

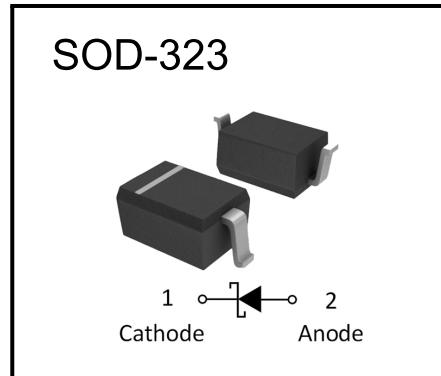
FR107WS

Fast Recovery
Rectifier Diode

Features

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

Package



Description

- Case: molded plastic
- Polarity: Color band denotes cathode
- Package: SOD-323 Plastic Package

Making Code



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
FR107WS	SOD-323	F7	3K	Tape and reel

Maximum Ratings (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameters	Value	Unit
V_{RRM}	Maximum Repetitive Peak Reverse Voltage	1000	V
V_{RMS}	Maximum RMS Voltage	700	V
V_{DC}	Maximum DC Blocking Voltage	1000	V
$IF_{(AV)}$	Maximum Average Forward Rectified Current	0.3	A
I_{FSM}	Non-repetitive Peak Forward Surge Current 8.3ms Single half-sine-wave	10	A
$R_{\theta JA}$	Typical Thermal Resistance	35	$^\circ\text{C}/\text{W}$
T_J	Operating Junction Temperature Range	-55 to +125	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$



Electrical Characteristics (@ $T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameters	Value	Unit
V_F	at $I_F=0.3A$ Max. Forward Voltage	1.3	V
I_R	at VDC $T_A = 25^\circ C$	5	uA
	Max. Reverse Current $T_A = 125^\circ C$	50	
T_{RR}	Max. Reverse Recover Time $I_F=0.5A, I_R=1.0A, I_{RR}=0.25A$	500	nS



