

KLFM140-T1608

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KLFM140-T1608

1A Surface Mount Low Leakage Schottky Barrier Rectifier 40V

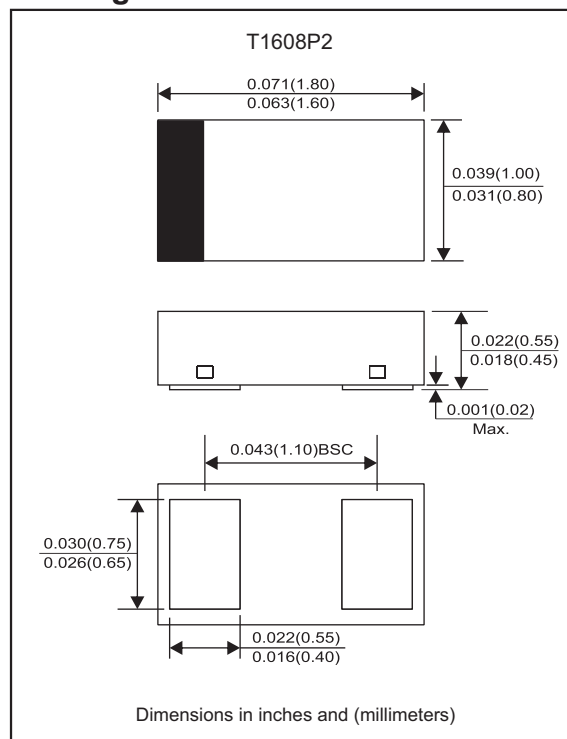
Features

- Low leakage current
- Designed for mounting on small surface.
- Extremely thin package.
- Majority carrier conduction.
- We declare that the material of product compliance with RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex.KLFM140-T1608-H

Mechanical data

- Case : Molded plastic, T1608P2
- Terminal: Sn/Au plated, solderable per MIL-STD-750D,method 2026.
- Mounting Position : Any
- Weight : 0.003gram (approx.)

Package outline



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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Reverse stand-off voltage		V _{RRM}			40	V
DC reverse voltage		V _R			40	V
Average forward rectifying current		I _O			1	A
Peak forward surge current	8.3ms single half-wave superimposed on rate load (JEDEC method)	I _{FSM}			9	A
Power dissipation	Junction to ambient	P _D			500	mW
Thermal resistance	Junction to ambient	R _{θJA}		181		°C/W
Operating junction temperature range		T _J	-55		+150	°C
Storage temperature range		T _{STG}	-55		+150	°C

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

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 100mA I _F = 500mA I _F = 1000mA	V _F		0.31 0.41 0.50	0.36 0.46 0.56	V
Reverse current	V _R = 10 V V _R = 40 V	I _R			15 40	uA
Capacitance between terminals	V _R = 0 V, f = 1MHz	C _T		125		pF

Rating and characteristic curves(KLFM140-T1608)

