

SHM15F THROUGH SHM100F

SSDI

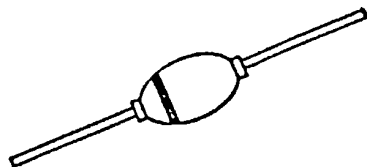
100 - 250mA, HIGH VOLTAGE
FAST RECOVERY RECTIFIER
1,500 - 10,000 VOLTS

14849 FIRESTONE BLVD
LA MIRADA, CA 90638
(213) 921-9660
FAX (213) 921-2396

CASE STYLE K

FEATURES

- ▶ HERMETICALLY SEALED GLASS PACKAGE
- ▶ LOW CAPACITANCE
- ▶ 175 °C OPERATING MAXIMUM TEMPERATURE
- ▶ HIGHER VOLTAGES AVAILABLE
- ▶ METALLURGICALLY BONDED JUNCTIONS
- ▶ SUBMINIATURE PACKAGE

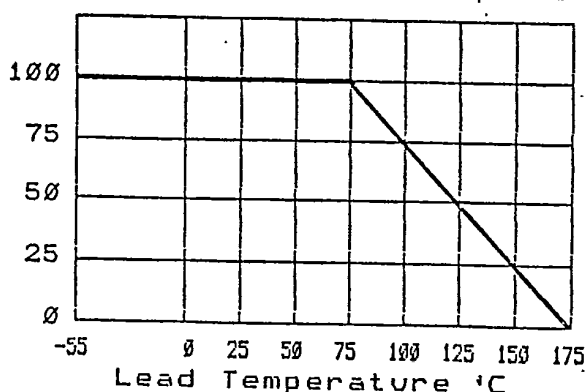


PART NUMBER	PEAK INVERSE VOLTAGE PIV	AVERAGE RECTIFIED CURRENT IO		MAXIMUM REVERSE CURRENT @ PIV IR		MAXIMUM FORWARD VOLTAGE @55°C IO VF	MAXIMUM SURGE CURRENT 1 CYCLE IFS	MAXIMUM REVERSE RECOVERY TIME TRR	MAXIMUM JUNCTION CAPACITANCE CJ	TYPICAL THERMAL IMPEDANCE θJ-L
		55°C	100°C	55°C	100°C	25°C	25°C	25°C	@ 100V	L = .25
	VOLTS	mA	mA	μA	μA	VOLTS	AMPS	nsec	pf	°C/W
SHM15F	1500	250	185	1.0	25	8	15	150	8	65
SHM20F	2000	250	185	1.0	25	8	15	150	8	65
SHM25F	2500	250	185	1.0	25	8	15	150	8	65
SHM30F	3000	150	110	1.0	25	10	10	150	4	80
SHM40F	4000	150	110	1.0	25	10	10	150	4	80
SHM50F	5000	150	110	1.0	25	10	10	150	4	80
SHM60F	6000	100	75	1.0	25	16	5	150	2	80
SHM80F	8000	100	75	1.0	25	16	5	150	2	80
SHM100F	10000	100	75	1.0	25	16	5	150	2	80

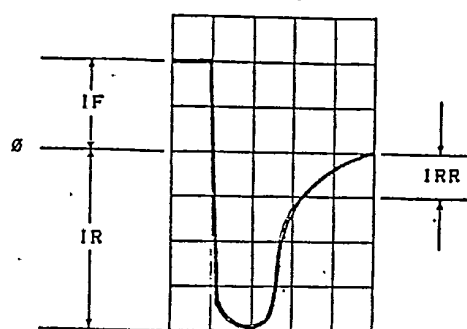
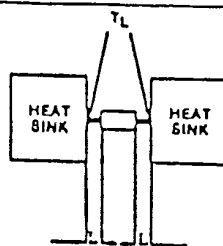
* Reverse recovery test conditions: IF = 50mA, IR = 100mA, IRR = 25mA.

- Operating and testing over 10,000 V/inch may require encapsulation or immersion in a suitable dielectric material.
- Maximum forward voltage measured with instantaneous forward pulse of 8.3 mS.
- Maximum lead temperature for soldering is 250°C, 3/8 inch from case for 5 seconds maximum.
- Operating and storage temperature -65°C to +175°C.

