

LMDS34A-Q1 THRU LMDS320A-Q1

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LMDS34A-Q1 THRU LMDS320A-Q1

3.0A Surface Mount Schottky Barrier Bridge Rectifiers 40V-200V

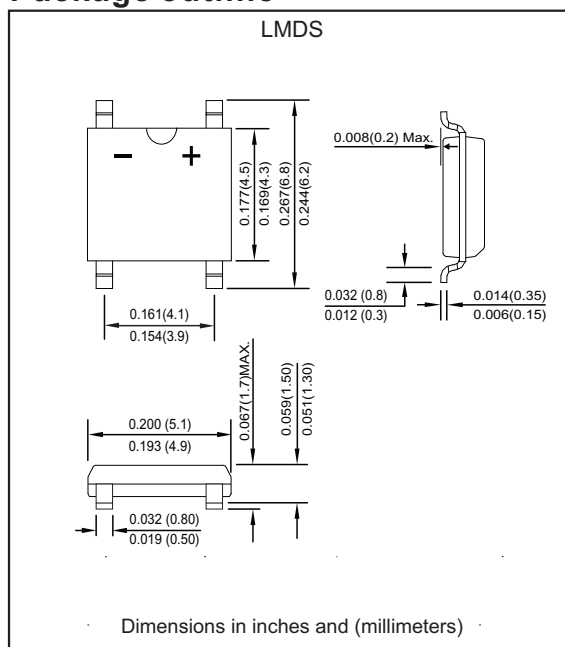
Features

- 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
- Qualified to AEC-Q101 standards for high reliability.
- Suffix "-H" indicates Halogen-free part, ex. LMDS34A-Q1-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	LMDS 34A-Q1	LMDS 36A-Q1	LMDS 38A-Q1	LMDS 310A-Q1	LMDS 315A-Q1	LMDS 320A-Q1	UNITS
Repetitive peak reverse voltage	VRRM	40	60	80	100	150	200	V
RMS voltage	VRMS	28	42	56	70	105	140	V
DC blocking voltage	VDC	40	60	80	100	150	200	V
Average forward rectified current at TL=100°C On glass-epoxy P.C.B (Note 1)	Io	3.0						A
Peak forward surge current 8.3ms single half sine-wave (JEDEC Method)	IFSM	80						A
Instantaneous forward voltage at IF = 3.0A	VF	0.55	0.70	0.85		0.95		V
Rating for fusing t< 8.3 ms	I²t	26.5						A²s
DC reverse current at rated DC blocking voltage	IR	0.2 10		0.05 5				mA
Typical thermal resistance junction to ambient	RθJA	75.0						°C / W
Operating junction temperature range	TJ	-55 to +150						°C
Storage temperature range	TSTG	-55 to +150						°C

Rating and characteristic curves (LMDS34A-Q1 THRU LMDS320A-Q1)

FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

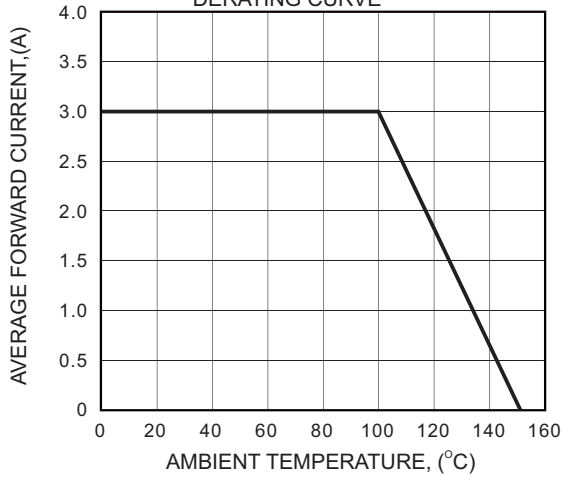


FIG.2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

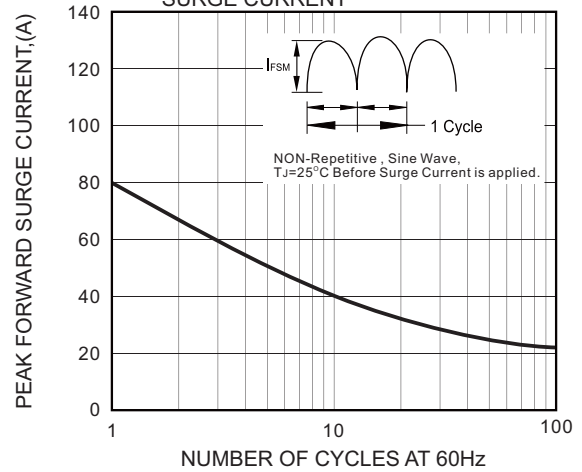


FIG.3 TYPICAL FORWARD VOLTAGE CHARACTERISTICS

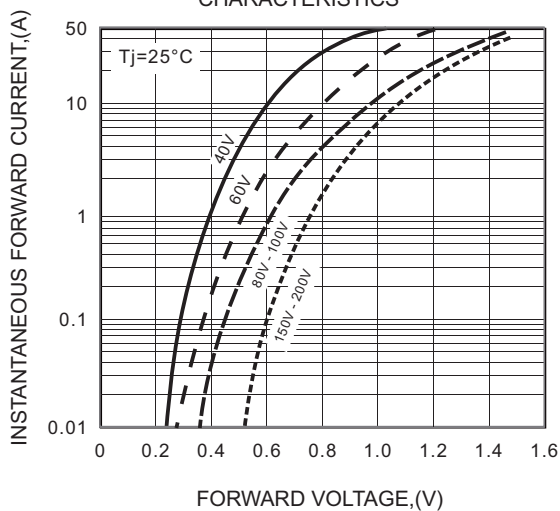
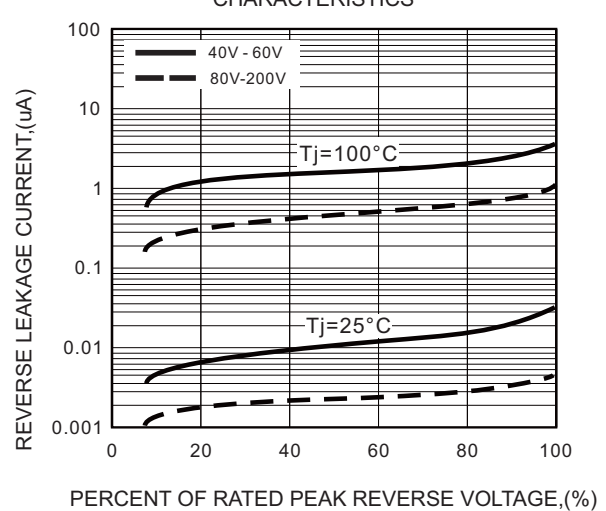
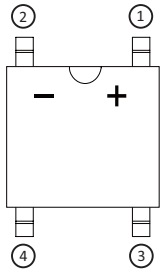
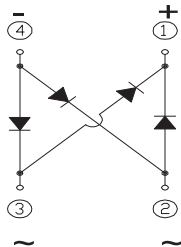


FIG.4 TYPICAL REVERSE LEAKAGE CHARACTERISTICS

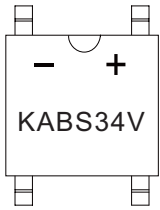


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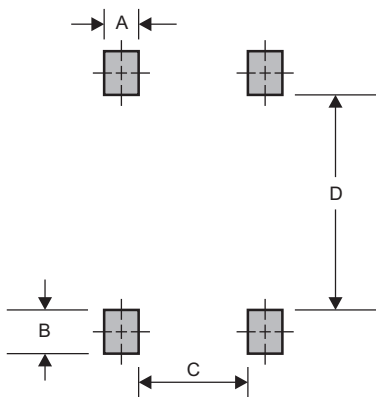
Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code	Example
LMDS34A-Q1 LMDS36A-Q1 LMDS38A-Q1 LMDS310A-Q1 LMDS315A-Q1 LMDS320A-Q1	KABS34V KABS36V KABS38V KABS310V KABS315V KABS320V	

