

LMDS34 THRU LMDS320

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LMDS34 THRU LMDS320

3.0A Surface Mount Schottky Barrier Bridge Rectifiers 40V-100V

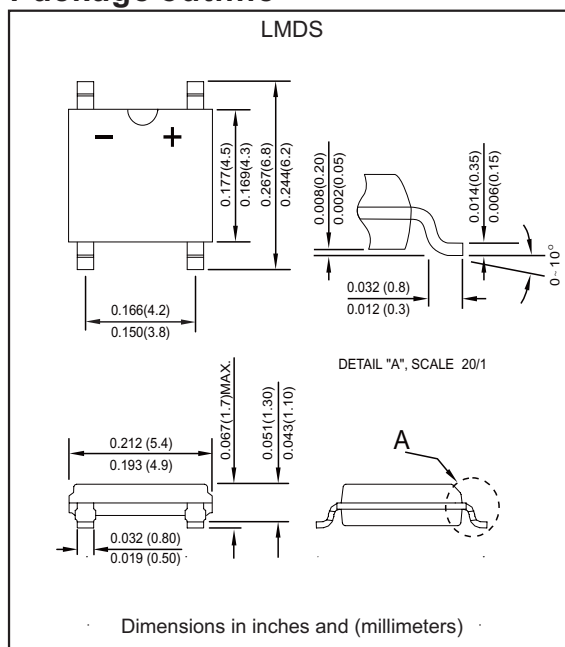
Features

- Low profile surface mounted application in order to optimize board space.
- For surface mounted applications
- Metal-Semiconductor junction with guarding
- Epitaxial construction
- Low reverse leakage
- High forward surge current capability
- Suffix "-H" indicates Halogen-free part, ex.LMBS34-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, LMDS
- Terminals : Solder plated, solderable per MIL-STD-202, Method 208
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 0.098 gram

Package outline



Maximum ratings and Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	LMDS34	LMDS36	LMDS38	LMDS310	LMDS315	LMDS320	UNITS
Repetitive peak reverse voltage	V _{RRM}	40	60	80	100	150	200	V
RMS voltage	V _{RMS}	28	42	56	70	105	140	V
DC blocking voltage	V _{DC}	40	60	80	100	150	200	V
Average forward rectified current at TL=100°C On glass-epoxy P.C.B (Note 1)	I _O	3.0						A
Peak forward surge current 8.3ms single half sine-wave (JEDEC Method)	I _{FSM}	80						A
Instantaneous forward voltage at I _F = 3.0A	V _F	0.55	0.70	0.85		0.95		V
Rating for fusing t< 8.3 ms	I ² t	26.5						A ² s
DC reverse current at rated DC blocking voltage	I _R	0.5 50		0.1 10				mA
Typical thermal resistance junction to ambient	R _{θJA}	80.0						°C / W
Operating junction temperature range	T _J	-55 to +125		-55 to +150				°C
Storage temperature range	T _{STG}	-55 to +150						°C

Rating and characteristic curves (LMDS34 THRU LMDS320)

FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

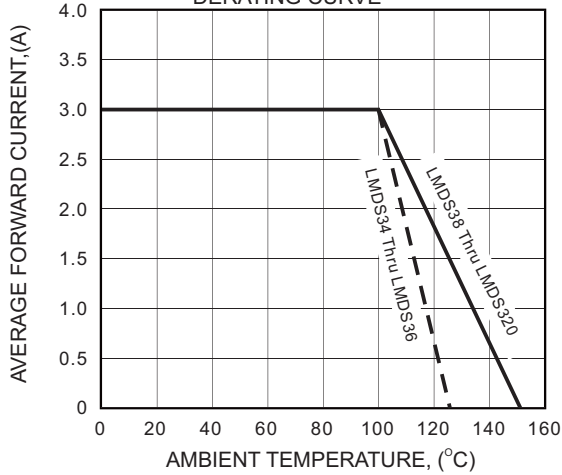


FIG.2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

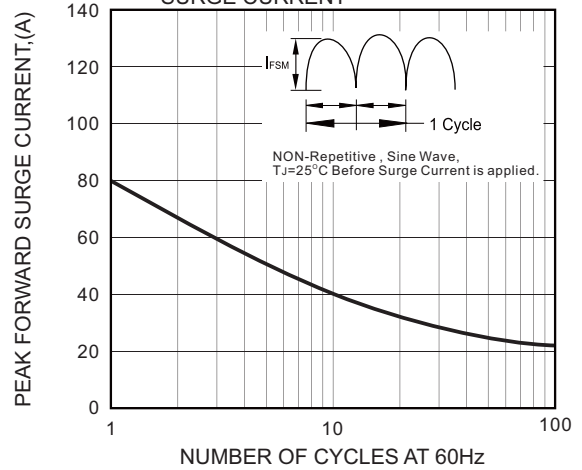


FIG.3 TYPICAL FORWARD VOLTAGE CHARACTERISTICS

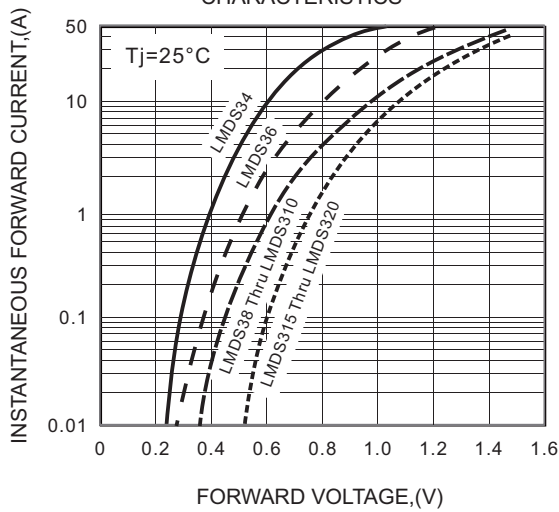
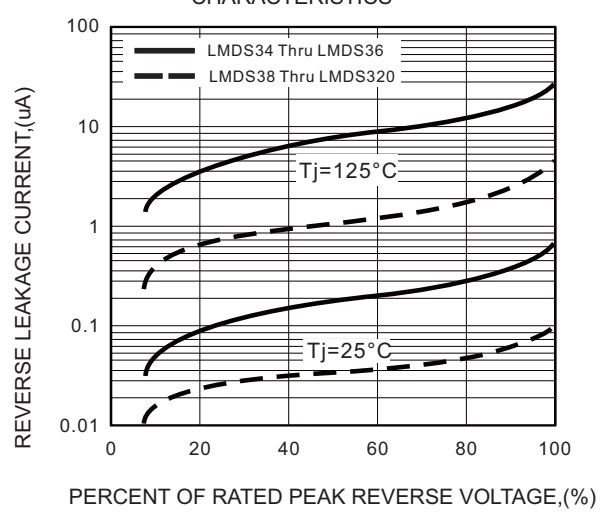
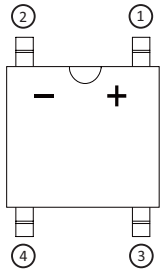
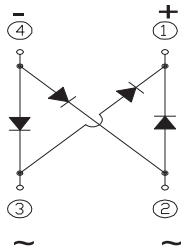


FIG.4 TYPICAL REVERSE LEAKAGE CHARACTERISTICS

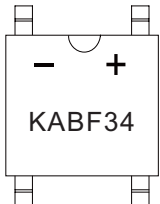


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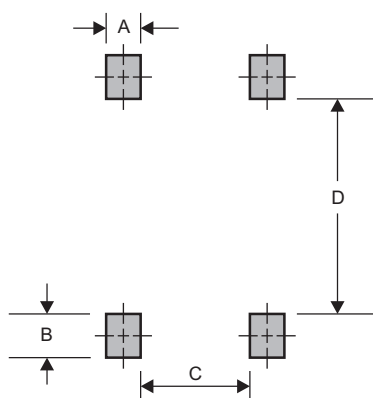
Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code	Example
LMDS34 LMDS36 LMDS38 LMDS310 LMDS315 LMDS320	KABF34 KABF36 KABF38 KABF310 KABF315 KABF320	

