

Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ Low forward voltage drop
- ◆ High efficiency operation
- ◆ Guard ring for enhanced ruggedness and long term reliability
- ◆ Meets MSL level 1, per J-STD-020,LF maximum peak of 260°C

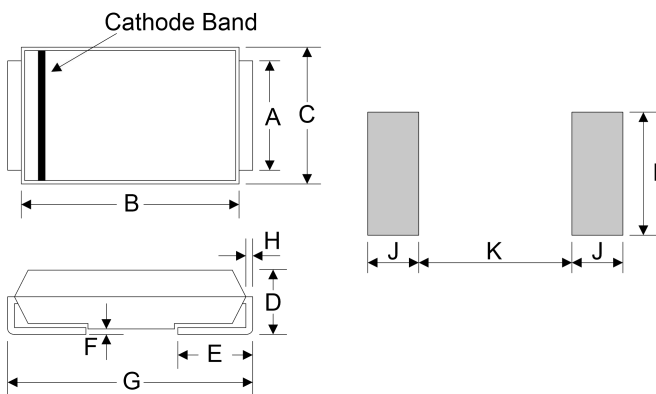


Applications

- ◆ Switching power supplies
- ◆ Converters
- ◆ Freewheeling diodes
- ◆ Reverse battery

Dimensions (SMB/DO-214AA)

Ref.	Millimeters		Inches	
	Min	Max	Min.	Max.
A	1.850	2.200	0.072	0.086
B	4.060	4.650	0.160	0.183
C	3.300	3.940	0.130	0.155
D	2.050	2.440	0.080	0.096
E	0.760	1.520	0.030	0.060
F	-	0.203	-	0.008
G	5.050	5.590	0.198	0.220
H	0.152	0.305	0.006	0.012
I	2.260	-	0.089	-
J	2.160	-	0.085	-
K	-	2.740	-	0.107



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

Parameter	Symbol	SS54BL	SS56BL	SS510BL	Unit
Maximum recurrent peak reverse voltage	V_{RRM}	50	60	100	V
Average rectified output current @60Hz One-way half-wave, R-load, $T_A=75^\circ\text{C}$	I_O	5.0			A
Maximum instantaneous forward voltage@5.0A	V_F	0.45	0.5	0.7	V
Peak reverse current@ V_{RRM}	$I_R @25^\circ\text{C}$	0.5			mA
Surge(Non-repetitive)Forward Current@60Hz half-wave, 1 cycle	I_{FSM}	100			A
Thermal Resistance(Typical) Between junction and lead	$R_{\theta J-L}$	16			$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150			$^\circ\text{C}$