Maximum forward current vs. Lead Temperature

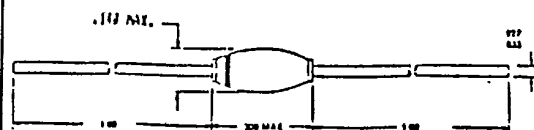


Reverse Recovery Wave Form

THERMAL IMPEDANCE
θJ-L INFORMATION

HEAT SINKS ARE INFINITE
TL = LEAD TEMP. ADJACENT
TO HEAT SINK
TJ = TEMP. OF CENTER JUNCTION
EXPOSED PORTION OF LEADS
SHALL BE FREE OF PAINT,
GREASE OR COATINGS OF ANY KIND.

BODY MATERIAL = GLASS
LEAD MATERIAL = TINNED COPPER



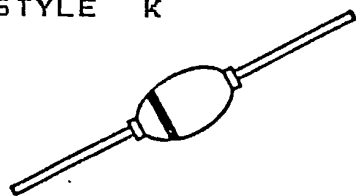
SHM15UF THROUGH SHM100UF

100 - 250mA, HIGH VOLTAGE
ULTRA FAST RECOVERY
RECTIFIER
1,500 - 10,000 VOLTS

T-03-09
SSDI

14849 FIRESTONE BLVD
LA MIRADA, CA 90638
(213) 921-9660
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CASE STYLE K



FEATURES

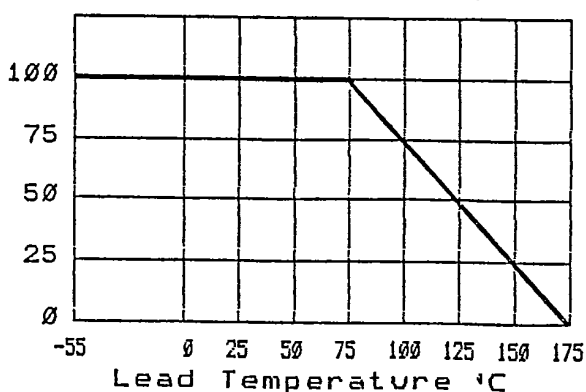
- ▶ HERMETICALLY SEALED GLASS PACKAGE
- ▶ LOW CAPACITANCE
- ▶ 175 °C OPERATING MAXIMUM TEMPERATURE
- ▶ HIGHER VOLTAGES AVAILABLE
- ▶ METALLURGICALLY BONDED JUNCTIONS
- ▶ SUBMINIATURE PACKAGE

PART NUMBER	PEAK INVERSE VOLTAGE PIV VOLTS	AVERAGE RECTIFIED CURRENT I _O		MAXIMUM REVERSE CURRENT @ PIV I _R		MAXIMUM FORWARD VOLTAGE @55°C I _O V _F	MAXIMUM SURGE CURRENT 1 CYCLE I _{FS}	MAXIMUM REVERSE RECOVERY TIME T _{RR}	MAXIMUM JUNCTION CAPACITANCE C _J	TYPICAL THERMAL IMPEDANCE θ _{J-L}
		55°C	100°C	55°C	100°C	25°C	25°C	25°C	@ 100V	L = .25
		mA	mA	μA	μA	VOLTS	AMPS	nsec	pf	°C/W
SHM15UF	1500	250	185	1.0	25	10	15	60	8	65
SHM20UF	2000	250	185	1.0	25	10	15	60	8	65
SHM25UF	2500	250	185	1.0	25	10	15	60	8	65
SHM30UF	3000	150	110	1.0	25	14	10	60	4	80
SHM40UF	4000	150	110	1.0	25	14	10	60	4	80
SHM50UF	5000	150	110	1.0	25	14	10	60	4	80
SHM60UF	6000	100	75	1.0	25	20	5	60	2	80
SHM80UF	8000	100	75	1.0	25	20	5	60	2	80
SHM100UF	10000	100	75	1.0	25	20	5	60	2	80

