

FM820-T7B-Q1 Thru FM8200-T7B-Q1

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FM820-T7B-Q1 Thru FM8200-T7B-Q1

8.0A Surface Mounted Schottky Barrier Rectifiers : 20V ~ 200V

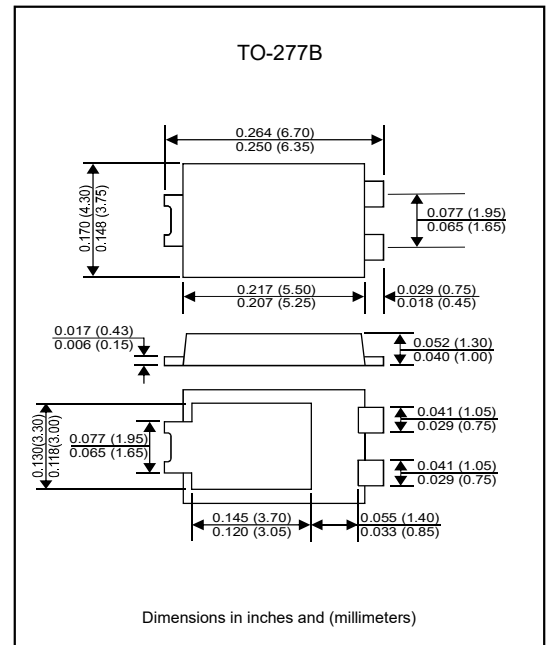
Features

- For surface mounted applications.
- Built-in strain relief, ideal for automated placement.
- Low reverse leakage.
- High forward surge current capability.
- Qualified to AEC-Q101 standards for high reliability.
- Lead free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen free parts, ex. FM820-T7B-Q1-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-277B.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity : Polarity symbol marking on body.
- Mounting Position : Any.

Package outline



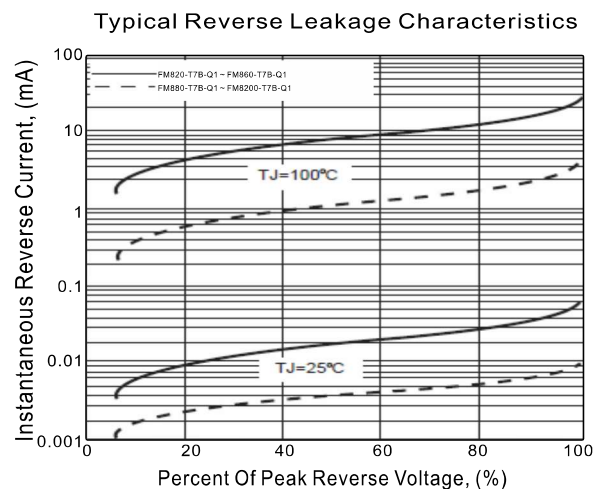
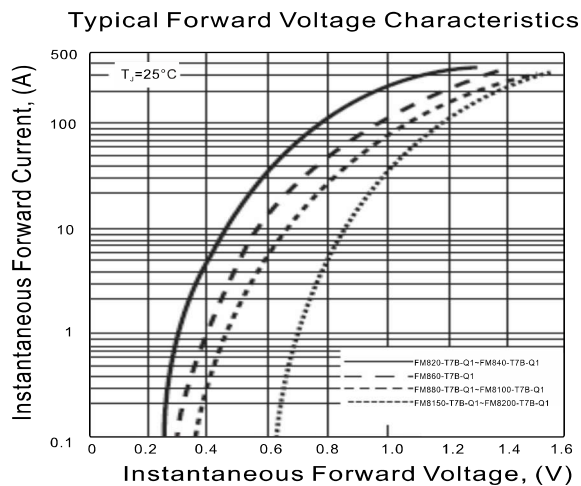
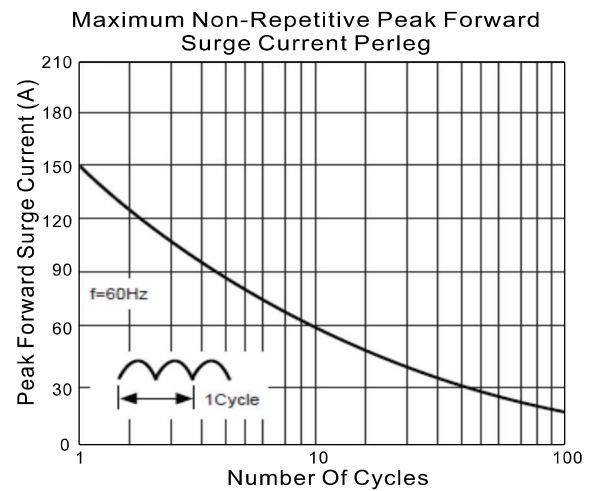
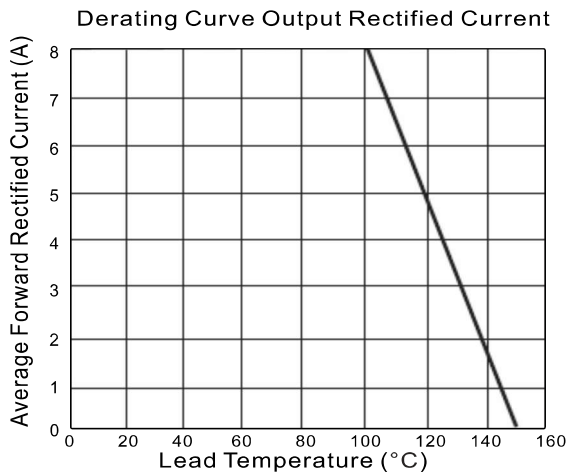
Maximum ratings and electrical characteristics (At TA=25°C, unless otherwise noted.)

