

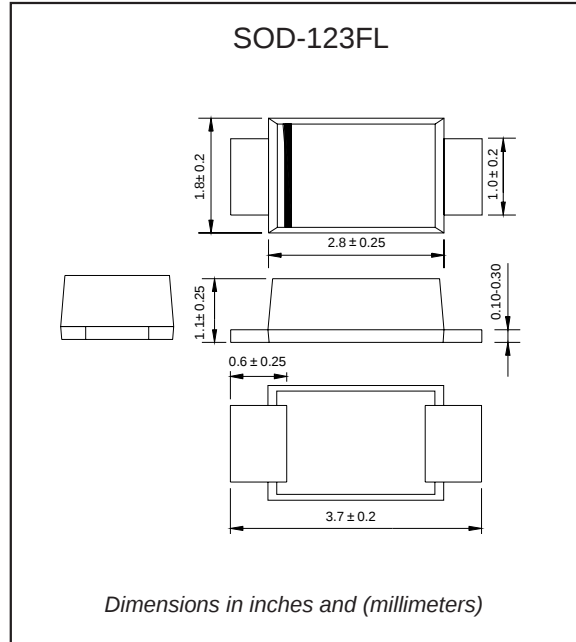
Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High forward surge current capability
- High temperature soldering guaranteed: 260°C/10 seconds
- Compliant to RoHS Directive 2011/65/EU
- Compliant to Halogen-free

Mechanical data

- **Case**: JEDEC SOD-123FL molded plastic body
- **Terminals**: Plated axial leads, solderable per MIL-STD-750, Method 2026
- **Polarity**: Color band denotes cathode end
- **Mounting Position**: Any

Package outline



Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	SYMBOLS	DS12W	DS13W	DS14W	DS15W	DS16W	DS18W	DS110W	DS115W	DS120W	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	50	60	80	100	150	200	V
Maximum RMS voltage	V _{RMS}	14	21	28	35	42	56	70	105	140	V
Maximum DC blocking voltage	V _{DC}	20	30	40	50	60	80	100	150	200	V
Maximum average forward rectified current at T _L (see fig.1)	I _(AV)	1.0									A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	30.0									A
Maximum instantaneous forward voltage at 1.0A	V _F	0.55			0.70		0.85		0.92		V
Maximum DC reverse current T _A =25°C at rated DC blocking voltage T _A =100°C	I _R	0.5					0.1				mA
		10.0					5.0		2.0		
Typical junction capacitance (NOTE 1)	C _J	110									pF
Typical thermal resistance (NOTE 2)	R _{θJA}	92									°C/W
Operating junction temperature range	T _J	-55 to +150									°C
Storage temperature range	T _{STG}	-55 to +150									°C

Note:1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. P.C.B. mounted with 2.0x2.0"(5.0x5.0cm) copper pad areas

