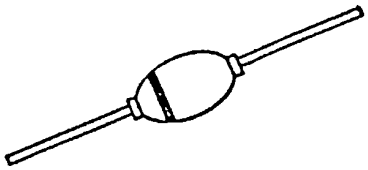
SHM15F THROUGH SHM100F

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

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

CASE STYLE K



FEATURES

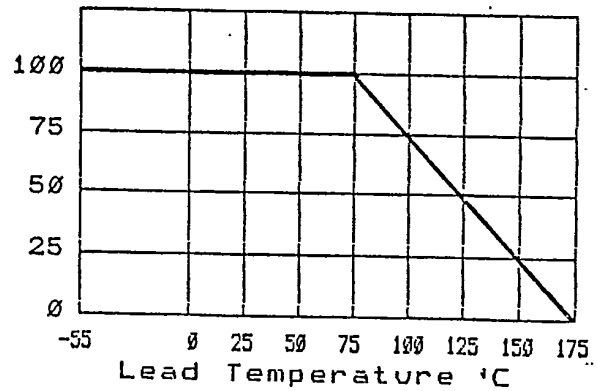
- HEMETICALLY SEALED GLASS PACKAGE
- LOW CAPACITANCE
- 175 °C OPERATING MAXIMUM TEMPERATURE
- HIGHER VOLTAGES AVAILABLE
- METALLURGICALLY BONDED JUNCTIONS
- SUBMINIATURE PACKAGE

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

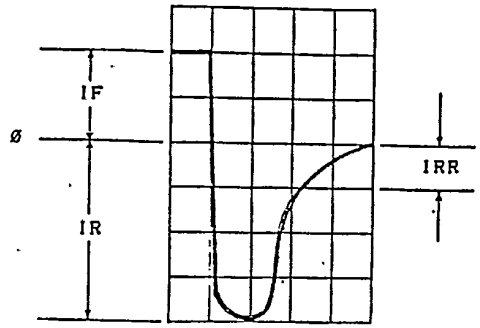
* Reverse recovery test conditions: IF = 50mA, IR = 100mA, IRR = 25mA.

1. Operating and testing over 10,000 V/inch may require encapsulation or immerson 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 tempaerature -65°C to +175°C.

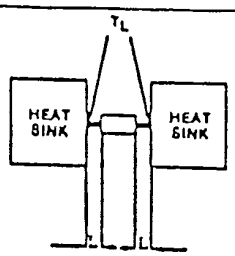
Maximum forward current vs. Lead Temperature



Reverse Recovery Wave Form

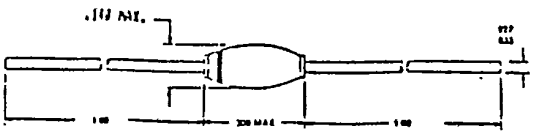


THERMAL IMPEDANCE θJ-L INFORMATION



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 RECITIFER 1,500 - 10,000 VOLTS

SSDI
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(213) 921-9660
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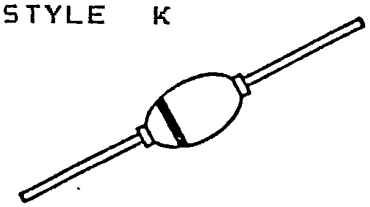
CASE STYLE K



FEATURES

- HEMETICALLY SEALED GLASS PACKAGE
- LOW CAPACITANCE
- 175 °C OPERATING MAXIMUM TEMPERATURE
- HIGHER VOLTAGES AVAILABLE
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		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
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: IF = 50mA, IR = 100mA, IRR = 25mA.

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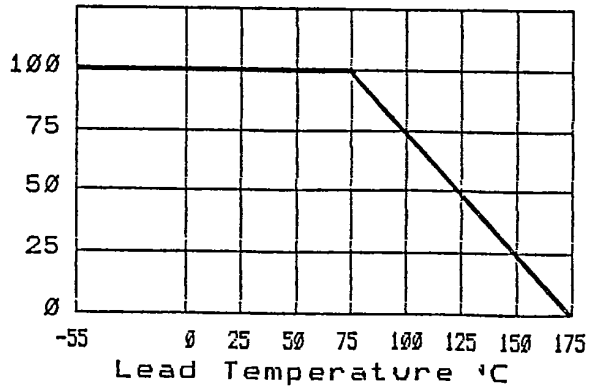
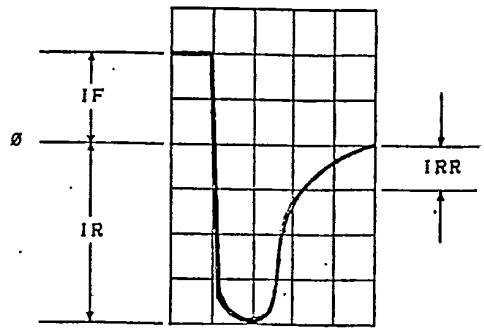
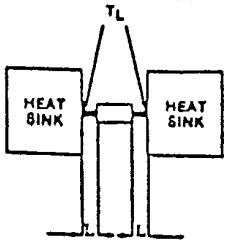
Maximum forward current vs. Lead Temperature