Parameter	Symbol	FM820- T7B-Q1	FM840- T7B-Q1	FM860- T7B-Q1	FM880- T7B-Q1	FM8100- T7B-Q1	FM8150- T7B-Q1	FM8200- T7B-Q1	Unit
Repetitive peak reverse voltage	V _{RRM}	20	40	60	80	100	150	200	V
RMS voltage	V _{RMS}	14	28	42	56	70	105	140	V
DC blocking voltage	V _{DC}	20	40	60	80	100	150	200	V
Average forward rectified current T _L =100°C	I _(AV)	8							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	150							A
Maximum instantaneous forward voltage at 8A	V _F	0.55		0.70	0.85		0.95		V
Maximum DC reverse current (T _A =25°C)	I _R	0.2			0.05				mA
at rated DC blocking voltage (T _A =100°C)		10			5				
Typical thermal resistance	R _{θJA}	60							°C/W
Operating junction temperature	T _J	+150							°C
Storage temperature range	T _{STG}	-55 to +150							°C

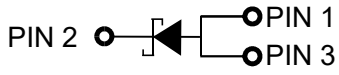
Note : 1.Single phase half-wave 60Hz,resistive or inductive load, for capacitive load current derate by 20%.

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Rating and characteristic curves

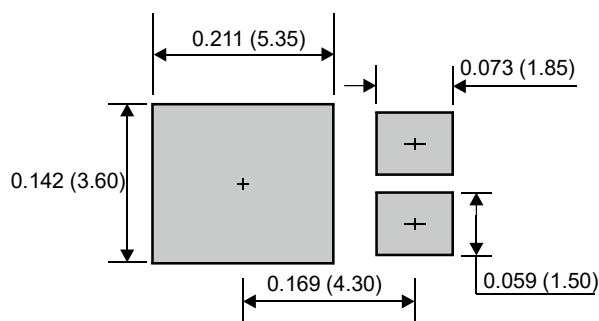


FM820-T7B-Q1 Thru FM8200-T7B-Q1**Pinning information**

Pin	Simplified outline	Symbol
PIN 1 Anode PIN 3 Anode PIN 2 Cathode		

Marking

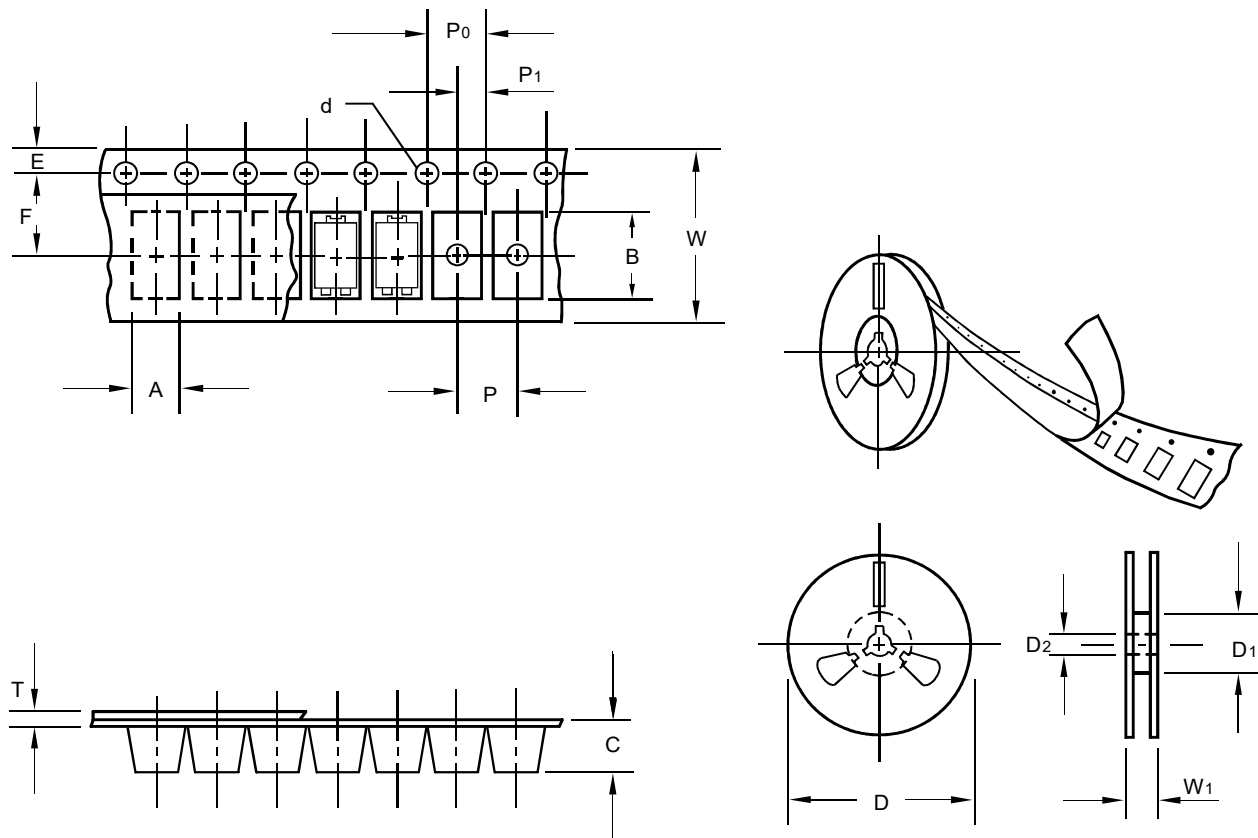
Type Number	Marking Code
FM820-T7B-Q1	SS82V
FM840-T7B-Q1	SS84V
FM860-T7B-Q1	SS86V
FM880-T7B-Q1	SS88V
FM8100-T7B-Q1	SS810V
FM8150-T7B-Q1	SS815V
FM8200-T7B-Q1	SS820V