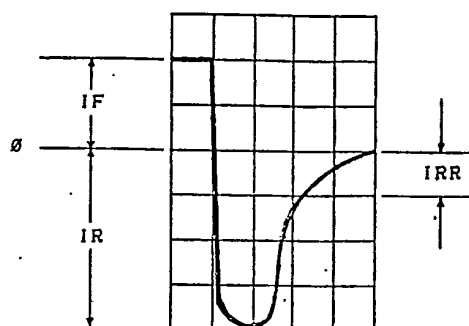
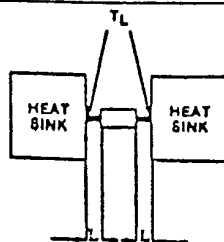
* Reverse recovery test conditions: I_F = 50mA, I_R = 100mA, I_{RR} = 25mA.

1. Operating and testing over 10,000 V/inch may require encapsulation or immersion in a suitable dielectric material.
2. Maximum forward voltage measured with instantaneous forward pulse of 8.3 ms.
3. Maximum lead temperature for soldering is 250°C, 3/8 inch from case for 5 seconds maximum.
4. Operating and storage temperature -65°C to +175°C.

Maximum forward current vs. Lead Temperature

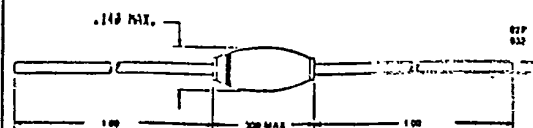


Reverse Recovery Wave Form

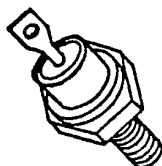
THERMAL IMPEDANCE
θ_{J-L} INFORMATION

HEAT SINKS ARE INFINITE
T_L = LEAD TEMP. ADJACENT
TO HEAT SINK
T_J = TEMP. OF CENTER JUNCTION
EXPOSED PORTION OF LEADS
SHALL BE FREE OF PAINT,
GREASE OR COATINGS OF ANY KIND.

BODY MATERIAL = GLASS
LEAD MATERIAL = TINNED COPPER



JAN, TX, TXV 1N5812 THROUGH 1N5816 20 AMP HYPER FAST RECOVERY RECTIFIER 50 - 150 VOLTS	SSDI
	14849 FIRESTONE BLVD. LA MIRADA, CA 90638 TEL: (213) 921-9660 FAX: (213) 921-2396

CASE STYLE G
JEDEC DO-4
**FEATURES**

- JAN, JANTX, JANTXV, 1N5812, 14, AND 16
- PER MIL-S-19500/478
- RADIATION TOLERANT
- ULTRA FAST RECOVERY 35 NSEC MAX
- REVERSE VOLTAGE TO 150V
- LOW FORWARD VOLTAGE DROP 450 MV AVERAGE
- LOW REVERSE LEAKAGE
- HERMETICALLY SEALED
- SINGLE CHIP CONSTRUCTION

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
REVERSE VOLTAGE			Volts
JAN, TX, TXV, 1N5812	V_R	50	
JAN, TX, TXV, 1N5814		100	
JAN, TX, TXV, 1N5816		150	
BREAKDOWN VOLTAGE IR = 100uA			Volts
JAN, TX, TXV, 1N5812	$V_{(BR)}$	60	
JAN, TX, TXV, 1N5814		110	
JAN, TX, TXV, 1N5816		160	
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ\text{C}$)	I_O	20	Amps
Peak Repetitive Forward Current ($T_C = 55^\circ\text{C}$, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)	$I_{FM}(\text{rep})$	80	Amps
Peak Surge Current ($T_C = 55^\circ\text{C}$, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)	$I_{FM}(\text{surge})$	400	Amps
Junction Temperature	T_J	-65 to +175	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +200	$^\circ\text{C}$