Suggested solder pad layout

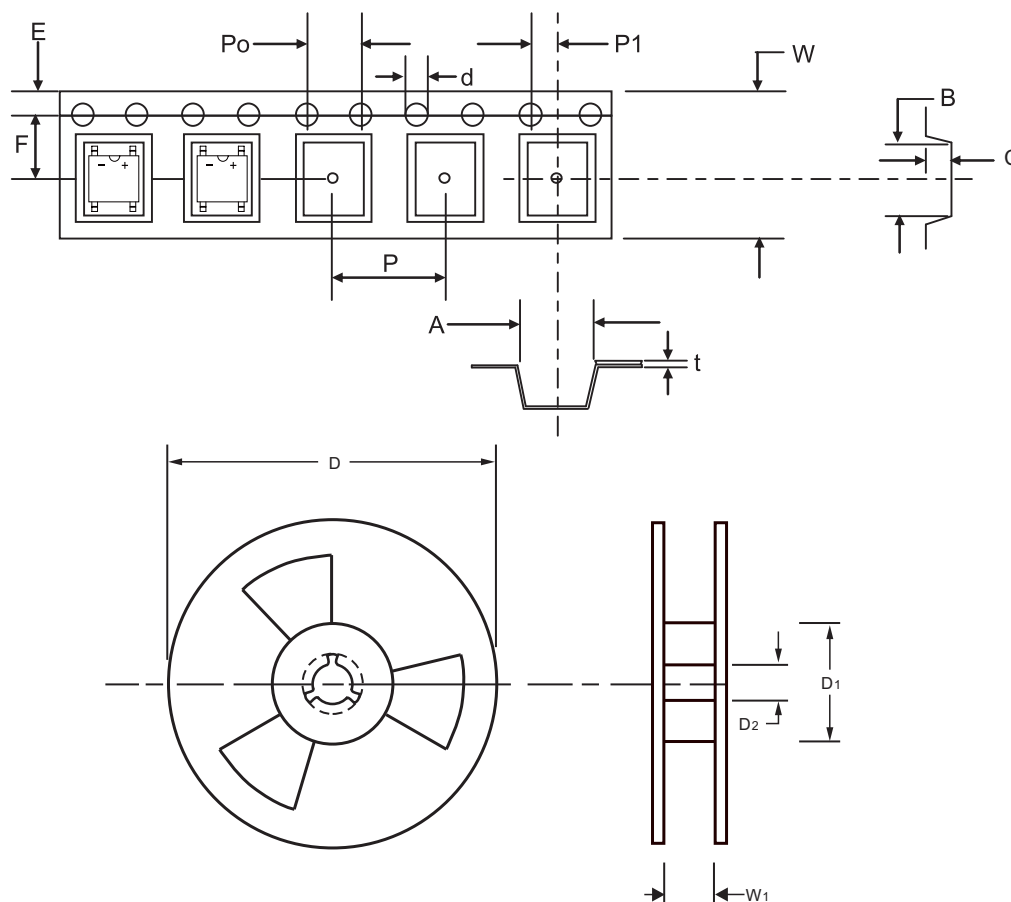


Dimensions in inches and (millimeters)

PACKAGE	A	B	C	D
LMDS	0.032 (0.80)	0.032 (0.80)	0.132 (3.35)	0.193 (4.90)

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Packing information



unit:mm

Item	Symbol	Tolerance	LMDS
Carrier width	A	0.1	5.31
Carrier length	B	0.1	6.68
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
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	-
7" Reel inner diameter	D ₁	min	-
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.05	5.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.05	2.00
Overall tape thickness	t	0.1	0.30
Tape width	W	0.3	12.00
Reel width	W ₁	1.0	12~14.4

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

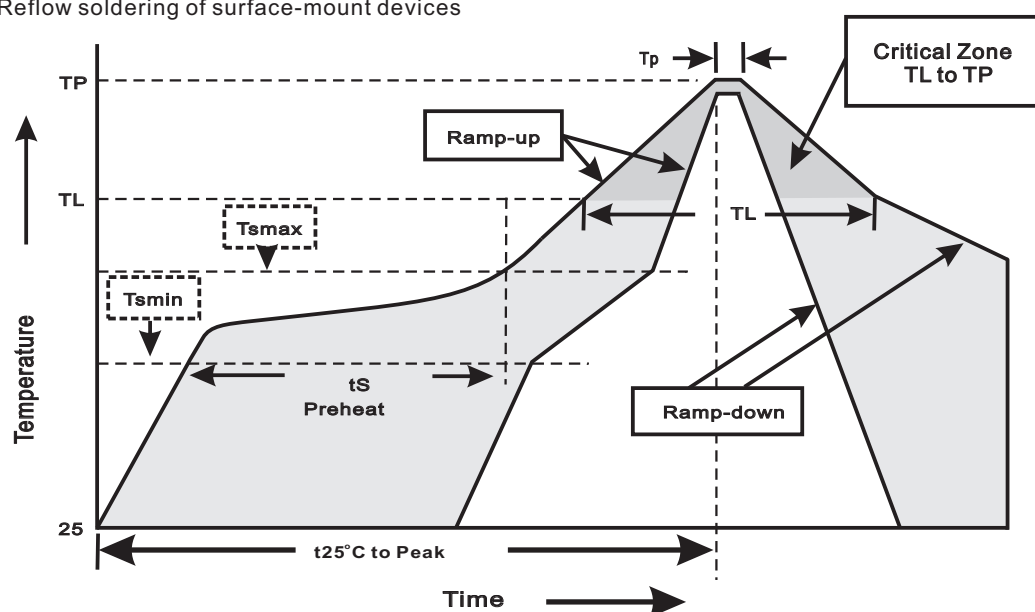
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Reel packing

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)
LMDS	13"	5,000	8.0	10,000	335*335*38	330	350*330*360	80,000	19.0

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} to T_L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for 10 sec.	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^\circ\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^\circ\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^\circ\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A = 121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^\circ\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at $T_A = 85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 150°C for 1000 hrs.	MIL-STD-750D METHOD-1031