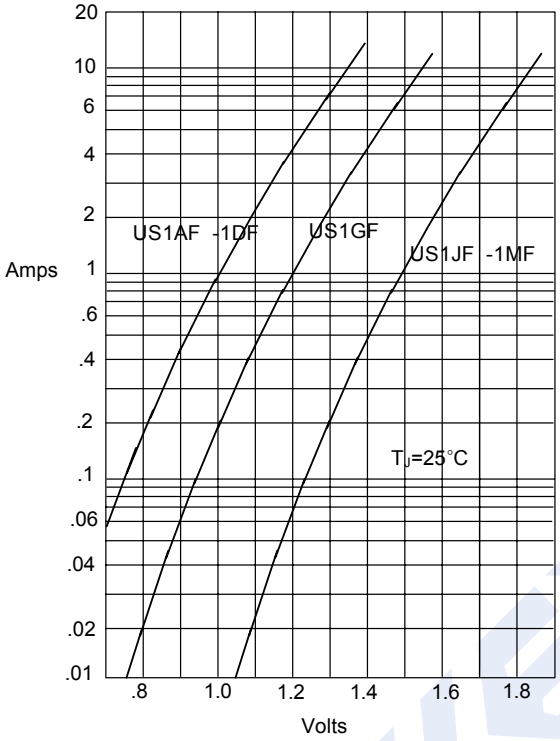
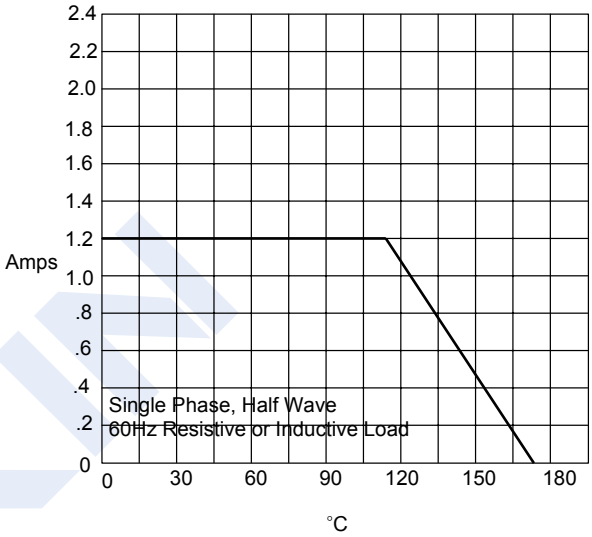
■ Typical Characterisitics

Figure 1
Typical Forward Characteristics



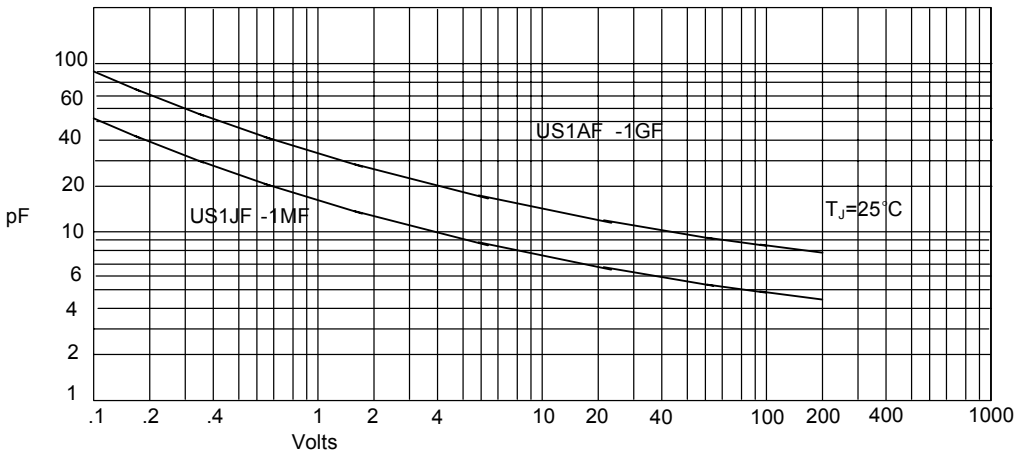
Instantaneous Forward Current - Amperes*versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes*versus*
Lead Temperature - °C

