

# Schottky Barrier Rectifiers

## Reverse Voltage 20 to 200V Forward Current 1.0A

### FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* Low power loss, high efficiency
- \* For use in low voltage high frequency inverters, free wheeling, and polarity
- \* Guardring for over voltage protection
- \* High temperature soldering guaranteed: 260°C/10 seconds at terminals

### Mechanical Data

**Case:** SOD-323F  
molded plastic over sky die

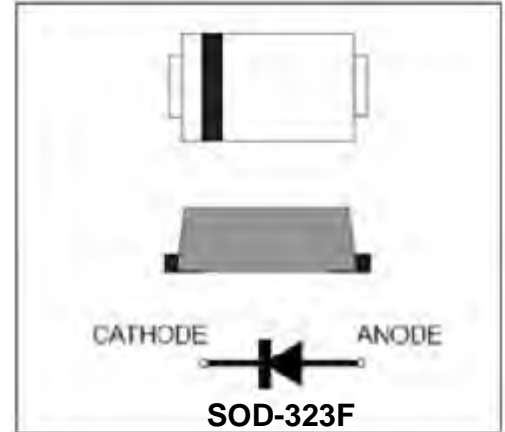
**Terminals:** Tin Plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.011 g

**Handling precaution:** None



We declare that the material of product is Halogenfree (green epoxy compound)

## 1. Electrical Characteristic

### Maximum & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	FDR120F	FDR130F	FDR140F	FDR150F	FDR160F	FDR180F	FDR1100F	FDR1150F	FDR1200F	Unit
device marking code		12	13	14	15	16	18	110	115	120	
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 $T_c = 75^\circ\text{C}$	$I_{F(AV)}$	1.0									A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	22									A
Typical thermal resistance (Note 1)	$R_{\theta JA}$ $R_{\theta JL}$	220 50									$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_J$	-55 to +150									$^\circ\text{C}$
storage temperature range	$T_{STG}$	-65 to +150									$^\circ\text{C}$

### Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	FDR120F	FDR130F	FDR140F	FDR150F	FDR160F	FDR180F	FDR1100F	FDR1150F	FDR1200F	Unit
Maximum instantaneous forward voltage at ( $I_F = 0.7\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $I_F = 1.0\text{ A}$ , $T_J = 25^\circ\text{C}$ )	$V_F$		0.48 0.55		0.7		0.85	0.9	0.92		V
Maximum DC reverse current at rated DC blocking voltage $T_A = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	$I_R$	0.02 10									mA
Typical junction capacitance at 4.0V, 1MHz	$C_J$	160									PF

#### NOTES:

1. 8.0mm<sup>2</sup> (.013mm thick) land areas



2.Ratings and Characteristic Curves (  $T_A = 25^\circ\text{C}$  unless other wise noted )