Fig.1 - Forward Characteristics

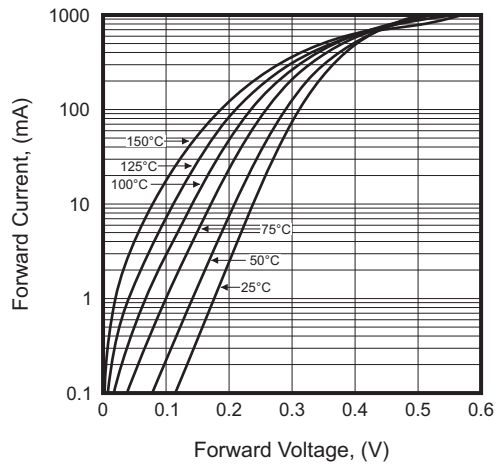


Fig.2 - Reverse Characteristics

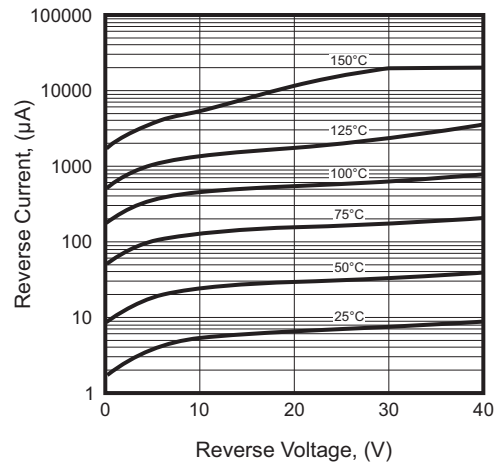


Fig.3 - Typical Capacitance Between Terminals Characteristics

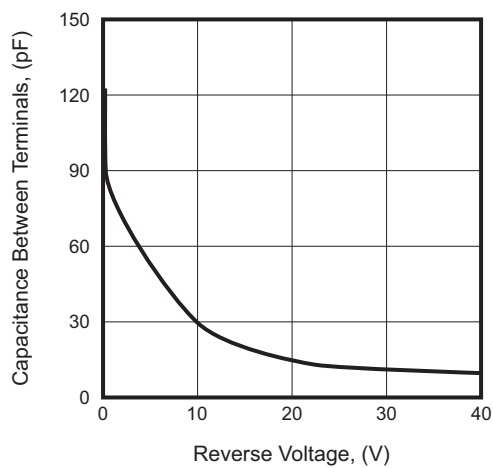
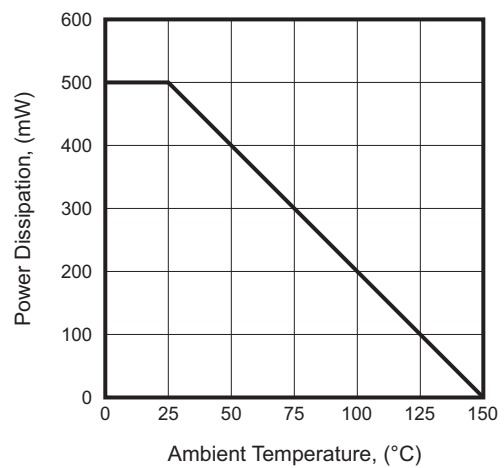


Fig.4 - Power Derating Curve



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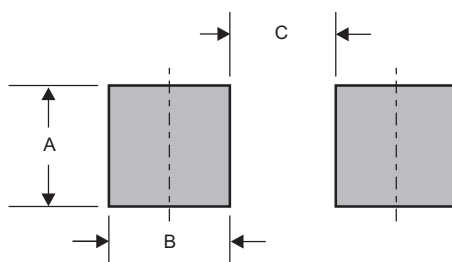
Pinning information