THERMAL CHARACTERISTICS

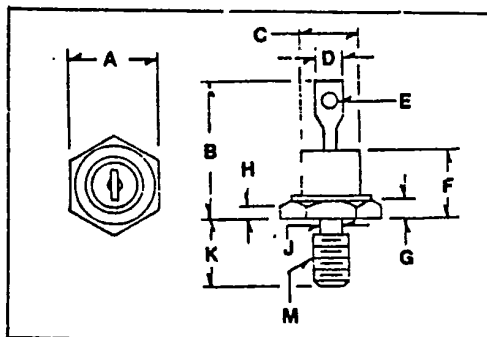
Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Max Peak Total Value Forward Voltage Drop ($I_{FM} = 10A$ (PK), Duty Cycle 2%, $T_p = 8.3ms$, $T_C = 100^\circ C$)	$V_{(FM)}$	.78	Vdc
Max Instantaneous Forward Voltage Drop (Duty Cycle 2%, $T_p = 8.3ms$, $T_C = 25^\circ C$) $I_{FM} = 10A$ (PK) $I_{FM} = 20A$ (PK)	V_F	.900 .950	Vdc
Max Full Cycle Reverse Leakage Current, Averaged Over Full Cycle (Rated V_R , 60Hz, Square Wave, $T_C = 100^\circ C$)	$I_{R(AV)}$	750	μA
Max Reverse Leakage Current (Rated V_R , $T_C = 25^\circ C$)	I_R	10	μA
Max Junction Capacitance ($V_R = 10$ V, $T_C = 25^\circ C$)	C_J	300	pf

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ($I_F = 500ma$, $I_R = 1A$, $I_{RR} = 250ma$)	t_{rr}	-	-	35	ns

PHYSICAL DIMENSIONS

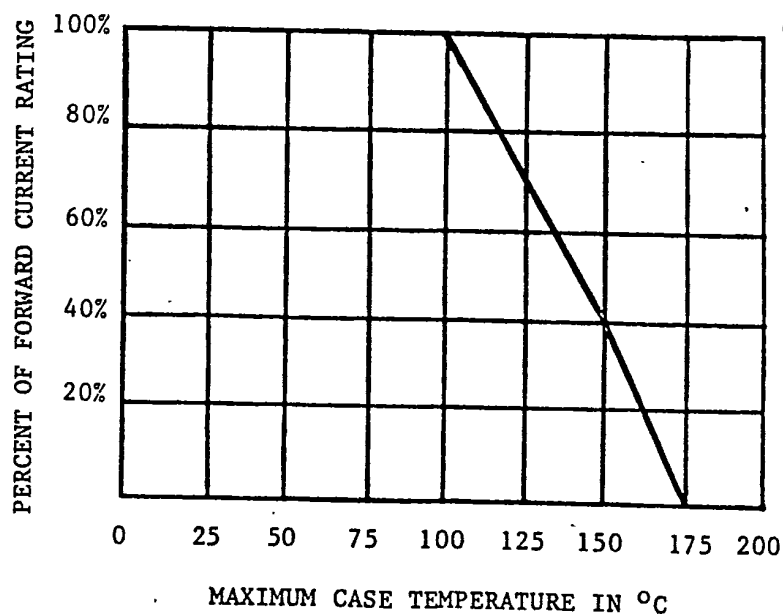


KEY TO DIMENSIONS:

(Inches)

- A = .424 - .437
 B = .800 Max.
 C = .424 Max.
 D = .250 Max.
 E = .060 Min.
 F = .405 Max.
 G = .075 - .175
 H = .060 Min.
 J = .163 - .189
 K = .422 - .453
 M = 10-32 UNF-2A

TYPICAL OPERATING CURVES



SSDII SOLID STATE DEVICES, INC.

SDR952/61 THRU SDR955/61

50 AMP

ULTRA FAST RECOVERY RECTIFIER

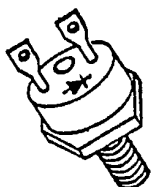
200-500 VOLTS



14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396

CASE STYLE T

2 PIN TO-61



FEATURES

- ISOLATED PACKAGE
- ULTRA FAST RECOVERY 35 NSEC MAX
- REVERSE VOLTAGE TO 500 VOLTS
- LOW REVERSE LEAKAGE
- HERMETICALLY SEALED
- LOW CAPACITANCE - MAX 50 pf @ 10V
- ALL WELDED CONSTRUCTION
- HI REL REPLACEMENT FOR UES 804 SERIES