Figure 3
Junction Capacitance



Junction Capacitance - pF*versus*
Reverse Voltage - Volts

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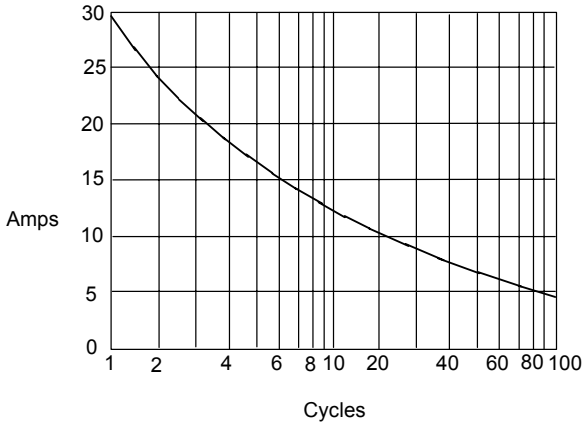
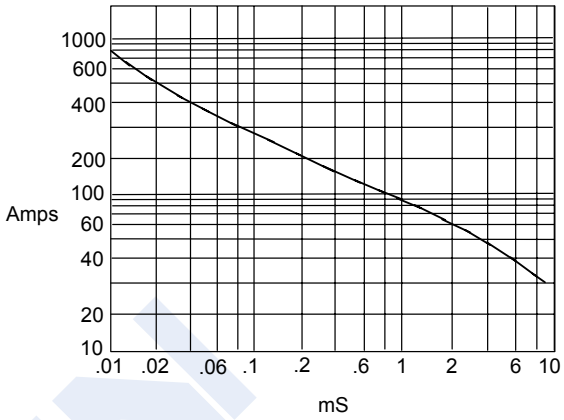
■ Typical Characterisitics

Figure 4
Peak Forward Surge Current



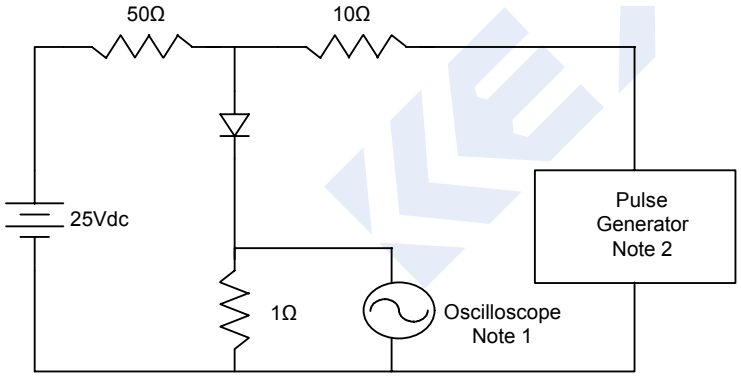
Peak Forward Surge Current - Amperesversus
Number Of Cycles At 60Hz - Cycles

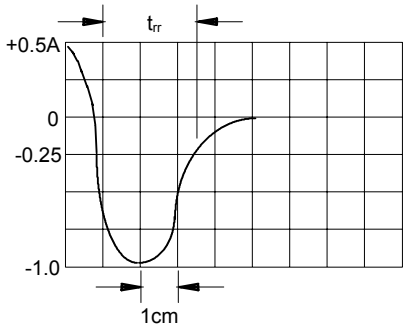
Figure 5
Peak Forward Surge Current



Peak Forward Surge Current - Amperes versus
Pulse Duration - Milliseconds (mS)

Figure 6
Reverse Recovery Time Characteristic And Test Circuit Diagram





Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
2. Rise Time = 10ns max.
Source impedance = 50 ohms
3. Resistors are non-inductive

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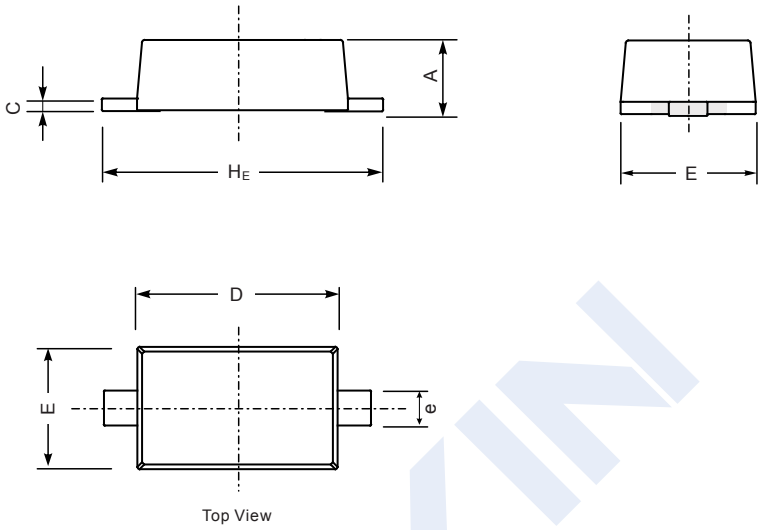
Plastic surface mounted package; 2 leads **SOD-123F**



UNIT		A	C	D	E	e	HE
mm	max	1.0	0.20	2.7	1.7	0.7	3.7
	min	0.8	0.05	2.5	1.5	0.5	3.3
mil	max	39	8	106	67	28	146
	min	31	2	98	59	20	130