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

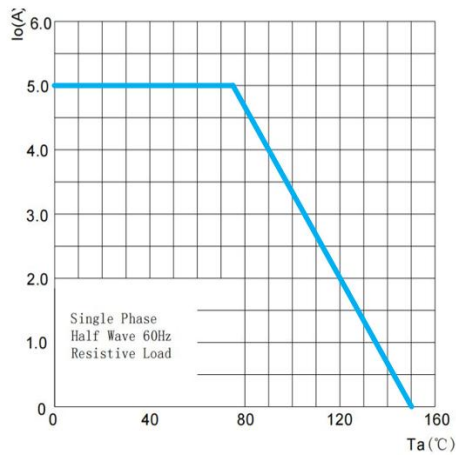


Figure 2. Surge Forward Current Capability

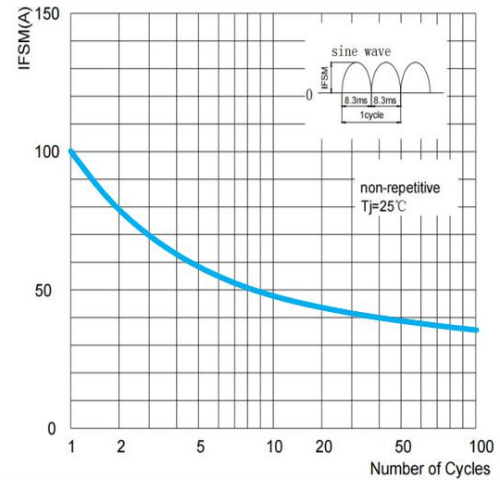


Figure 3. Forward Voltage

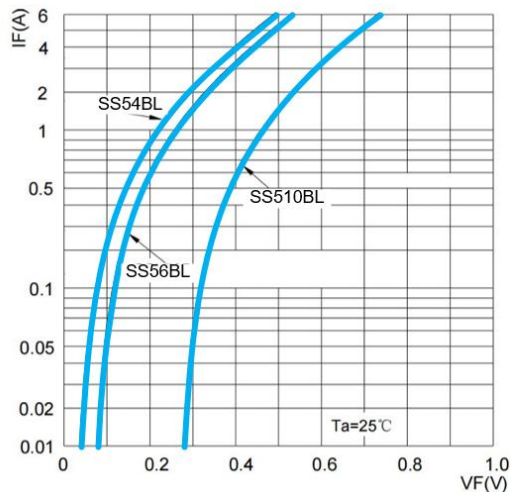
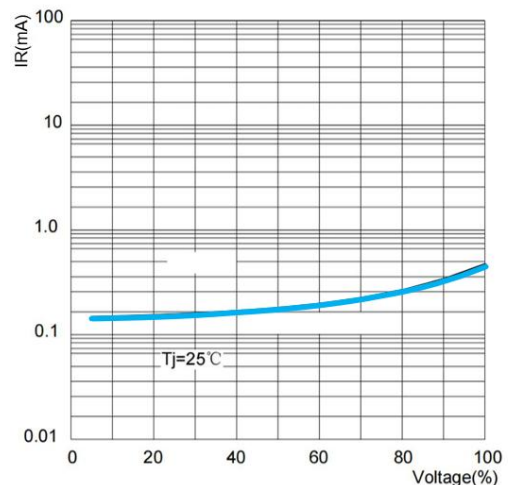
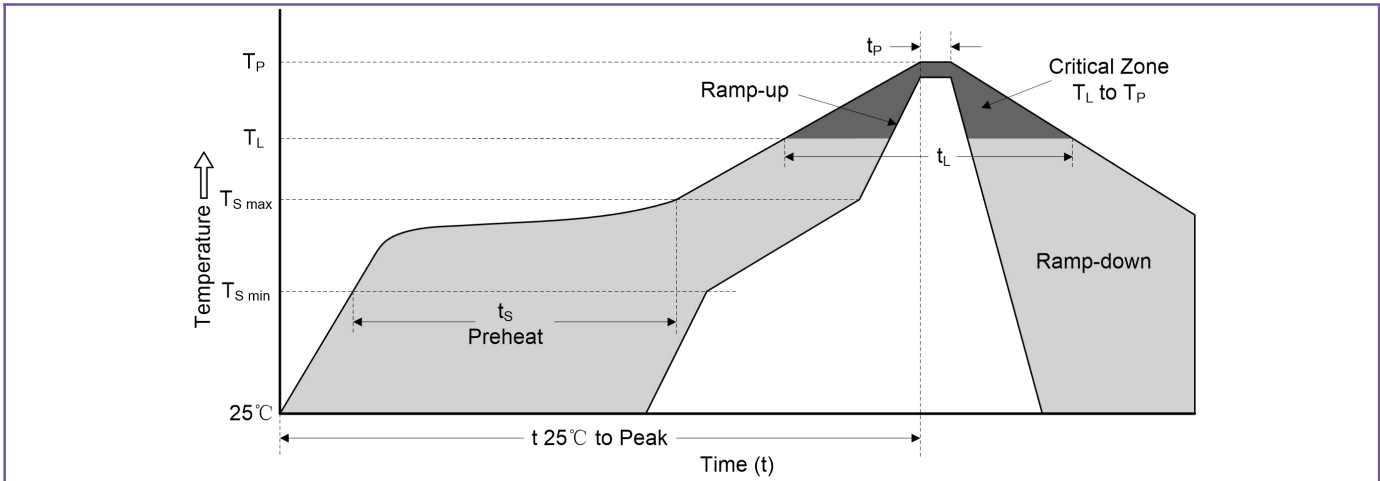


Figure 4. Typical Reverse Characteristics



Reflow 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 seconds
Average ramp-up rate (T_L to T_P)		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 (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_p)		8 minutes max.
Do not exceed		260°C