

FM140-T1006A

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FM140-T1006A

1.0A Surface Mount
Reverse voltage : 40V

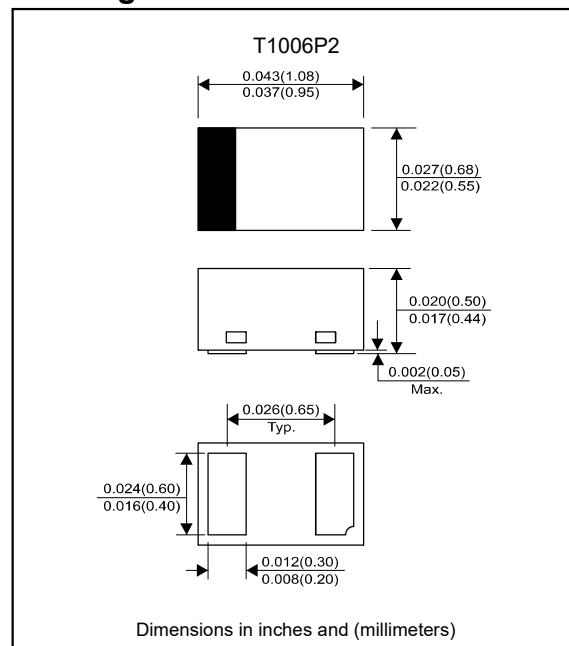
Features

- Low forward voltage
- Very small SMD package.
- We declare that the material of product compliance with RoHS requirements.
- Suffix "-H" indicates Halogen-free parts, ex.FM140-T1006A-H

Mechanical data

- Case : Molded plastic, T1006P2
- Terminal: Sn/Au plated, solderable per MIL-STD-750D,method 2026.
- Mounting Position : Any
- Weight : 0.0001gram (approx.)

Package outline



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

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RWM}	40	V
Maximum RMS voltage	V_{RMS}	28	V
Average rectified output current	I_O	1.0	A
Non-repetitive peak forward surge current @ $t=8.3\text{ms}$	I_{FSM}	7	A
Power dissipation (Note 1)	P_D	500	mW
Typical resistance form junction to ambient	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Operating junction temperature range	T_J	+150	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical characteristics (At $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Type.	Max.	Unit
Reverse breakdown volage	$I_R=1\text{mA}$	V_{BR}	40			V
Forward voltage	$I_F=0.1\text{A}$	V_F		0.35	0.38	V
	$I_F=0.2\text{A}$			0.37	0.40	
	$I_F=0.5\text{A}$			0.42	0.49	
	$I_F=0.7\text{A}$			0.47	0.55	
	$I_F=1\text{A}$			0.51	0.55	
Reverse current	$V_R=40\text{V}$	I_R				μA
Total capacitance	$V_R=10\text{V}$, $f=1\text{MHz}$	C_{tot}		19		pF

Notes : 1. Device mounted on a 1 in². ceramic PCB which spread 2 ounces of copper.

Rating and characteristic curves(FM140-T1006A)