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

Figure 1: Typical Forward Characteristics

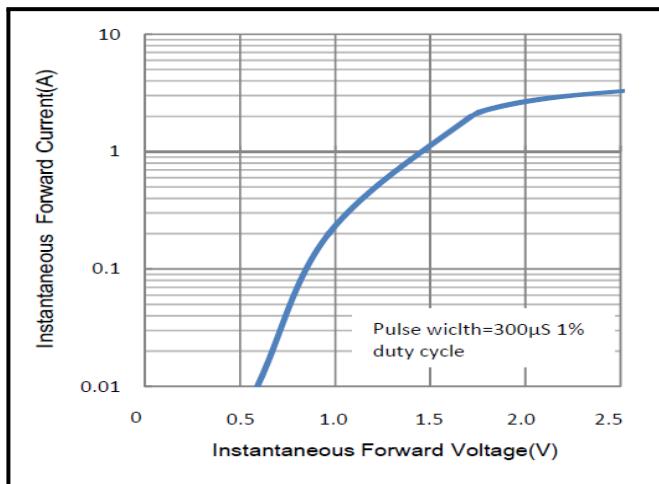


Figure 2: Forward Current Derating Curve

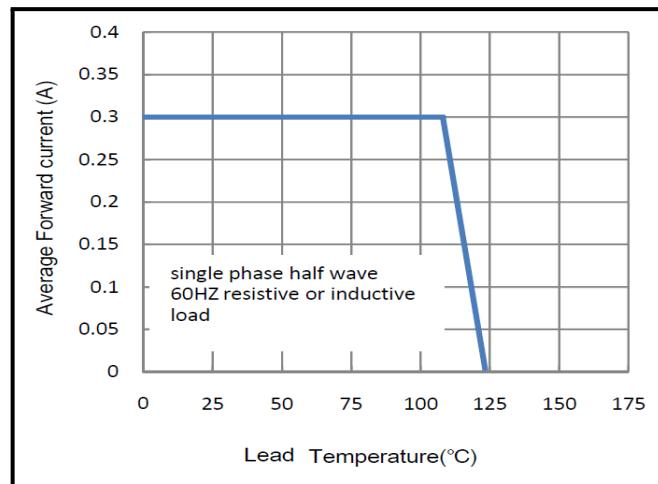


Figure 3: Maximum Non-Repetitive Peak Foward Surge Current

Current

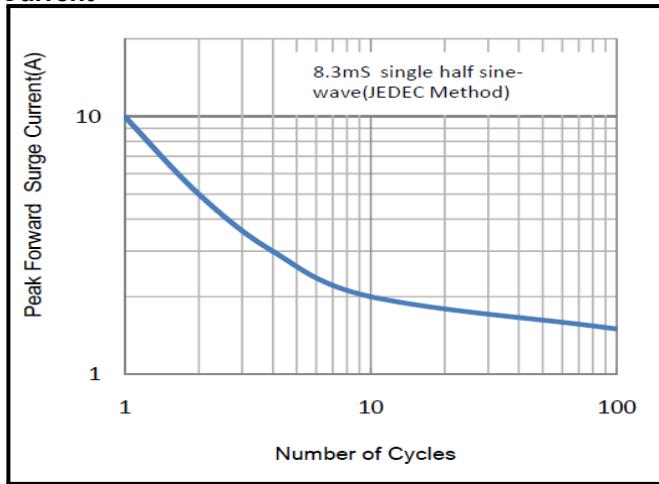
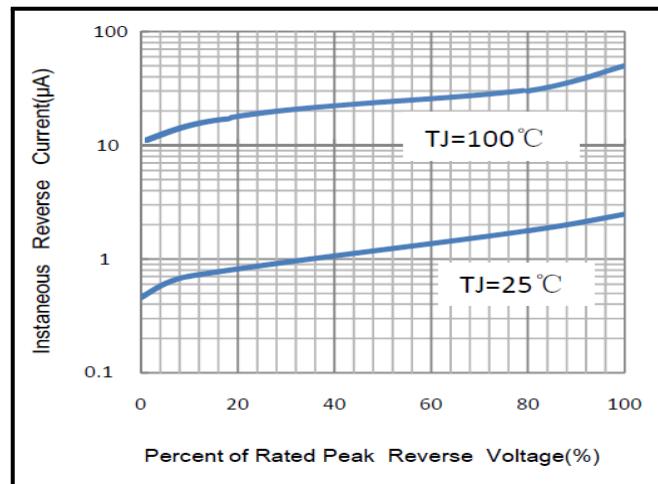
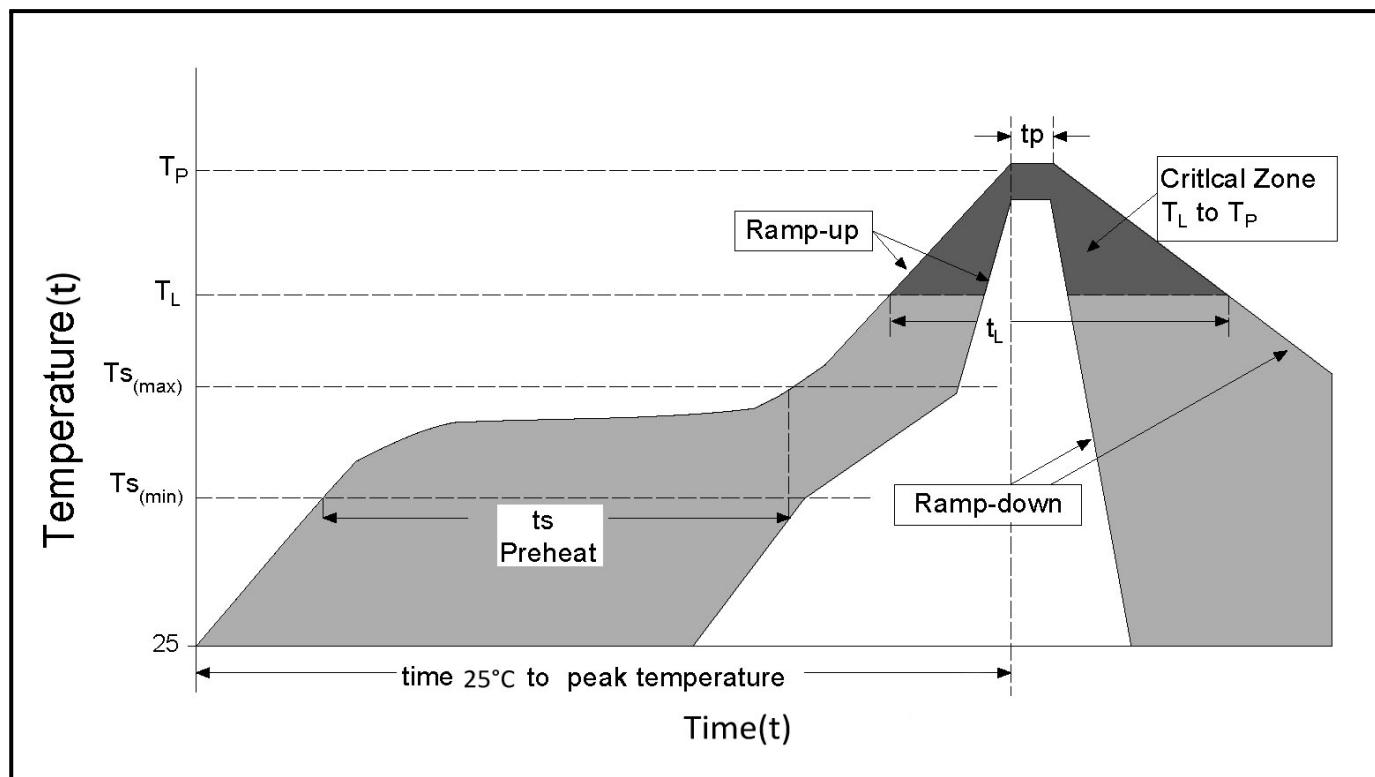