Reverse Recovery Wave Form



THERMAL IMPEDANCE θJ-L INFORMATION



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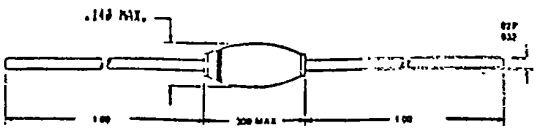
BODY MATERIAL = GLASS
LEAD MATERIAL = TINNED COPPER



NOTE: All specification subject to change without notice.

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 RECIVERY 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°C)	I_0	20	Amps
Peak Repetitive Forward Current (T_C = 55°C, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)	$I_{FM\ (rep)}$	80	Amps
Peak Surge Current (T_C = 55°C, Superimposed on Rated Current at Rated Voltage, 8.3 ms Pulse)	$I_{FM\ (surge)}$	400	Amps
Junction Temperature	T_J	-65 to +175	°C
Storage Temperature	T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

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

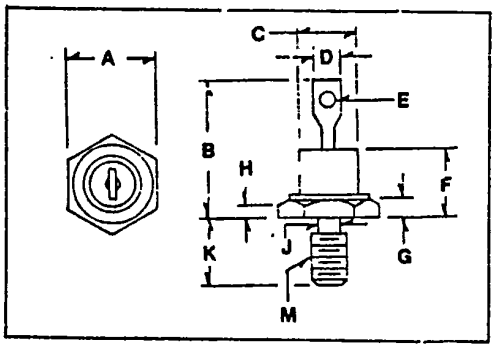
NOTE: All specifications subject to change without notice.

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Max Peak Total Value Forward Voltage Drop (I_{FM} = 10A (PK), Duty Cycle 2%, Tp=8.3ms, T_C = 100°C	$V_{(FM)}$	.78	Vdc
Max Instantaneous Forward Voltage Drop (Duty Cycle 2%, Tp=8.3ms, T_C = 25°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°C)	$I_{R(AV)}$	750	uA
Max Reverse Leakage Current (Rated V_R, T_C = 25°C)	I_R	10	uA
Max Junction Capacitance (V_R = 10 V, T_C = 25°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

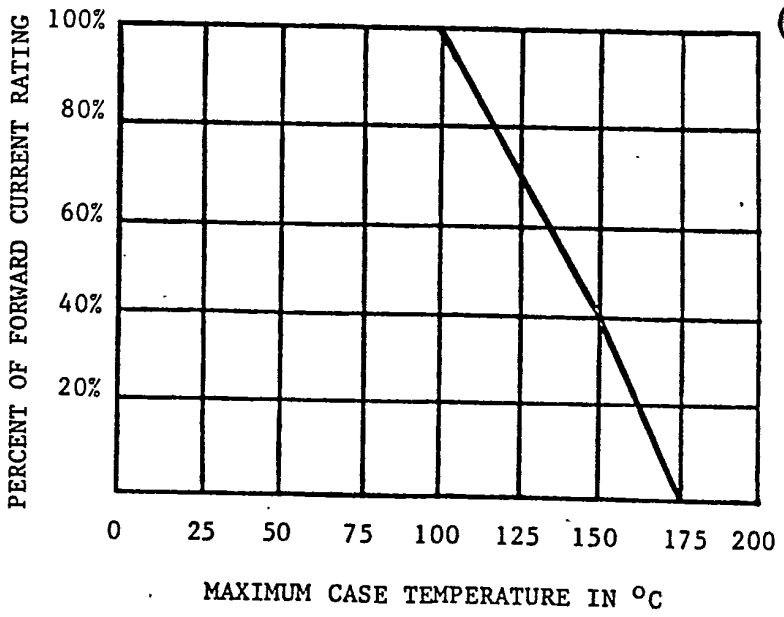


KEY TO DIMENSIONS:

(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



SSDI SOLID STATE DEVICES, INC.