Suggested solder pad layout**TO-277B**

Dimensions in inches and (millimeters)

FM820-T7B-Q1 Thru FM8200-T7B-Q1

Packing information



unit:mm

Item	Symbol	Tolerance	TO-277B
Carrier width	A	0.1	4.40
Carrier length	B	0.1	6.90
Carrier depth	C	0.1	1.30
Sprocket hole	d	0.1	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	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	7.50
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	0.25
Tape width	W	0.3	12.00
Reel width	W ₁	1.0	14.00

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

Formosa MS

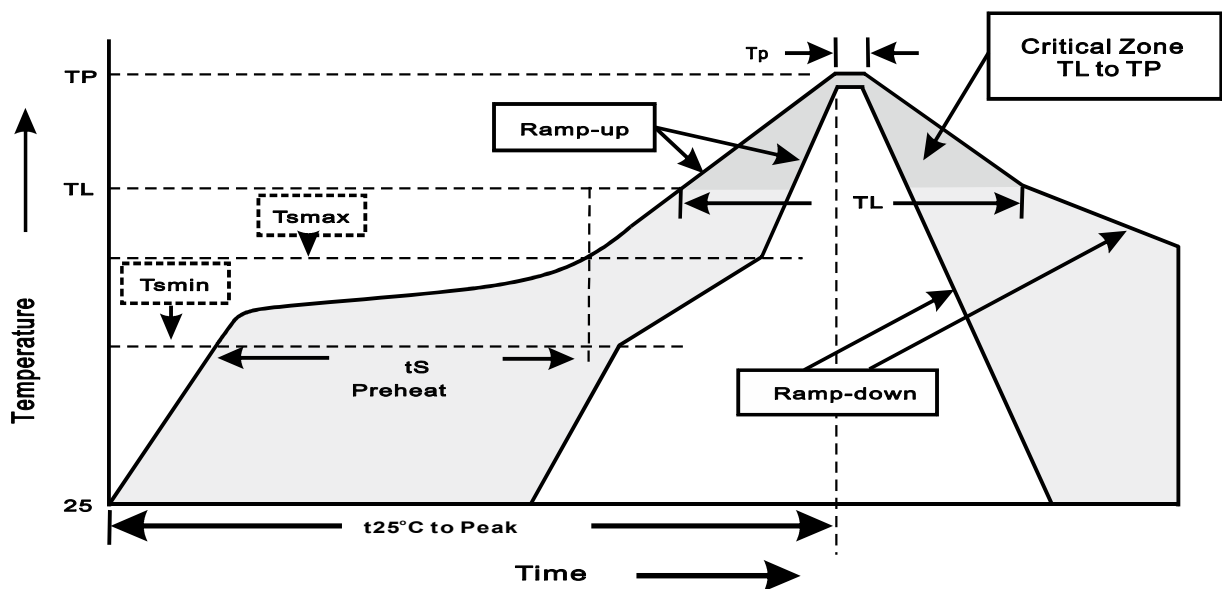
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Reel packing

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)
TO-277B	13"	5,000	8.0	10,000	335*335*38	330	350*330*360	80,000

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	<3°C/sec
Time 25°C to Peak Temperature	<6minutes

Formosa MS

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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 H2O rinse	JESD22-A113
2. Operation Life	Ta=25°C, Rated Current (Io=Io max.) Test Duration:1000hrs	MIL-STD-750E METHOD 1027.3
3. High Temperature Reverse Bias	80% Rated VR (TJ=TJ max.) Test Duration:1000hrs	JESD22-A108
4. High Temperature Storage Life	Ta=150°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=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