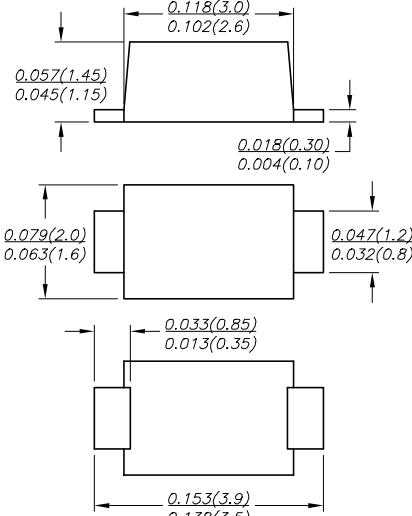


<p>SURFACE MOUNT FAST RECOVERY RECTIFIER</p> <p>SOD-123FL</p>  <p>Dimensions in inches and (millimeters)</p>	<p>Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0Ampere</p> <p>Features</p> <ul style="list-style-type: none"> ► Glass passivated device ► Ideal for surface mounted applications ► Low reverse leakage ► Metallurgically bonded construction ► High temperature soldering guaranteed: 260°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension <p>Mechanical Data</p> <p>Case: SOD-123FL molded plastic body over passivated chip Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026 Polarity: Color band denotes cathode end Mounting Position: Any Weight: 0.0007 ounce, 0.02 grams</p>																																																																																																																
<p>MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS</p> <p>Ratings at 25°C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.</p>																																																																																																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th><th style="text-align: center;">SYMBOLS</th><th style="text-align: center;">FR101W F1</th><th style="text-align: center;">FR102W F2</th><th style="text-align: center;">FR103W F3</th><th style="text-align: center;">FR104W F4</th><th style="text-align: center;">FR105W F5</th><th style="text-align: center;">FR106W F6</th><th style="text-align: center;">FR107W F7</th><th style="text-align: center;">UNITS</th></tr> </thead> <tbody> <tr> <td>Maximum repetitive peak reverse voltage</td><td style="text-align: center;">V_{RRM}</td><td style="text-align: center;">50</td><td style="text-align: center;">100</td><td style="text-align: center;">200</td><td style="text-align: center;">400</td><td style="text-align: center;">600</td><td style="text-align: center;">800</td><td style="text-align: center;">1000</td><td style="text-align: center;">V</td></tr> <tr> <td>Maximum RMS voltage</td><td style="text-align: center;">V_{RMS}</td><td style="text-align: center;">35</td><td style="text-align: center;">70</td><td style="text-align: center;">140</td><td style="text-align: center;">280</td><td style="text-align: center;">420</td><td style="text-align: center;">560</td><td style="text-align: center;">700</td><td style="text-align: center;">V</td></tr> <tr> <td>Maximum DC blocking voltage</td><td style="text-align: center;">V_{DC}</td><td style="text-align: center;">50</td><td style="text-align: center;">100</td><td style="text-align: center;">200</td><td style="text-align: center;">400</td><td style="text-align: center;">600</td><td style="text-align: center;">800</td><td style="text-align: center;">1000</td><td style="text-align: center;">V</td></tr> <tr> <td>Maximum average forward rectified current at $T_L=100^\circ\text{C}$ (NOTE 1)</td><td style="text-align: center;">$I_{(AV)}$</td><td colspan="6" style="text-align: center;">1.0</td><td style="text-align: center;">A</td></tr> <tr> <td>Peak forward surge current 8.3ms single half sine-wave superimposed on rated load</td><td style="text-align: center;">I_{FSM}</td><td colspan="6" style="text-align: center;">25.0</td><td style="text-align: center;">A</td></tr> <tr> <td>Maximum instantaneous forward voltage at 1.0A</td><td style="text-align: center;">V_F</td><td colspan="6" style="text-align: center;">1.3</td><td style="text-align: center;">V</td></tr> <tr> <td>Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$</td><td style="text-align: center;">I_R</td><td colspan="6" style="text-align: center;">5.0 50.0</td><td style="text-align: center;">μA</td></tr> <tr> <td>Maximum reverse recovery time (NOTE 2)</td><td style="text-align: center;">t_{rr}</td><td colspan="2" style="text-align: center;">150</td><td style="text-align: center;">250</td><td colspan="3" rowspan="4" style="text-align: center;">500</td><td style="text-align: center;">ns</td></tr> <tr> <td>Typical junction capacitance (NOTE 3)</td><td style="text-align: center;">C_J</td><td colspan="6" style="text-align: center;">15</td><td style="text-align: center;">pF</td></tr> <tr> <td>Typical thermal resistance (NOTE 4)</td><td style="text-align: center;">$R_{\theta JA}$</td><td colspan="6" style="text-align: center;">95</td><td style="text-align: center;">$^\circ\text{C/W}$</td></tr> <tr> <td>Operating junction and storage temperature range</td><td style="text-align: center;">T_J, T_{STG}</td><td colspan="6" style="text-align: center;">-55 to +150</td><td style="text-align: center;">$^\circ\text{C}$</td></tr> </tbody> </table>			SYMBOLS	FR101W F1	FR102W F2	FR103W F3	FR104W F4	FR105W F5	FR106W F6	FR107W F7	UNITS	Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V	Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V	Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V	Maximum average forward rectified current at $T_L=100^\circ\text{C}$ (NOTE 1)	$I_{(AV)}$	1.0						A	Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	25.0						A	Maximum instantaneous forward voltage at 1.0A	V_F	1.3						V	Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	I_R	5.0 50.0						μA	Maximum reverse recovery time (NOTE 2)	t_{rr}	150		250	500			ns	Typical junction capacitance (NOTE 3)	C_J	15						pF	Typical thermal resistance (NOTE 4)	$R_{\theta JA}$	95						$^\circ\text{C/W}$	Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150						$^\circ\text{C}$
	SYMBOLS	FR101W F1	FR102W F2	FR103W F3	FR104W F4	FR105W F5	FR106W F6	FR107W F7	UNITS																																																																																																								
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V																																																																																																								
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V																																																																																																								
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V																																																																																																								
Maximum average forward rectified current at $T_L=100^\circ\text{C}$ (NOTE 1)	$I_{(AV)}$	1.0						A																																																																																																									
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	25.0						A																																																																																																									
Maximum instantaneous forward voltage at 1.0A	V_F	1.3						V																																																																																																									
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	I_R	5.0 50.0						μA																																																																																																									
Maximum reverse recovery time (NOTE 2)	t_{rr}	150		250	500			ns																																																																																																									
Typical junction capacitance (NOTE 3)	C_J	15						pF																																																																																																									
Typical thermal resistance (NOTE 4)	$R_{\theta JA}$	95						$^\circ\text{C/W}$																																																																																																									
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150						$^\circ\text{C}$																																																																																																									