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

Marking

Type number	Marking code
KLFM140-T1608	14L

Suggested solder pad layout

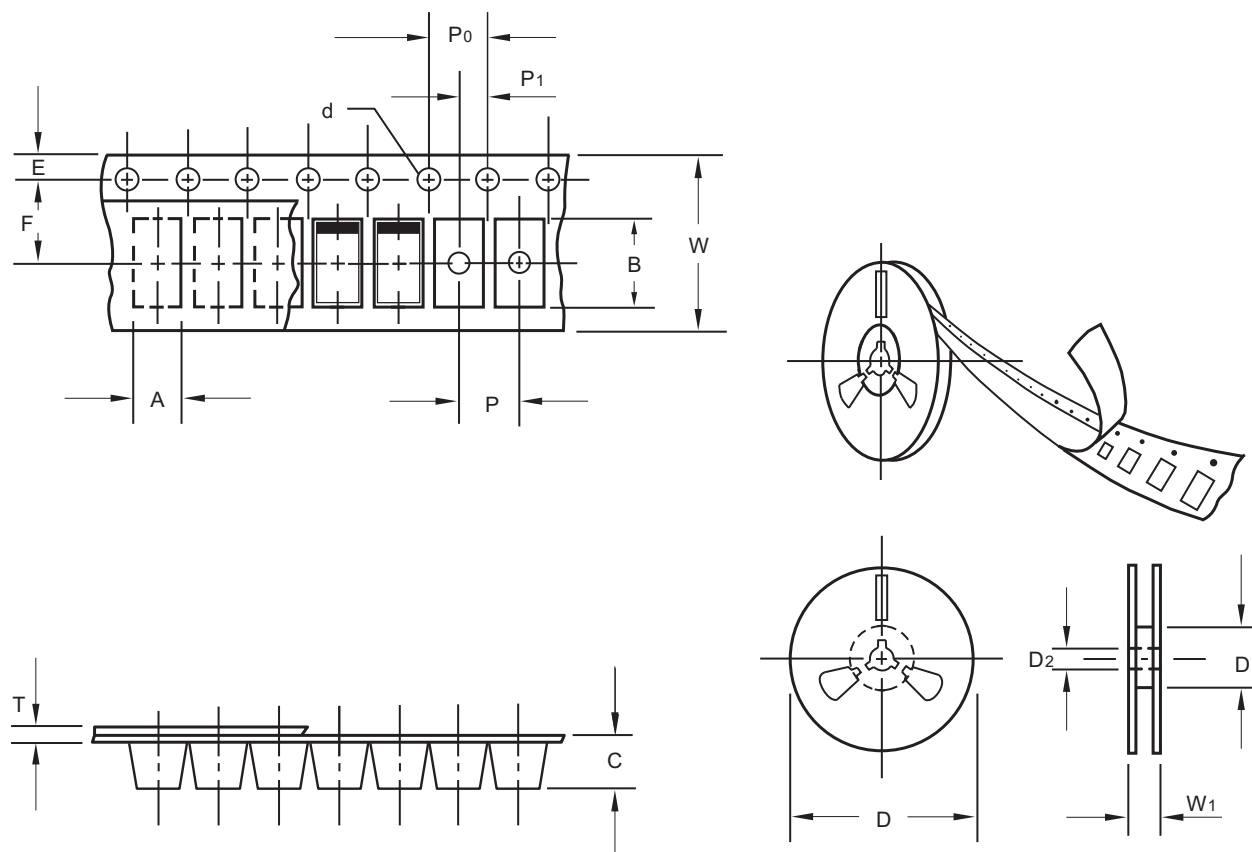


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
T1608P2	0.039 (1.00)	0.028 (0.70)	0.016 (0.40)

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Packing information



unit:mm

Item	Symbol	Tolerance	T1608P2
Carrier width	A	0.05	1.05
Carrier length	B	0.05	1.96
Carrier depth	C	0.05	0.57
Sprocket hole	d	0.1	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	60.00
Feed hole diameter	D ₂	0.2	13.50
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
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	0.20
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	12.00

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

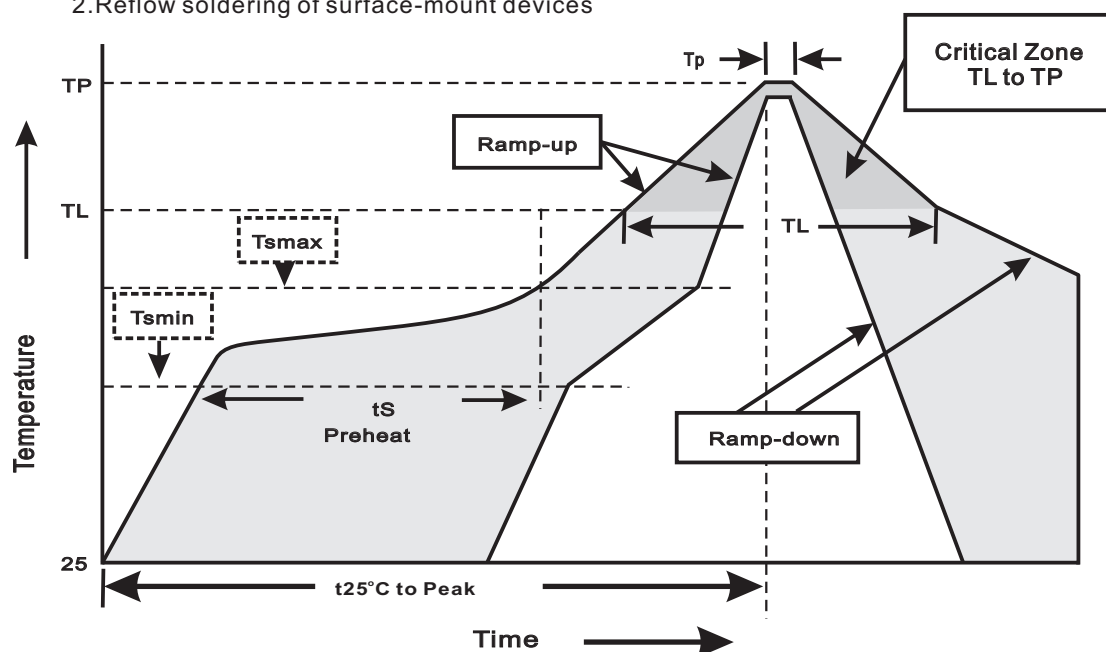
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Reel packing

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)
T1608P2	7"	4,000	2.0	40,000	183*123*183	178	382*257*387	320,000	9.5

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 _{smmin}) -Temperature Max(T _{smmax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smmax} 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 $10 \pm 2\text{sec.}$	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	$V_{\text{BR}} = V_{\text{BR Min}} * 80\%$ at $T_{\text{J}} = 125^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Pressure Cooker	$15P_{\text{SIG}}$ at $T_{\text{A}} = 121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
5. 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
6. Humidity	at $T_{\text{A}} = 85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
7. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031