Figure 3: Typical Reverse Characteristics



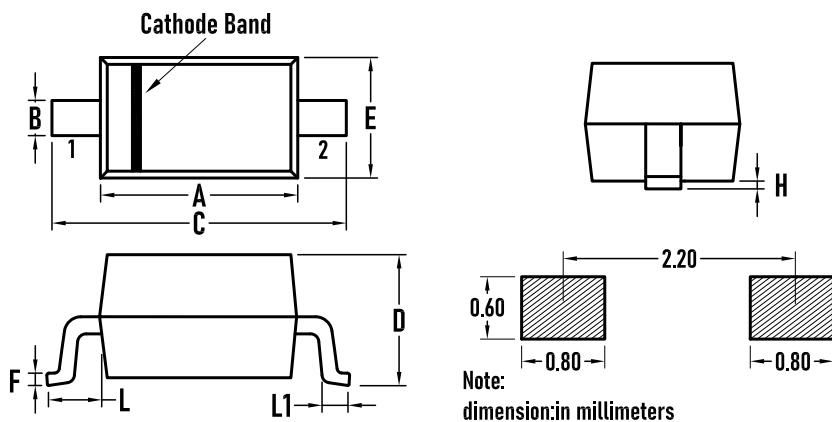
Soldering Parameters



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

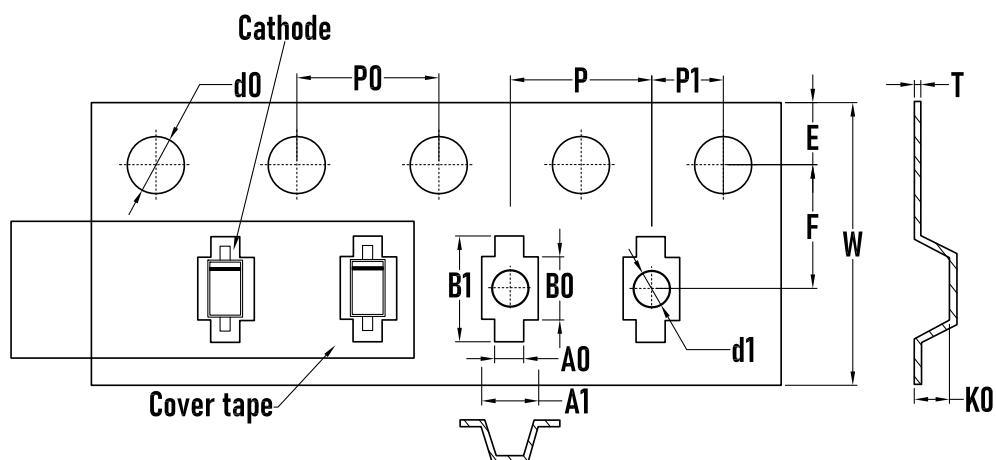


Package Information - SOD-323



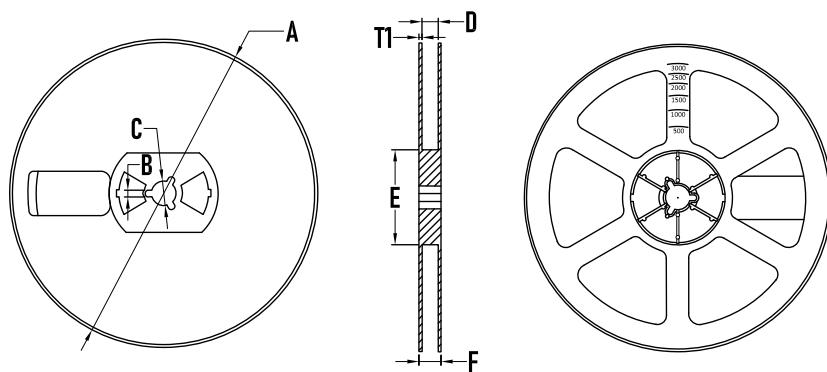
SYMBOL	MILLIMETER		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.400	2.800	0.094	0.110
D	—	1.100	—	0.043
E	1.100	1.500	0.043	0.059
F	0.080	0.150	0.003	0.006
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Packaging Tape - SOD-323



SYMBOL	MILLIMETER
A0	0.80±0.10
A1	1.48±0.10
B0	1.80±0.10
B1	3.00±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.05±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.25 ± 0.05

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