Fig.1 - Forward Characteristics

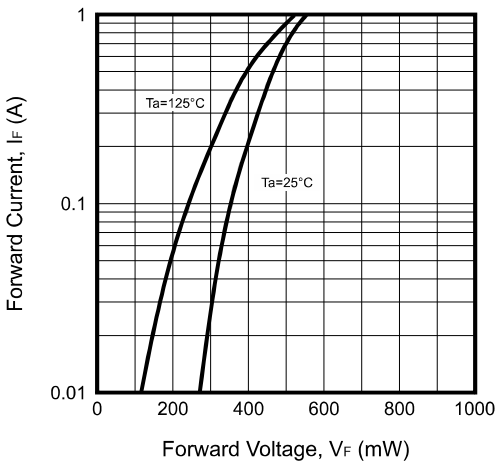


Fig.2 - Reverse Characteristics

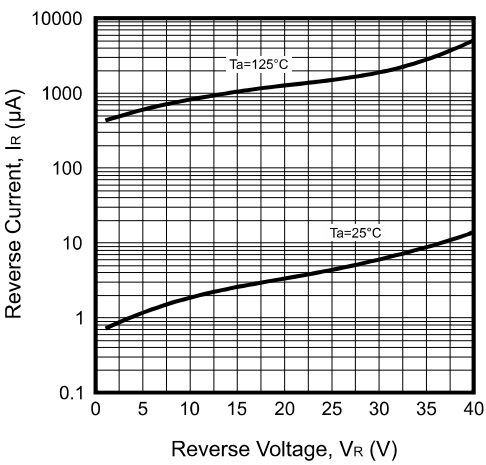
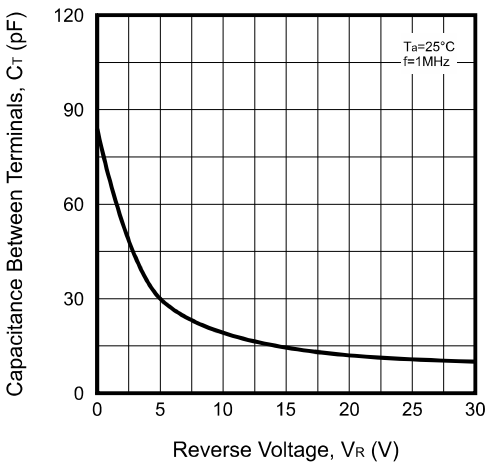


Fig.3 - Capacitance Characteristic

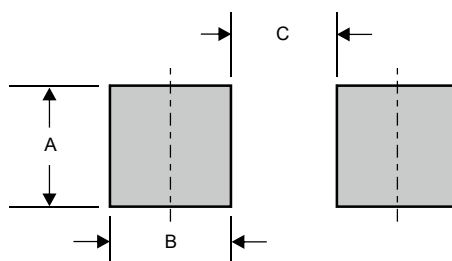


FM140-T1006A**Pinning information**

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
FM0140L-T1006	4A

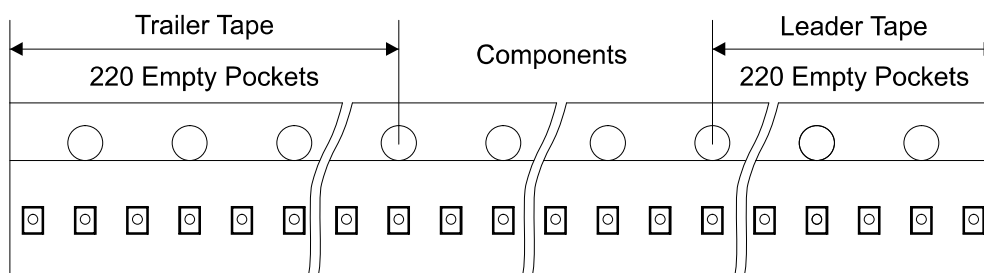
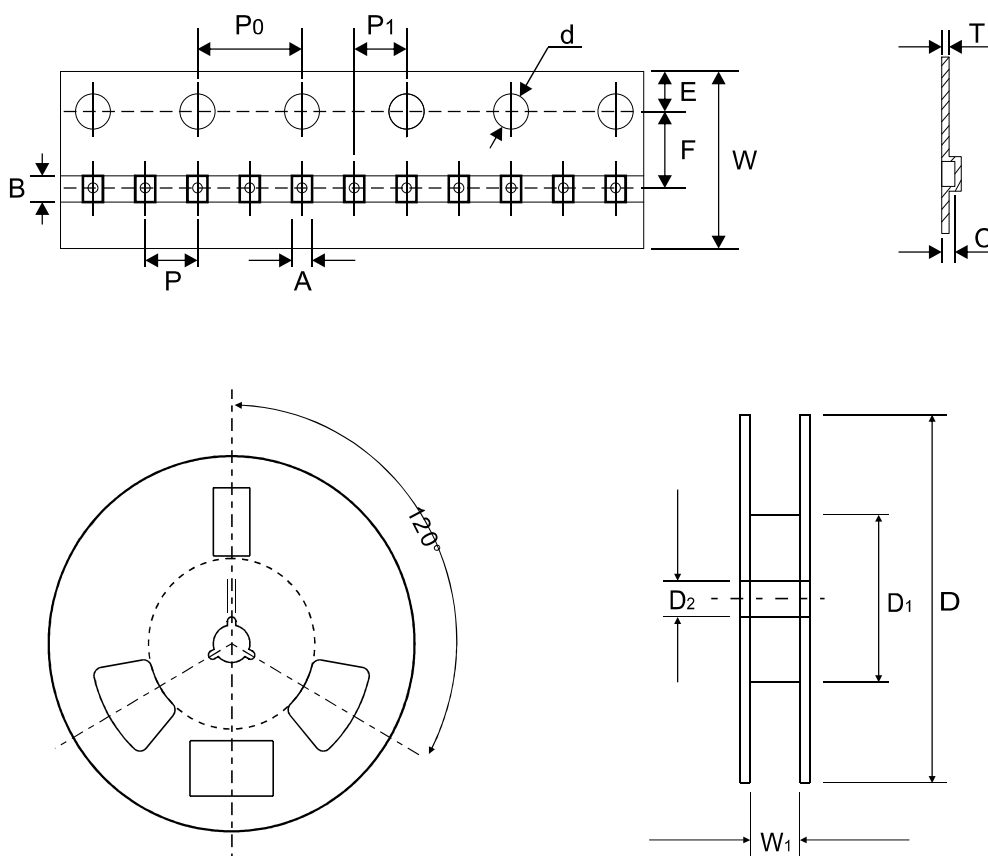
Suggested solder pad layout

