

LMDS24A THRU LMDS220A

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LMDS24A THRU LMDS220A

2.0A Surface Mount Schottky Barrier Bridge Rectifiers: 40-200V

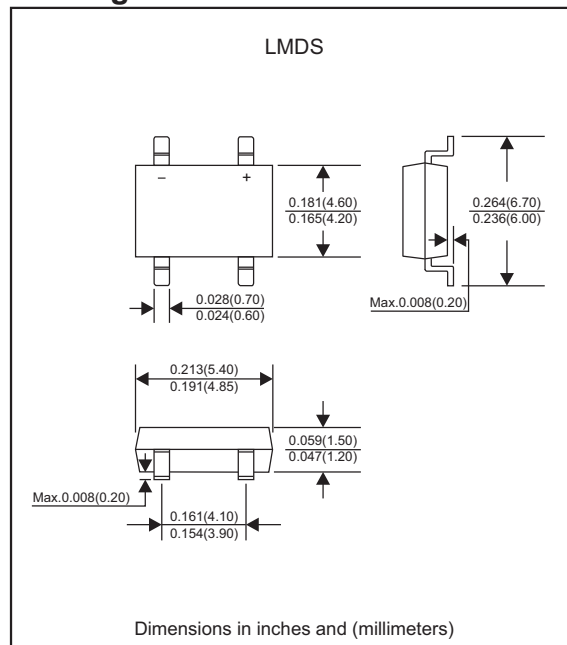
Features

- Low profile package.
- High surge current capability.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free part, ex. LMDS24A-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, LMDS
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 0.09gram

Package outline



Maximum ratings (AT TA=25°C unless otherwise noted)

PARAMETER	SYMBOLS	LMDS24A	LMDS26A	LMDS28A	LMDS210A	LMDS220A	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	40	60	80	100	200	Volts
Maximum RMS voltage	V _{RMS}	28	42	56	70	140	Volts
Maximum DC blocking voltage	V _{DC}	40	60	80	100	200	Volts
Maximum average forward rectified current	I _O	2.0					Amps
Peak forward surge current 8.3ms single half sine-wave (JEDEC Methode)	I _{FSM}	50					Amps
Operating junction temperature range	T _J	-55 to +150					°C
Storage temperature range	T _{STG}	-55 to +150					°C

Electrical characteristics (AT TA=25°C unless otherwise noted)

PARAMETER	SYMBOLS	LMDS24A	LMDS26A	LMDS28A	LMDS210A	LMDS220A	UNITS
Maximum instantaneous forward voltage at I _F =2.0A	V _F	0.55	0.70	0.85		0.95	Volts
Maximum DC reverse current at T _J =25°C at rated DC blocking voltage	I _R		0.5 20		0.3 5		mA

Rating and characteristic curves (LMDS24A THRU LMDS220A)

