

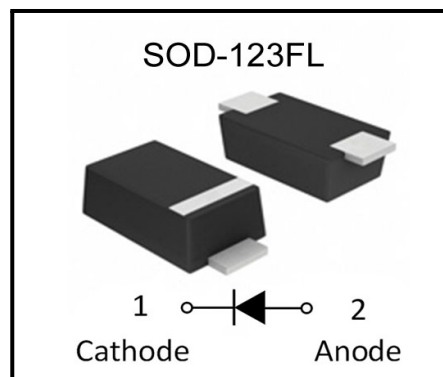
ES1A-ES1J

Fast Recovery
Rectifier Diode

Features

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability

Package



Description

- Case: molded plastic
- Polarity: Color band denotes cathode
- Package: SOD-123FL Plastic Package

Making Code



Ordering information

Part Number	ES1A	ES1B	ES1D	ES1G	ES1J
Marking	ES1A	ES1B	ES1D	ES1G	ES1J
Base qty	3K	3K	3K	3K	3K



ES1A-ES1J

Fast Recovery
Rectifier Diode

Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameter	ES1A	ES1B	ES1D	ES1G	ES1J	Unit
V _{RRM}	Maximum Recurrent Peak Reverse Voltage	50	100	200	400	600	V
V _{RMS}	Maximum RMS Voltage	35	70	140	280	420	V
V _{DC}	Maximum DC Blocking Voltage	50	100	200	400	600	V
I _(AV)	Maximum Average Forward Rectified Current at T _A = 55°C	1.0					A
I _{FSM}	Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load(JEDEC Method)	30					A
V _F	Peak Forward Voltage at 1.0A DC	0.95			1.25	1.70	V
I _R	Maximum DC Reverse Current T _J = 25°C at Rated DC Blocking Voltage T _J = 100°C	5.0 100					uA
T _{RR}	Maximum Reverse Recovery Time(Note1)	35					nS
C _J	Typical Junction Capacitance(Note2)	15					pF
R _{θJA}	Typical Thermal Resistance	80					°C/W
T _J	Operating Temperature Range	-55 to +150					°C
T _{STG}	Storage Temperature Range	-55 to +150					°C

Notes:(1)Measured with I_F=0.5A,I_R=1A,I_{RR}=0.25A

(2)Measured at 1.0 MHz and applied reverse voltage of 4.0V DC



ES1A-ES1J

Fast Recovery
Rectifier Diode

Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1: Typical Forward Characteristics