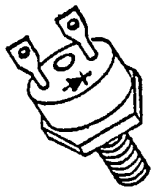
P.O. Box 577, La Mirada, California 90637

Telephone: (213) 921-9660 • TWX 910-583-4807 • FAX#213-921-2396

SDR952/61 THRU SDR955/61
50 AMP
ULTRA FAST RECOVERY RECTIFIER
200—500 VOLTS

SSDI
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	$V_{RM\ (rep)}$, V_R	200	Volts
	SDR953/61		300	
	SDR954/61		400	
	SDR955/61		500	
RMS Reverse Voltage	SDR952/61	V_r	140	Volts
	SDR953/61		210	
	SDR954/61		280	
	SDR955/61		350	
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60Hz, Sine Wave, T_C = 55°C)		I_O	50	Amps
Peak Repetitive Forward Current (T_C = 55°C, 8.3 ms Pulse, Allow Junction to Reach Equilibrium Between Pulses)		$I_{FM\ (rep)}$	150	Amps
Peak Surge Current (T_C = 55°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	°C

THERMAL CHARACTERISTICS

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

NOTE: All specifications subject to change without notice.

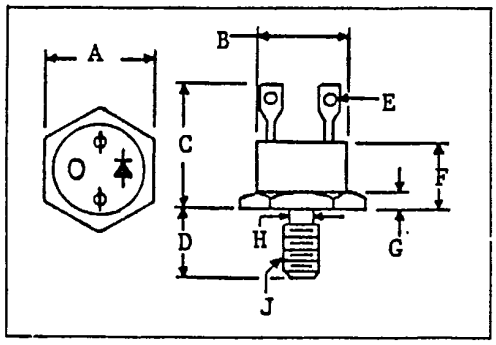
ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Value	Unit
Max Full Cycle Forward Voltage Drop, Averaged Over Full Cycle. (I_O (Max), 60 Hz Square Wave, T_C = 55 C)		$V_{F(AV)}$	0.75	Vdc
Max Instantaneous Forward Drop (IF = 50 Adc, T_C = 25°C, 300 μs Pulse)		V_F	1.5	Vdc
Max Reverse Leakage Current (T_C = 100°C)	SDR952/61, VR = 160 SDR953/61, VR = 240 SDR954/61, VR = 320 SDR955/61, VR = 400	$I_{R(AV)}$	5.0	mAdc
Max Reverse Leakage Current (T_C = 25°C)	SDR952/61, VR = 160 SDR953/61, VR = 240 SDR954/61, VR = 320 SDR955/61, VR = 400	I_R	50	μAdc
Max Junction Capacitance (V_R = 10 V, T_C = 25°C)		C_J	150	pf

REVERSE RECOVERY CHARACTERISTICS

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

PHYSICAL DIMENSIONS

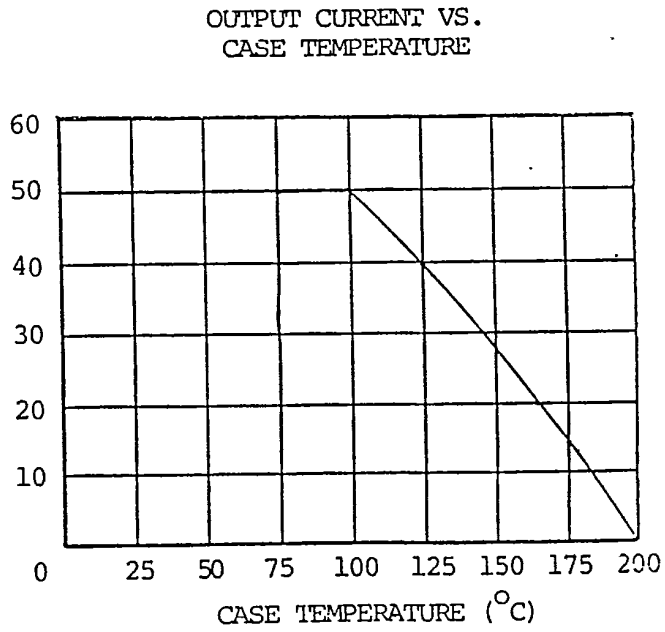


KEY TO DIMENSIONS:

(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 = ¼ - 28 UNF-2A

TYPICAL OPERATING CURVES



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