



**Solid State Devices, Inc.**

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**SHF1304 thru SHF1308  
 SHF1304SMS thru SHF1308SMS**

**3 AMP, 400 – 800 Volts  
 40 - 50 nsec, Hyper Fast Rectifier**

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information** <sup>1/</sup>

SHF130 6 \_ \_ \_

L Processing = None  
 or TX, TXV, S  
 L Package = Axial  
 SMS = Surface Mount  
 L Lead Dia = .050" standard  
 A = .040" special order  
 L Voltage 4 = 400 V  
 6 = 600 V  
 8 = 800 V

Axial Leaded                      Surface Mount (SMS)

- Features:**
- Hyper Fast Recovery: 40 - 50 nsec
  - PIV to 800 Volts
  - Hermetically Sealed
  - Void Free Construction
  - For High Efficiency Applications
  - Low Reverse Leakage
  - Single Chip Construction
  - Replaces UES 1304 Types

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SHF1304	$V_{RRM}$	400	Volts
	SHF1306		600	
	SHF1308	$V_R$	800	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_o$	3.0	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$ )		$I_{FSM}$	75	Amps
Operating & Storage Temperature		Top & Tstg	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance	Junction to Lead, L = 3/8 "	$R_{\theta JL}$	20	$^\circ\text{C/W}$
	Junction to End Tab	$R_{\theta JE}$	14	

**NOTE:** All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

**DATA SHEET #: RH0101C                      DOC**



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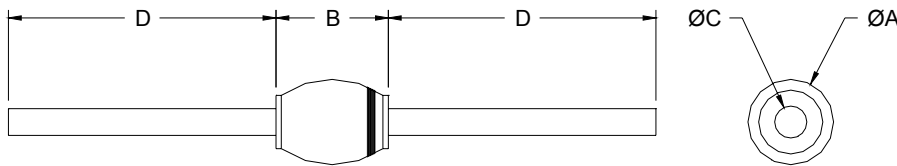
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**SHF1304 thru SHF1308  
 SHF1304SMS thru SHF1308SMS**

Electrical Characteristics	Part Type	Symbol	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = 25^\circ\text{C}$ , pulsed) $I_F = 3\text{A}$	SHF1304 - 1306 SHF1308	$V_{F1}$	1.35 1.45	Volts
<b>Instantaneous Forward Voltage Drop</b> ( $T_A = -55^\circ\text{C}$ , pulsed) $I_F = 3\text{A}$	SHF1304 - 1306 SHF1308	$V_{F2}$	1.5 1.6	Volts
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ\text{C}$ , pulsed)	All	$I_{R1}$	10	$\mu\text{A}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , pulsed)	SHF1304 - 1306 @ $125^\circ\text{C}$ SHF1308 @ $100^\circ\text{C}$	$I_{R2}$	200 200	$\mu\text{A}$
<b>Junction Capacitance</b> ( $V_R = 10\text{Vdc}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )	All	$C_J$	50	pF
<b>Reverse Recovery Time</b> ( $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 0.25\text{A}$ )	SHF1304 - 1306 SHF1308	$t_{rr}$	$40 \frac{1}{2}$ 50	nsec

Notes:  $\frac{1}{2}$   $t_{rr}$  on SHF1304 - 1306, 100 ns typical @  $100^\circ\text{C}$

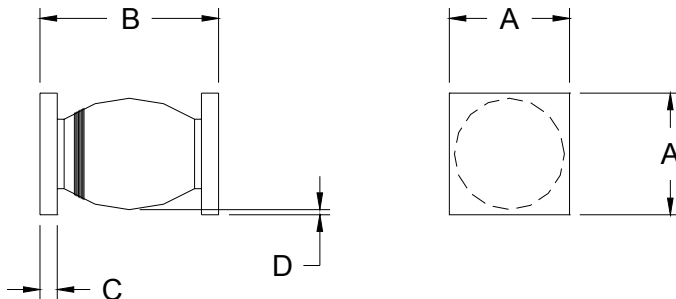
**Case Outline: (Axial)**



DIMENSIONS SHF1304 & SHF1306		
DIM	MIN	MAX
A	0.140"	0.170"
B	—	0.200"
C	0.047"	0.053"
D	1.00"	—

DIMENSIONS SHF1308		
DIM	MIN	MAX
A	0.140"	0.170"
B	—	0.215"
C	0.045"	0.053"
D	1.00"	—

**Case Outline: Surface Mount (SMS)**



DIMENSIONS SHF1304 & SHF1306		
DIM	MIN	MAX
A	0.172"	0.180"
B	0.200"	0.250"
C	0.020"	0.035"
D	0.002"	—

DIMENSIONS SHF1308		
DIM	MIN	MAX
A	0.172"	0.180"
B	0.200"	0.265"
C	0.020"	0.035"
D	0.002"	—