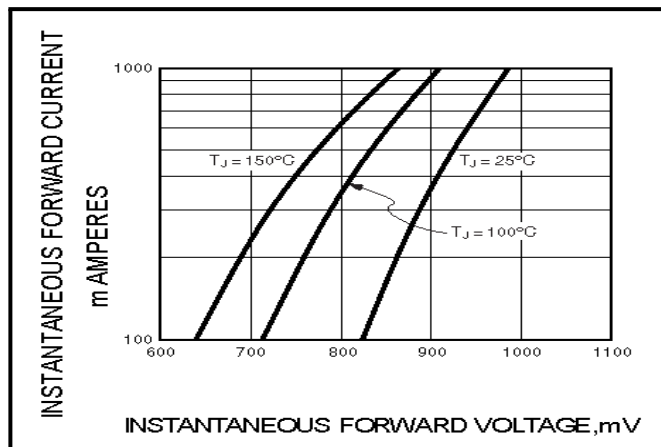


Figure 2: Typical Junction Capacitance

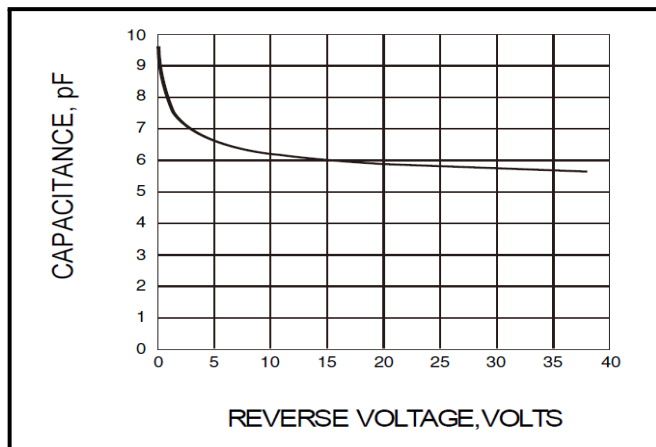


Figure 3: Typical Instantaneous Reverse Characteristics

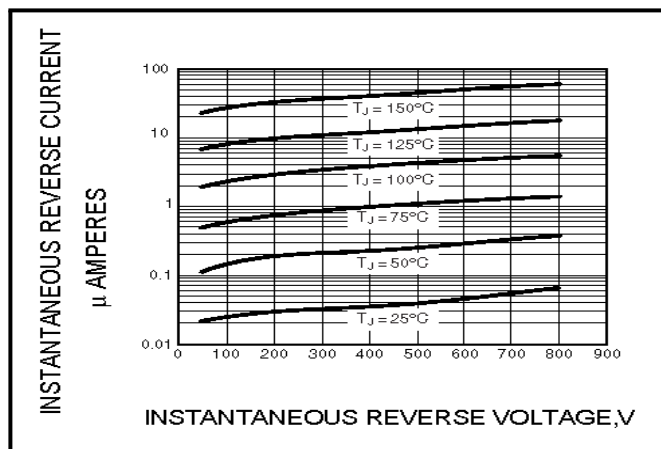
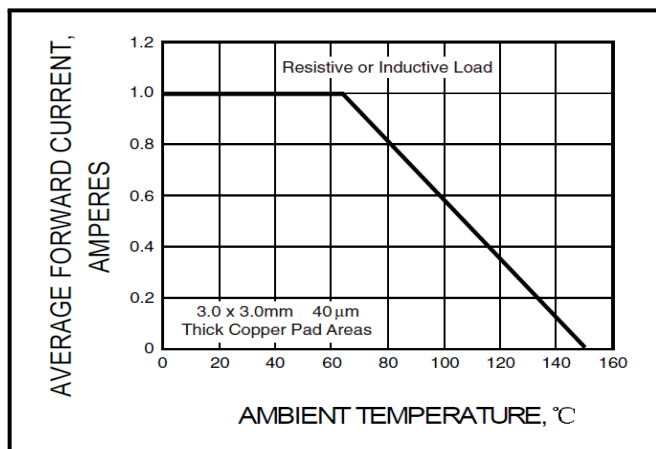
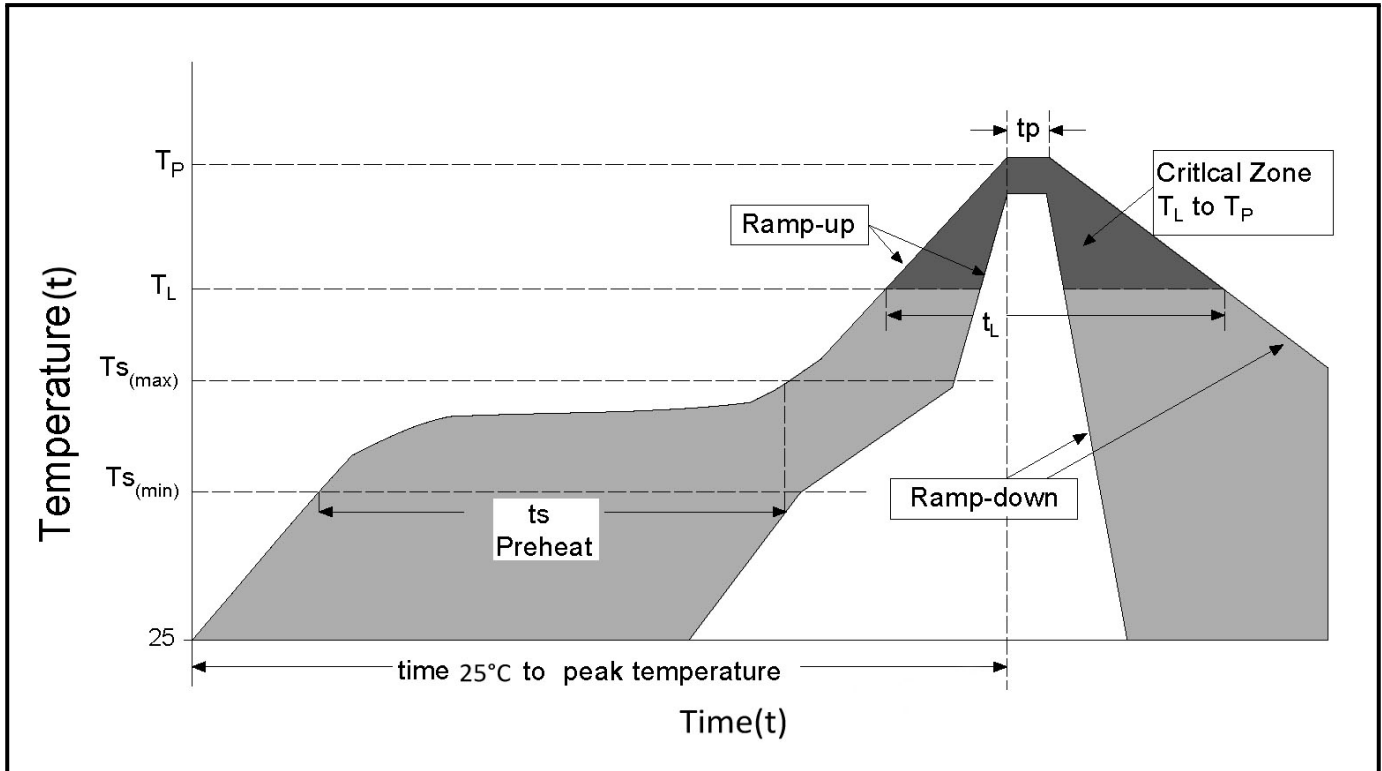