Fig. 1 - Forward Current Derating Curve

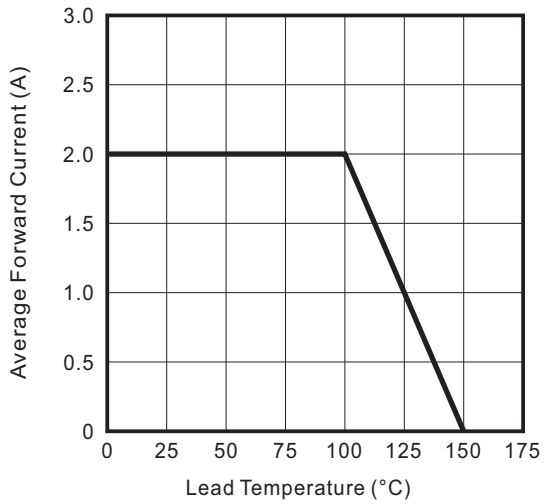


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

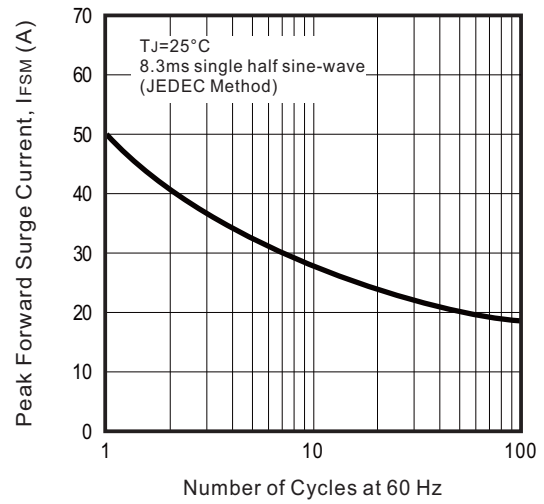


Fig. 3 - Typical Instantaneous Forward Characteristics

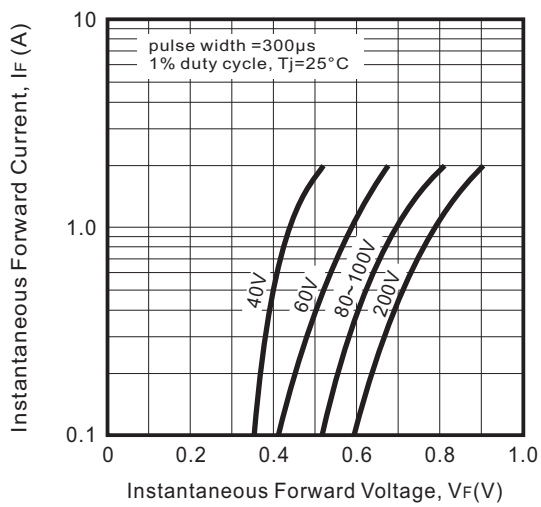
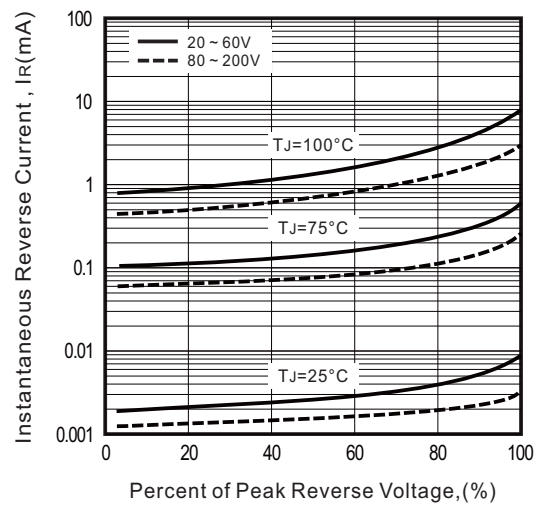
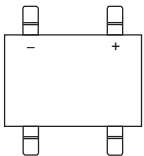
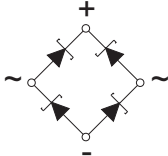


Fig. 4 - Typical Reverse Leakage Characteristics



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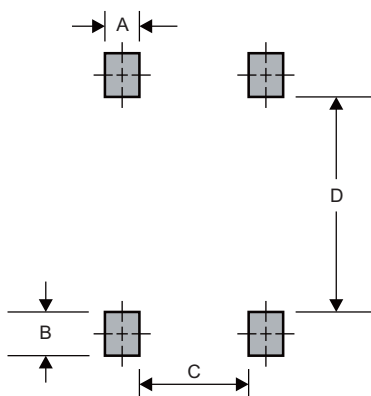
Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
LMDS24A	TB24S
LMDS26A	TB26S
LMDS28A	TB28S
LMDS210A	TB210S
LMDS220A	TB220S