Suggested solder pad layout

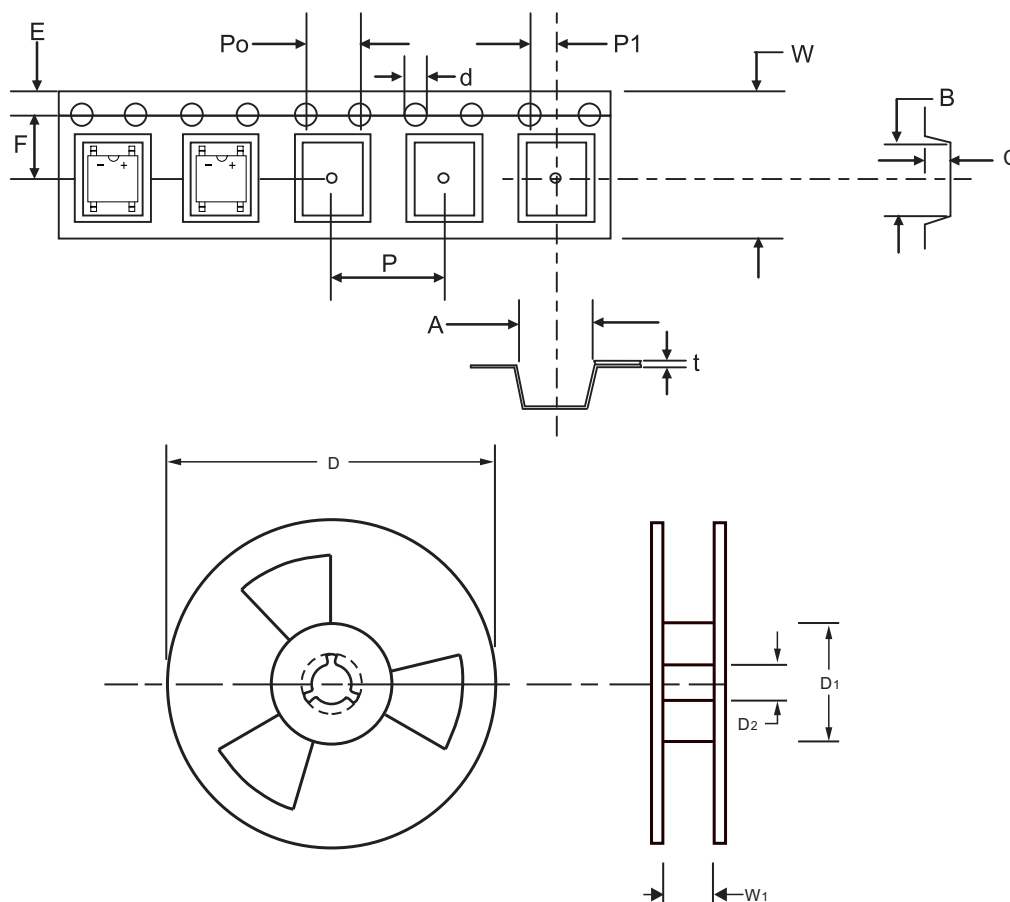


Dimensions in inches and (millimeters)

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.

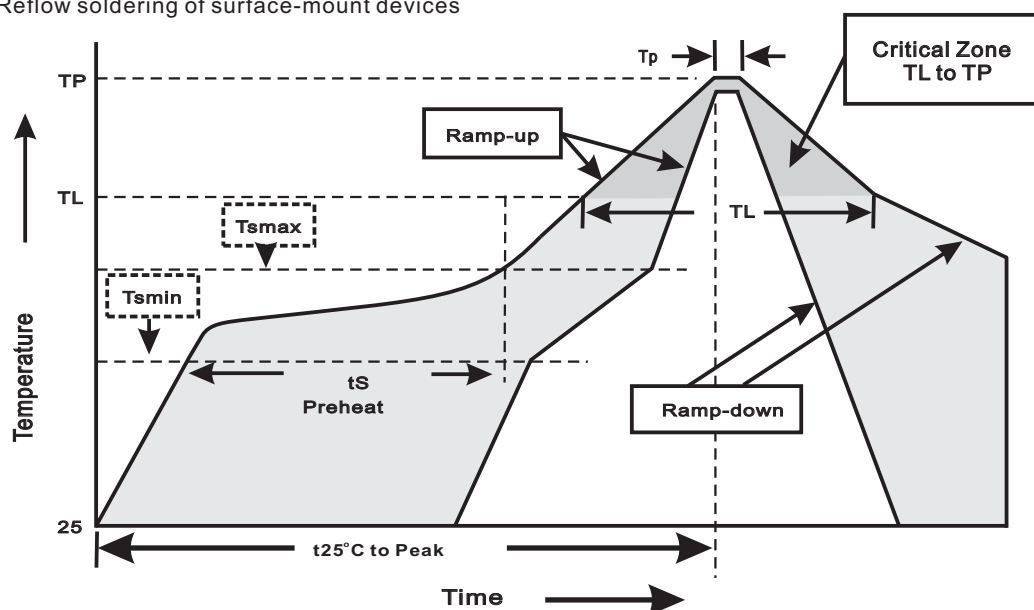
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Reel packing

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

LMDS34A-Q1 THRU LMDS320A-Q1**High reliability test capabilities**

Item Test	Conditions	Reference
1. MSL Preconditioning	24hr bake@125°C+168hrs@85°C /85%RH+3xIR@260°C+1flux immersion+alcohol+DI H ₂ O rinse	JESD22-A113
2. Operation Life	Ta=25°C, Rated Current (Io=Iomax.)Test Duration:1000hrs	MIL-STD-750E METHOD 1027.3
3. High Temperature Reverse Bias	80% Rated VR (Tj=Tjmax.) Test Duration:1000hrs	JESD22-A108
4. High Temperature Storage Life	Ta=125°C Test Duration: 1000hrs	JESD22 A-103
5. Temperature Cycle	-55°C(15min) to 150°C(15min)Test Cycles: 1000cycles	JESD22 A-104
6. Autoclave	P=2atm Ta=121°C RH=100% Test Duration:96hrs	JESD22 A-102
7. Intermittent Operational Life	Ta=25°C, On/Io Max. 2min, Off/2min, Test Cycles:15000cycles	MIL-STD-750E METHOD 1037
8. Solderability	245±5°C for 5sec	J-STD-002
9. Moisture Resistance	Ta=85°C/85% Relative humidity Test Duration:1000hrs	MIL-STD-750E METHOD 1021.2
10. Resistance To Solder Heat	260±5°C for 10sec	JESD22 B-106
11. High Temperature High Humidity Reverse Bias	Ta=85°C, 85%RH, with device reverse biased at 80% of rated breakdown voltage up to a maximum of 100V or limit of chamber Test Duration:1000hrs	JESD22-A101