WILLAS RoHS COMPLIANT

HFM101L THRU HFM107L

1.0A SUFRACE MOUNT HIGH EFFCIENCY RECTIFIERS-50-1000V

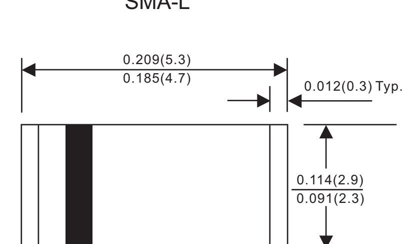
SMA-L PACKAGE

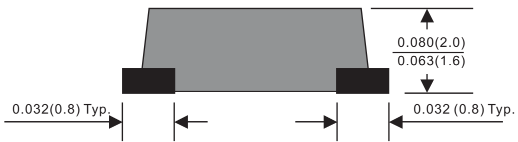
Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- High current capability.
- Ultrafast recovery time for high efficiency.
- High surge current capability.
- Glass passivated chip junction.
- **Moisture Sensitivity Level 1**

Package outline

SMA-L





Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SMA-L
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.05 gram

Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.2	I_O			1.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			30	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			5.0	μA
	V_R = V_{RRM} T_J = 125°C				150	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		20		pF
Storage temperature		T_{STG}	-55		+150	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	t_{rr} *5 (ns)	Operating temperature T_J, (°C)
HFM101L	50	35	50	1.00	50	-55 to +150
HFM102L	100	70	100			
HFM103L	200	140	200			
HFM104L	400	280	400	1.30		
HFM105L	600	420	600	1.70	75	
HFM106L	800	560	800			
HFM107L	1000	700	1000			

Note 1. Reverse recovery time test condition, I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

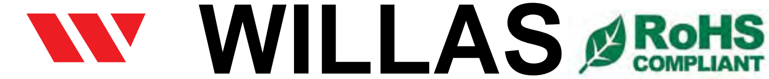
*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@I_F=1.0A

*5 Maximum Reverse recovery time, note 1



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Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT,(A)

10
1.0
.1
.01
.001

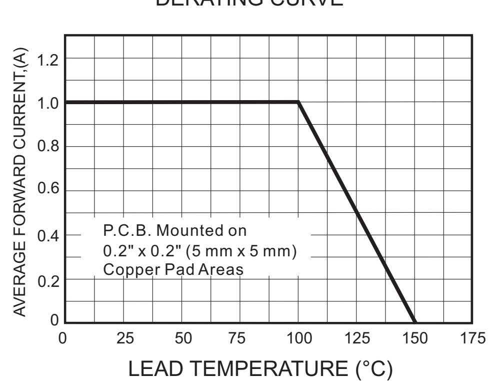
.4 .6 .8 1.0 1.2 1.4 1.6 1.8

HFM101L~HFM103L
HFM104L
HFM105L~HFM107L

T_J=25°C
Pulse Width 300us
1% Duty Cycle

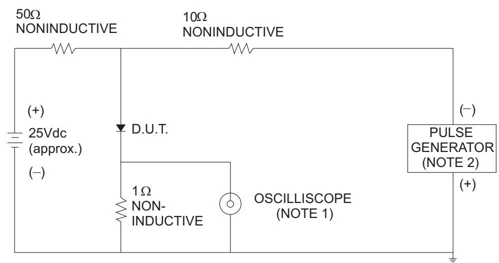
FORWARD VOLTAGE,(V)

FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE



LEAD TEMPERATURE (°C)

FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

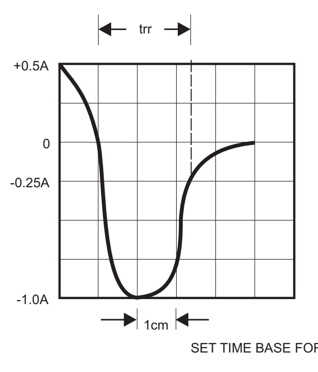


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

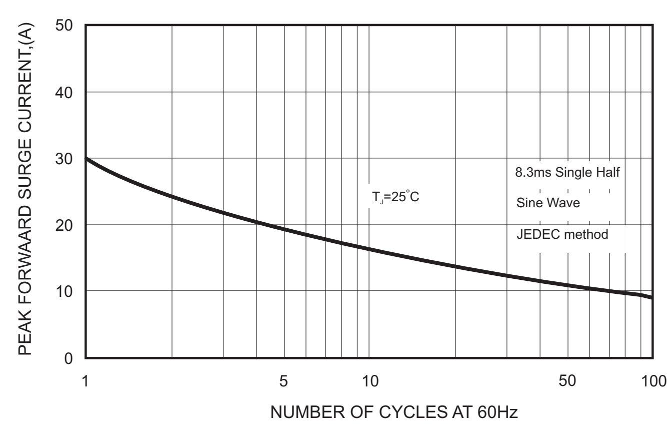
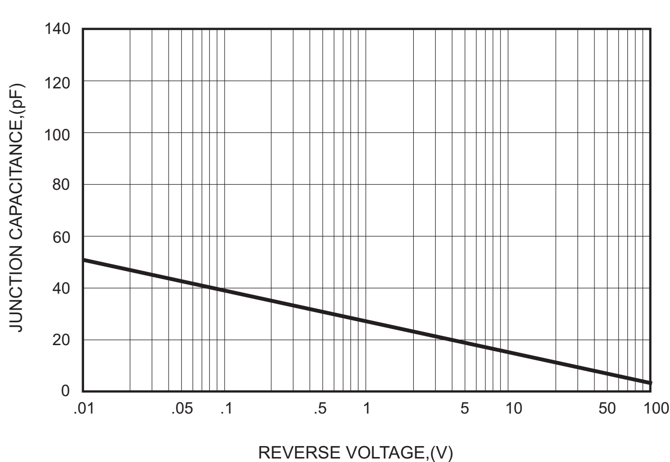