Fig. 1 Forward Current Derating Curve

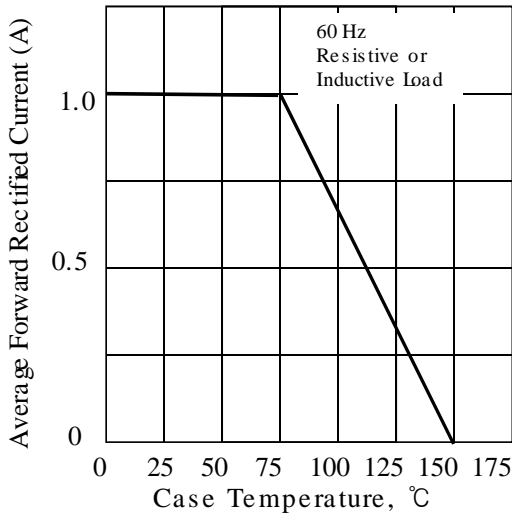


Fig. 2 Maximum Non- repetitive Peak Forward Surge Current

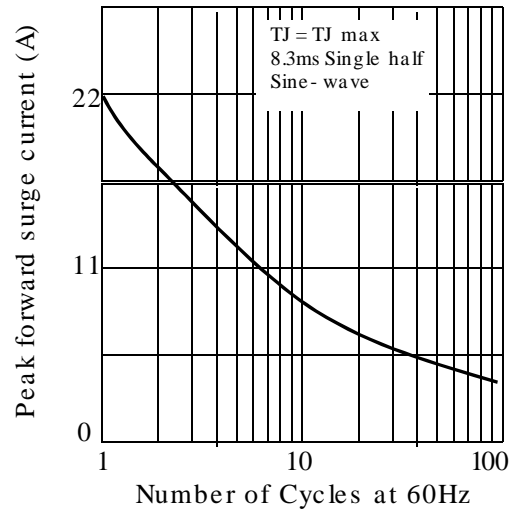


Fig 3. Typical Instantaneous Forward Characteristics

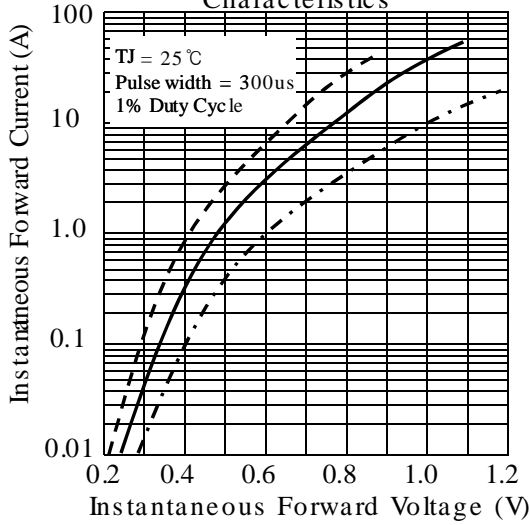


Fig 4. Typical Reverse Characteristics

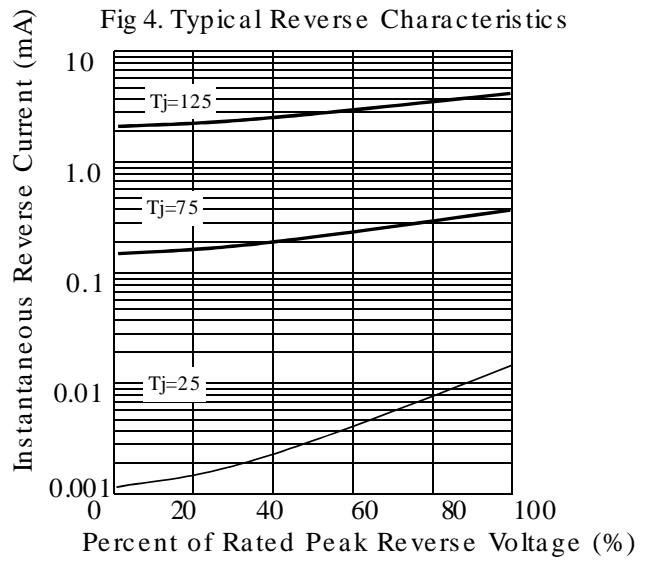


Fig 5. typical transient thermal impedance

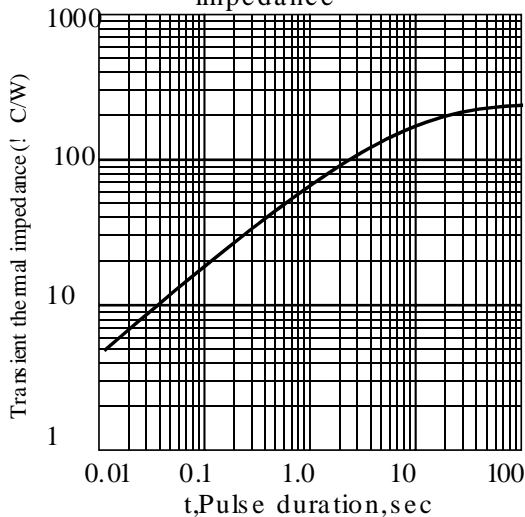
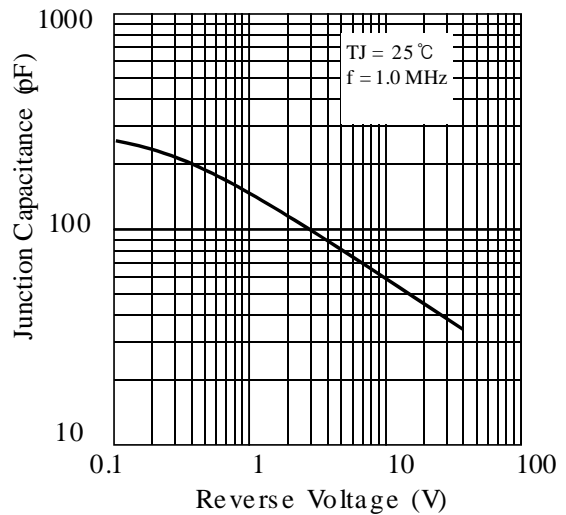
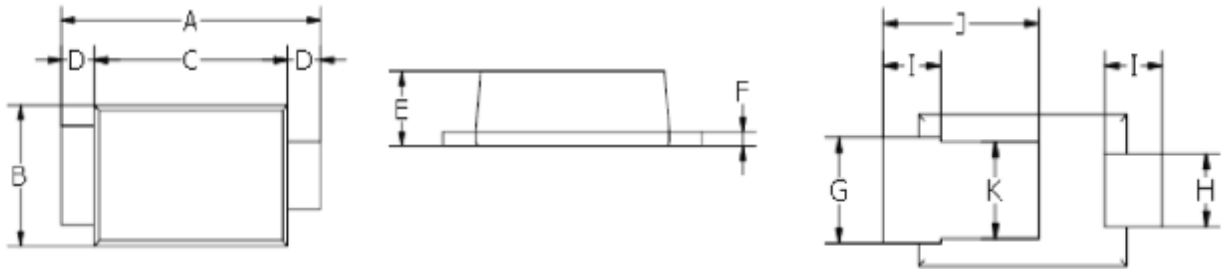


Fig 6. Typical Junction Capacitance



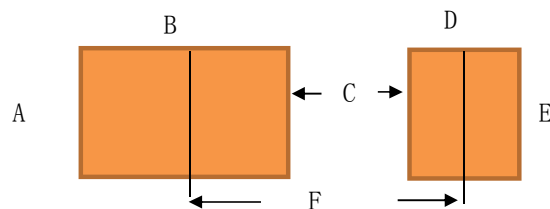
### 3. dimension:

## SOD-323F



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.30	2.70	0.091	0.106
B	1.20	1.40	0.047	0.055
C	1.75	1.95	0.069	0.077
D	0.30Typ		0.012Typ	
E	0.55	0.75	0.022	0.030
F	0.10	0.20	0.004	0.008
G	0.65	0.95	0.026	0.037
H	0.50	0.70	0.020	0.028
I	0.40	0.80	0.016	0.031
J	1.15	1.55	0.045	0.061
K	0.8Typ		0.032Typ	

### Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C	D	E	F
SOD123-FL	0.044(1.10)	0.079(2.00)	0.019(0.5)	0.032(0.8)	0.04(1.00)	0.075(1.90)