Figure 4: Forward Drating Curve



Soldering Parameters



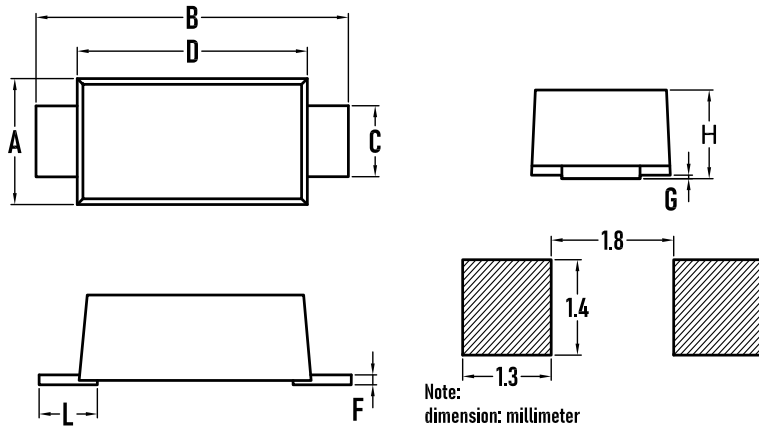
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (min to max) (t_s)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 - 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 - 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C



ES1A-ES1J

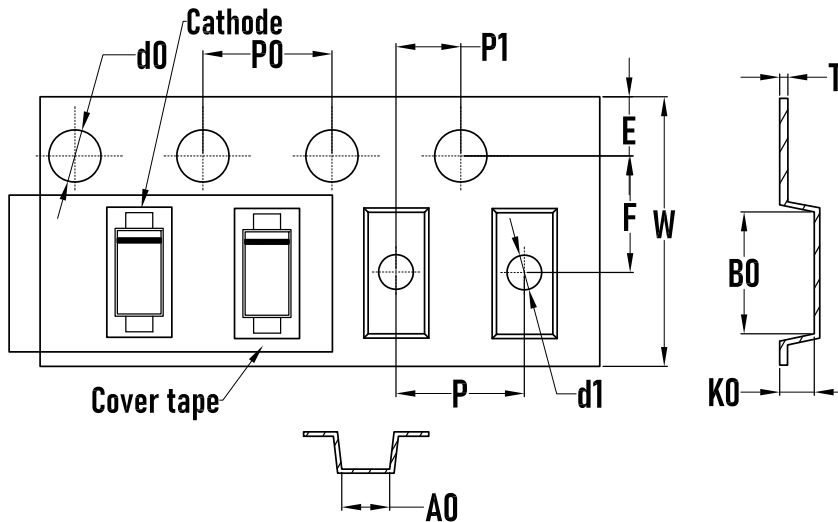
Fast Recovery
Rectifier Diode

Package Mechanical Data - SOD-123FL



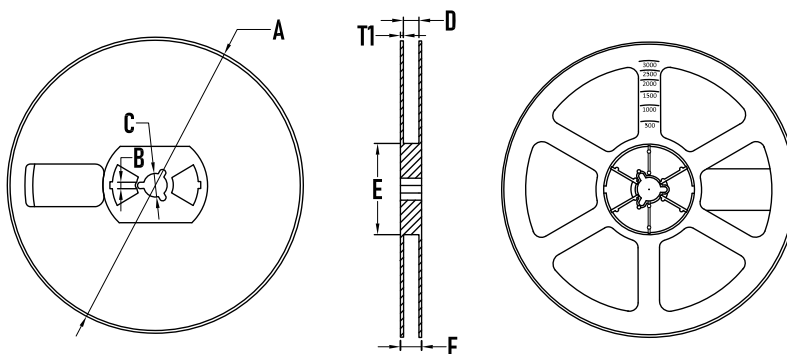
SYMBOL	MILLIMETER		
	MIN.	Typ.	MAX.
A	1.50	1.75	2.00
B	3.40	3.65	3.90
C	0.70	0.95	1.20
D	2.50	2.70	2.90
F	0.05	0.15	0.26
G	0.00	—	0.10
H	0.95	1.15	1.35
L	0.35	0.63	0.90

Packaging Tape - SOD-123FL



SYMBOL	MILLIMETER
A0	2.10±0.1
B0	4.0 ±0.1
d0	1.5±0.1
d1	1.0±0.1
E	1.75±0.1
F	3.50±0.1
K0	1.25±0.1
P	4.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	8.00±0.1
T	0.2±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