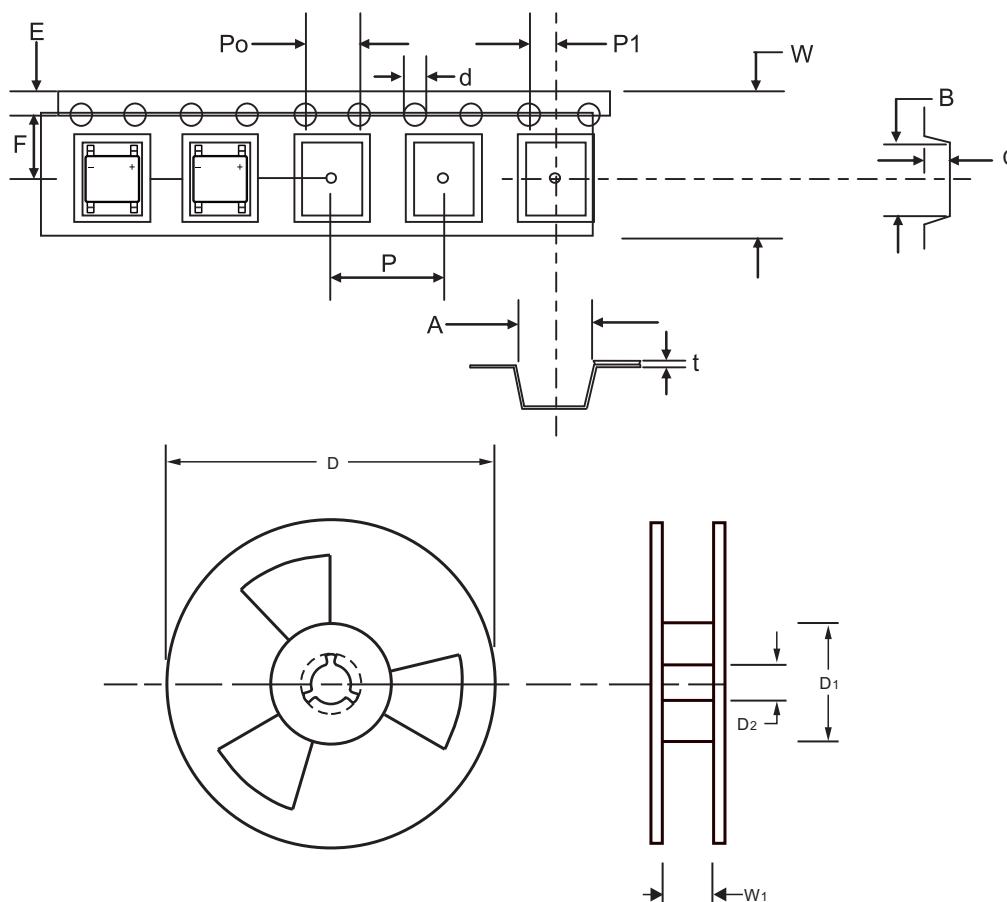
Suggested solder pad layout



PACKAGE	A	B	C	D
LMDS	0.040 (1.00)	0.080 (2.00)	0.119 (3.00)	0.166 (4.20)

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Packing information



unit:mm

Item	Symbol	Tolerance	LMDS
Carrier width	A	0.1	5.40
Carrier length	B	0.1	6.75
Carrier depth	C	0.1	1.65
Sprocket hole	d	0.1	1.55
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D ₁	min	75.00
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	0.1	5.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	t	0.1	0.30
Tape width	W	0.3	12.00
Reel width	W ₁	0.5	15.00

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

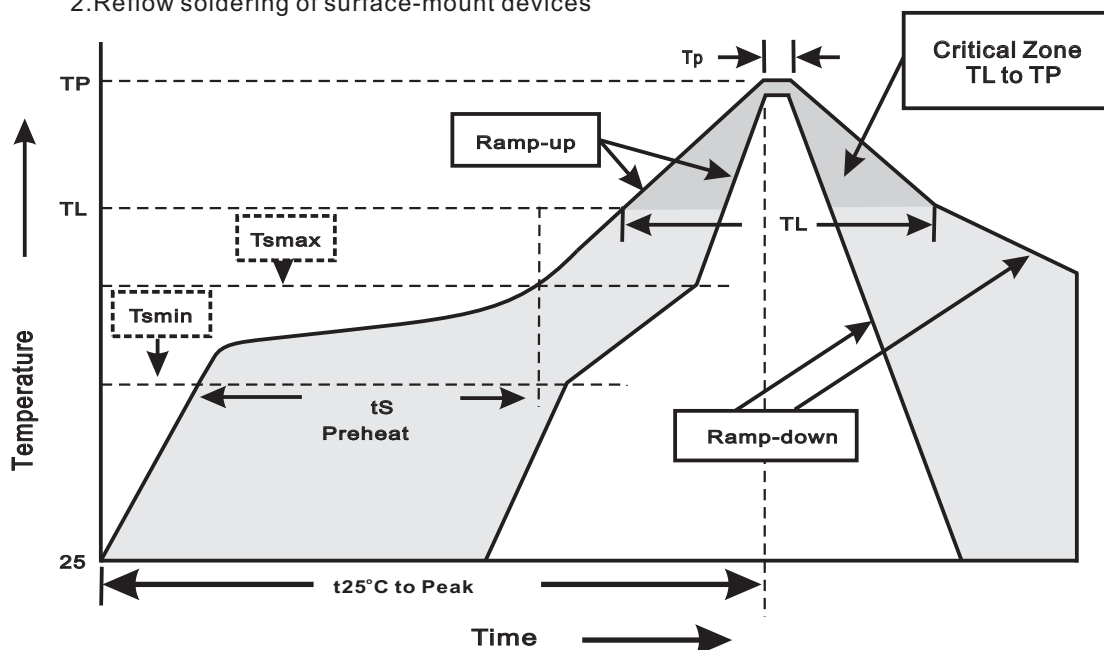
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Reel packing

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	11"	3,000	8.0	6,000	290*290*40	330	315*315*360	48,000	13.0
	13"	5,000	8.0	10,000	342*342*45	330	365*365*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

LMDS24A THRU LMDS220A**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^\circ\text{C}$ for $10 \pm 2\text{sec.}$	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 $T_J = 125^\circ\text{C}$ 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 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031