FIG.5-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE,(V)

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Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 2	1 2

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SMA-L	7"	2,000	4.0	20,000	183*170*183	178	382*356*387	160,000	15.5
SMA-L	13"	7,500	4.0	15,000	337*337*37	330	350*330*360	120,000	14.2

Marking

Type number	Marking code
HFM101L-TH	H11
HFM102L-TH	H12
HFM103L-TH	H13
HFM104L-TH	H14
HFM105L-TH	H15
HFM106L-TH	H16
HFM107L-TH	H17

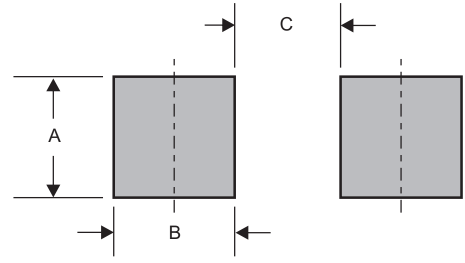
Note: L: Package code, SMA-L
-T: Taping Reel

Pb-Free package is available

RoHS product for packing code suffix ”G”

Halogen free product for packing code suffix “H”

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA-L	0.110 (2.80)	0.059 (1.50)	0.110 (2.80)

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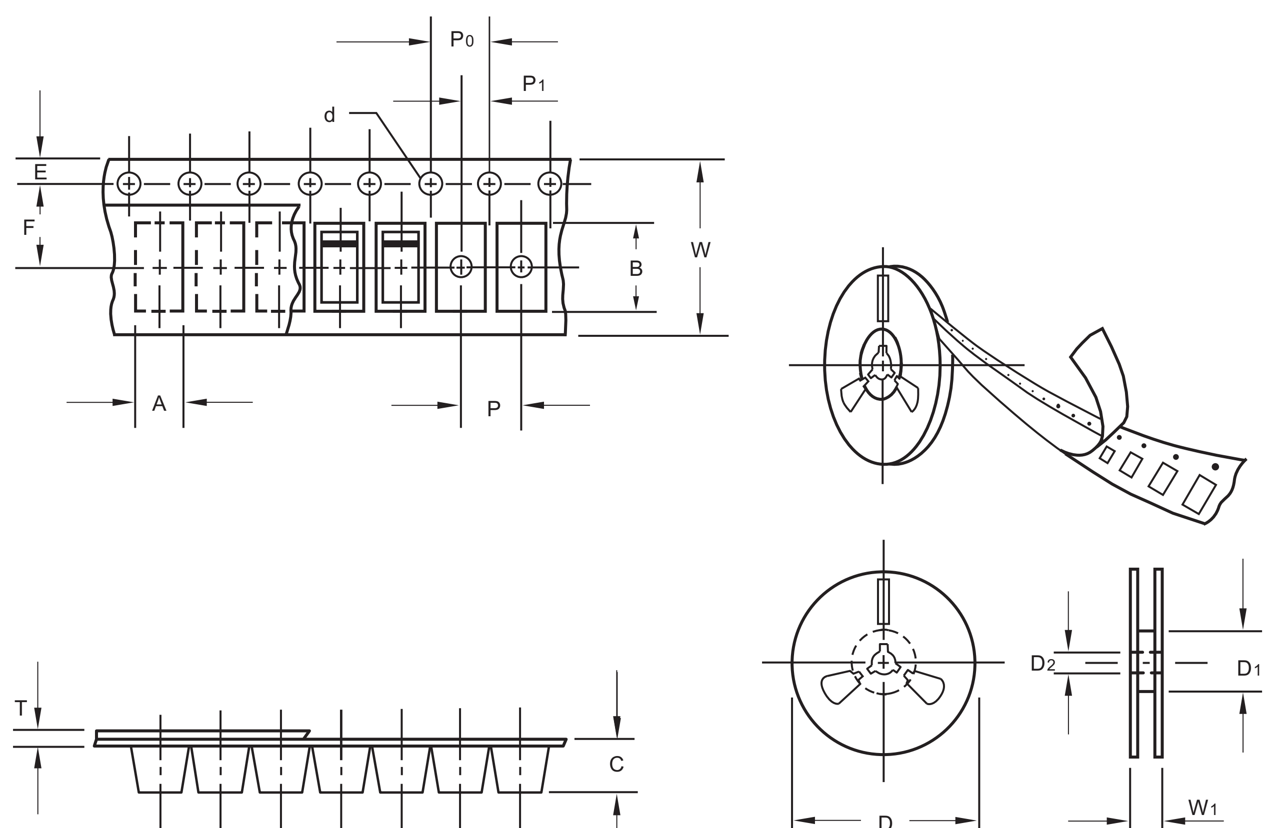
Packing information



unit:mm

Item	Symbol	Tolerance	SMA-L
Carrier width	A	0.1	2.90
Carrier length	B	0.1	5.50
Carrier depth	C	0.1	2.10
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D_1	min	50.00
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D_1	min	62.00
Feed hole diameter	D_2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P_0	0.1	4.00
Embossment center	P_1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	12.00
Reel width	W_1	1.0	18.00

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.