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Peak Repetitive Reverse Voltage and DC Blocking Voltage (IR = 100 uA)	SDR952/61 SDR953/61 SDR954/61 SDR955/61	$V_{RM} (rep)$ V_R	200 300 400 500	Volts
RMS Reverse Voltage	SDR952/61 SDR953/61 SDR954/61 SDR955/61	V_r	140 210 280 350	Volts
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, $T_C = 55^\circ C$)		I_O	50	Amps
Peak Repetitive Forward Current ($T_C = 55^\circ C$, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		$I_{FM} (rep)$	150	Amps
Peak Surge Current ($T_C = 55^\circ C$, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)		$I_{FM} (surge)$	450	Amps
Operating and Storage Temperature		T_J, T_{stg}	-65 to +200	$^\circ C$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

20E D

8366011

0002184 7

T-03-21

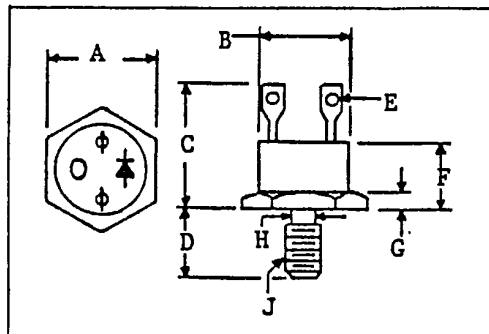
SOLID STATE DEVICES INC

Characteristics	Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle. (I_O (Max), 60 Hz Square Wave, $T_C = 55^\circ\text{C}$)	$V_{F(AV)}$	0.75	Vdc
Max Instantaneous Forward Drop ($I_F = 50$ Adc, $T_C = 25^\circ\text{C}$, 300 μs Pulse)	V_F	1.5	Vdc
Max Reverse Leakage Current ($T_C = 100^\circ\text{C}$)	$I_{R(AV)}$	5.0	mA _{dc}
Max Reverse Leakage Current ($T_C = 25^\circ\text{C}$)	I_R	50	μA_{dc}
Max Junction Capacitance ($V_R = 10$ V, $T_C = 25^\circ\text{C}$)	C_J	150	pf

REVERSE RECOVERY CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Reverse Recovery Time ($I_F = 500\text{ma}$, $I_R = 1\text{A}$, $I_{RR} = 250\text{ma}$)	t_{rr}	--	30	35	ns

PHYSICAL DIMENSIONS

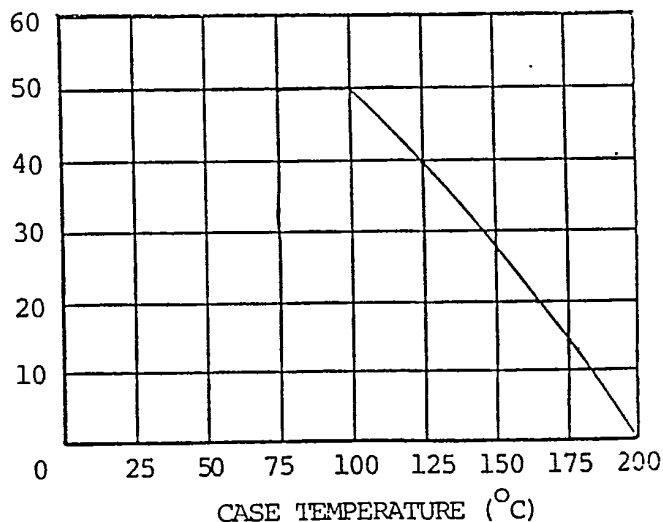


KEY TO DIMENSIONS:

(Inches)

- A = .667 - .687
 B = .570 - .610
 C = .640 - .875
 D = .422 - .455
 E = .047 - .072 (Diameter)
 F = .325 - .460
 G = .090 - .150
 H = .220 - .249 (Diameter)
 J = $\frac{1}{2}$ - 28 UNF-2A

TYPICAL OPERATING CURVES

OUTPUT CURRENT VS.
CASE TEMPERATURE
 I_O
 OUTPUT
 CURRENT
 (A)


SOLID STATE DEVICES, INC.