Dimensions in inches and (millimeters)

PACKAGE	A	B	C
T1006P2	0.024 (0.60)	0.020 (0.50)	0.012 (0.30)

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Packing information



T1006P2	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.71 ± 0.05	1.11 ± 0.05	0.48 ± 0.05	1.55 ± 0.05	178 ± 1.00	54.00 ± 0.40	13.00 ± 0.20
	(inch)	0.028 ± 0.002	0.044 ± 0.002	0.019 ± 0.002	0.061 ± 0.002	7.008 ± 0.039	2.126 ± 0.016	0.512 ± 0.008

T1006P2	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	0.23 ± 0.02	$8.00 + 0.30 - 0.10$	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.009 ± 0.001	$0.315 + 0.012 - 0.004$	0.374 ± 0.039

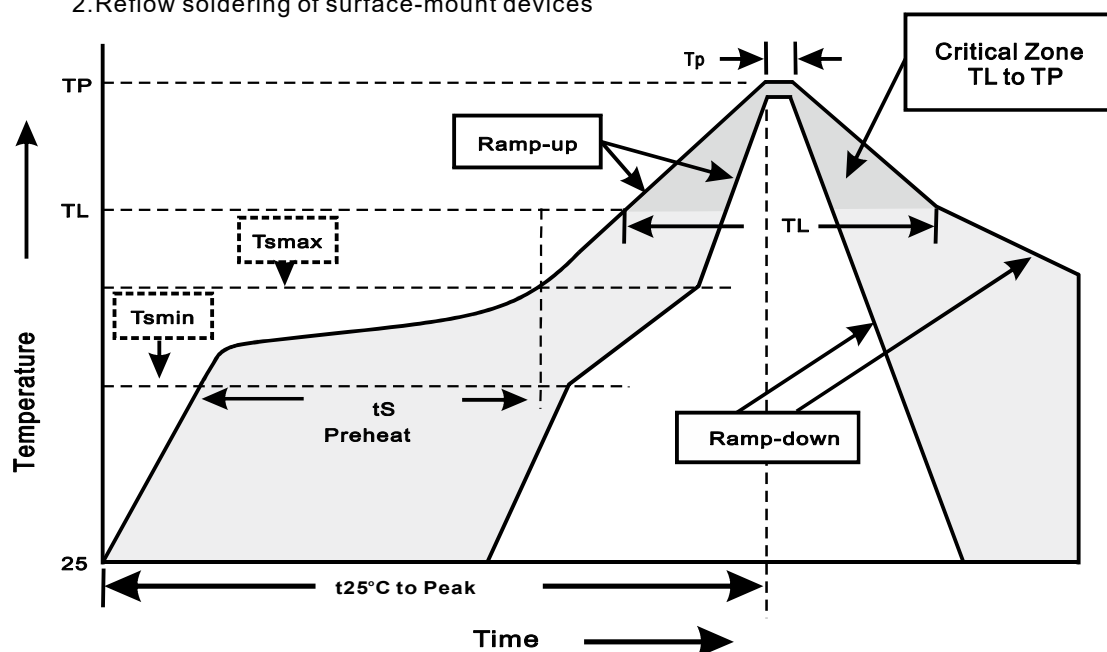
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Reel packing

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)
T1006P2	7"	5,000	4.0	50,000	183*123*183	178	382*257*387	400,000	10.2

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 $10 \pm 2\text{sec.}$	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 $T_J = 150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Pressure Cooker	$15P_{\text{SIG}}$ at $T_A = 121^{\circ}\text{C}$ 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 $T_A = 85^{\circ}\text{C}$, 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