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

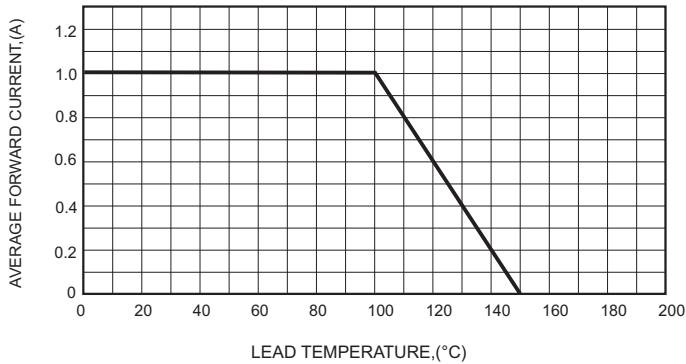


FIG.2-TYPICAL FORWARD CHARACTERISTICS

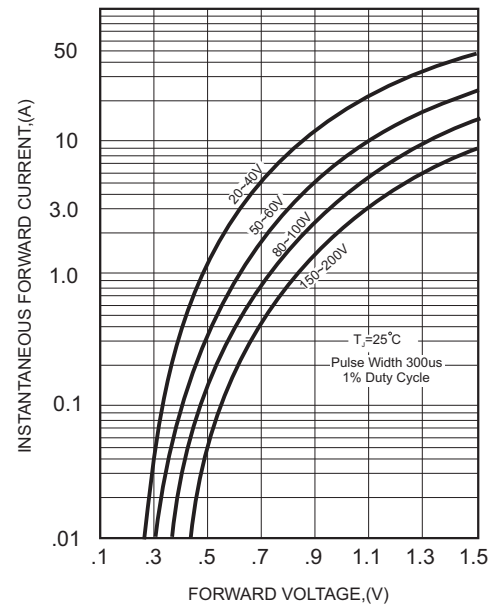


FIG.3-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

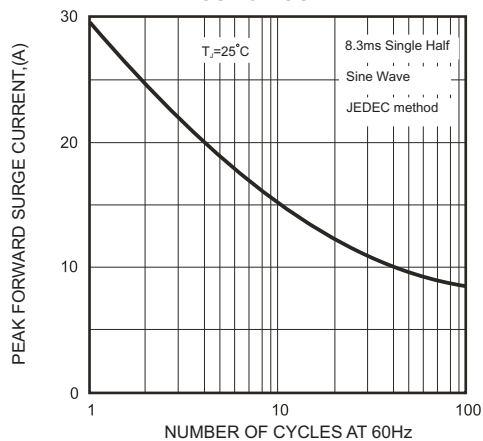


FIG.4-TYPICAL JUNCTION CAPACITANCE

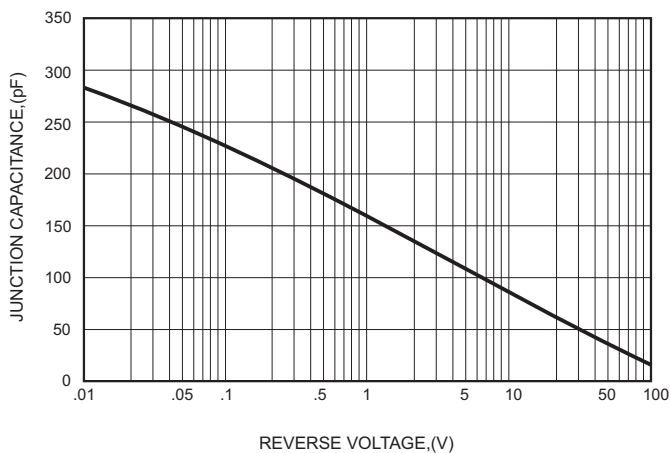
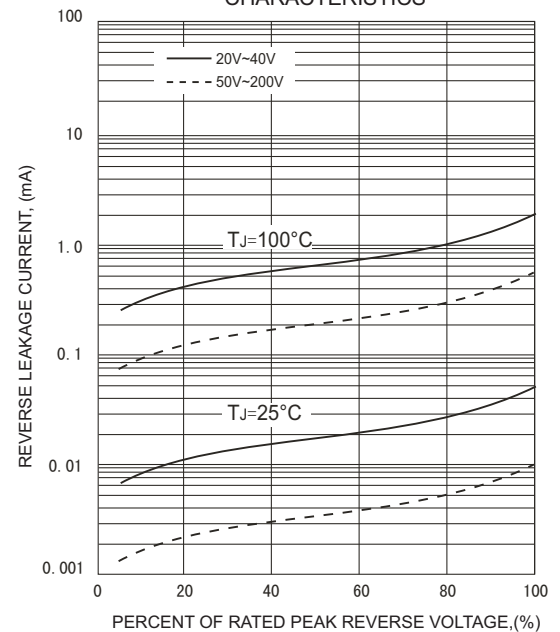


FIG.5 - TYPICAL REVERSE CHARACTERISTICS



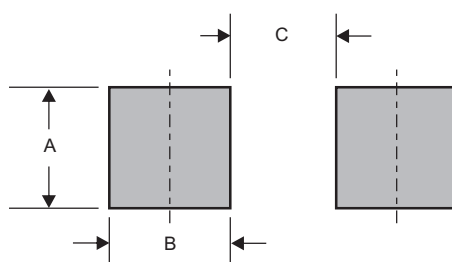
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
DS12W	K12
DS13W	K13
DS14W	K14
DS15W	K15
DS16W	K16
DS18W	K18
DS110W	K110
DS115W	K115
DS120W	S120

Suggested solder pad layout

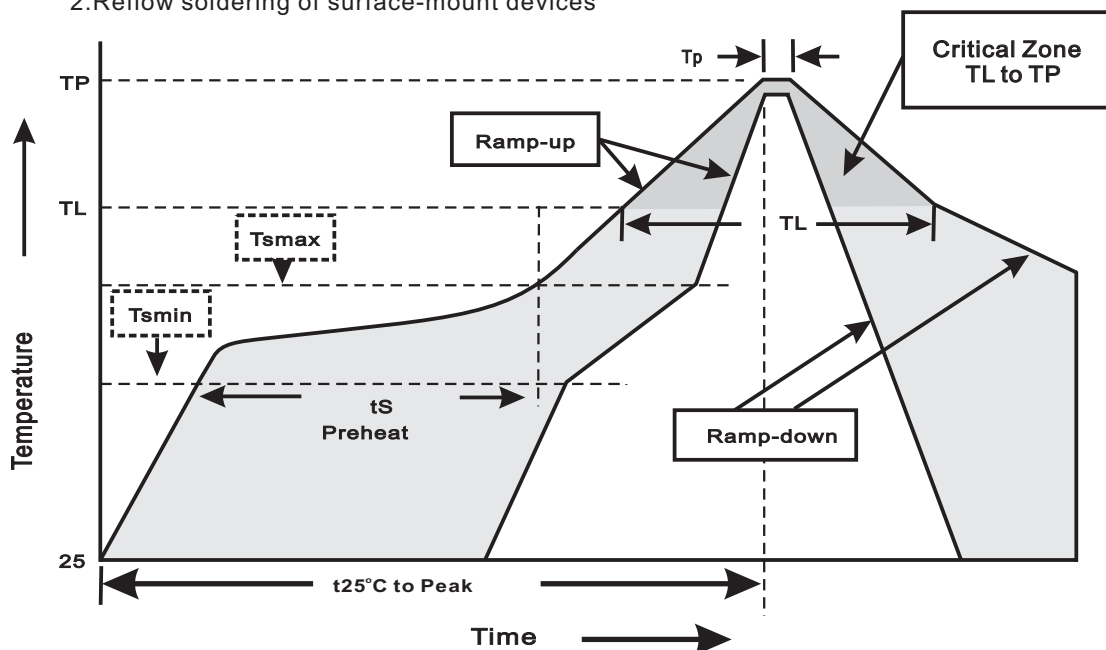


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123FL	0.075 (1.90)	0.055 (1.40)	0.075 (1.90)

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{min}) -Temperature Max(T_{max}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$