Note: 1.Averaged over any 20ms period.

2.Measured with $IF=0.5\text{A}$, $IR=1\text{A}$, $I_{rr}=0.25\text{A}$.

3.Measured at 1MHz and applied reverse voltage of 4.0V D.C.

4.P.C.B. mounted with $0.2 \times 0.2"$ (5.0x5.0mm) copper pad areas

RATINGS AND CHARACTERISTIC CURVES FR101W THRU FR107W

FIG. 1- FORWARD CURRENT DERATING CURVE

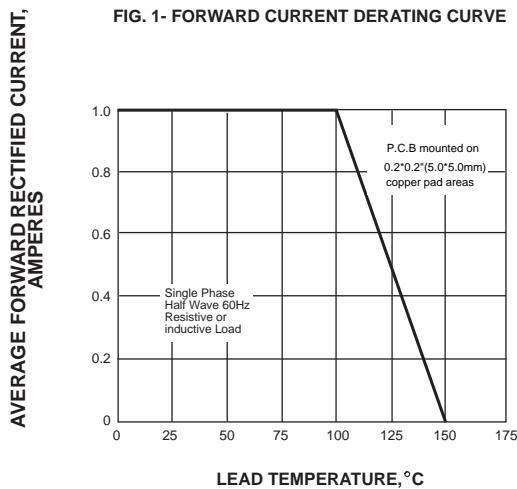


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

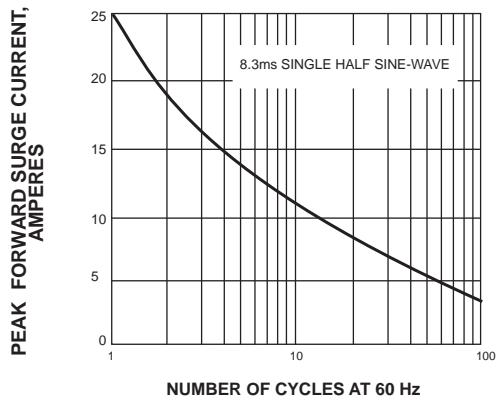


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

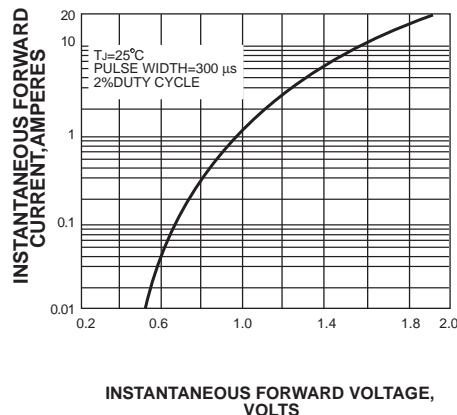


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

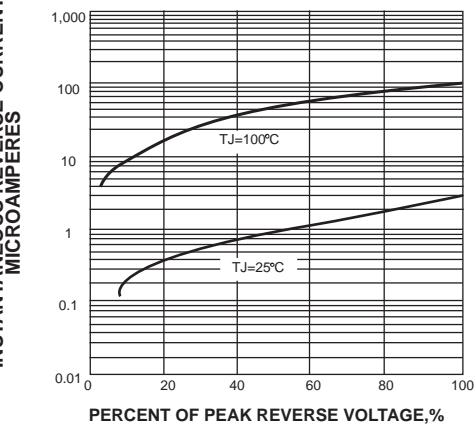


FIG. 5-TYPICAL JUNCTION CAPACITANCE

