

FM8V100-T7B-Q1

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings and electrical characteristics.....	2
Electrical characteristics.....	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Suggested solder pad layout.....	4
Packing information.....	5
Reel packing.....	6
Suggested thermal profiles for soldering processes.....	6
High reliability test capabilities.....	7

FM8V100-T7B-Q1

8.0A 100V Surface Mount Low VF Trench Schottky Barrier Rectifiers

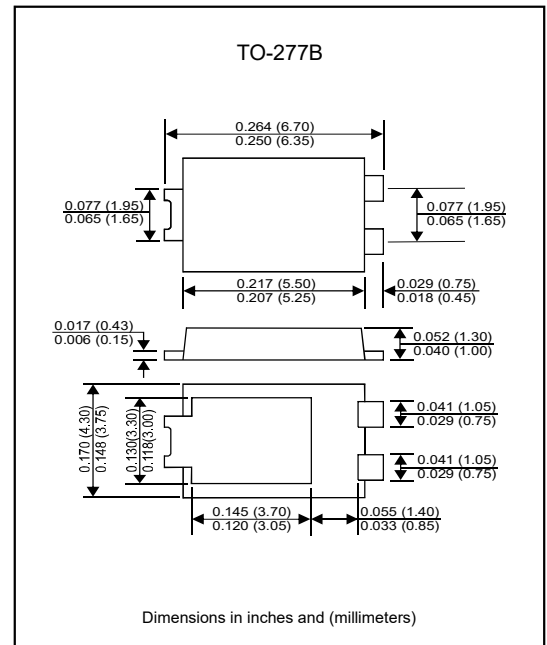
Features

- Built-in strain relief, ideal for automated placement.
- Low forward voltage drop.
- 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.FM8V100-T7B-Q1-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, TO-277B.
- Terminals: Plated terminals, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



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

Parameter	Symbol	Rating	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum RMS voltage	V_{RMS}	70	V
Maximum DC blocking voltage	V_{DC}	100	V
Maximum average forward rectified current at $T_L=100^\circ\text{C}$	$I_{(AV)}$	8	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	150	A
Typical thermal resistance	$R_{\theta JC}$	8	$^\circ\text{C/W}$
Operating junction temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

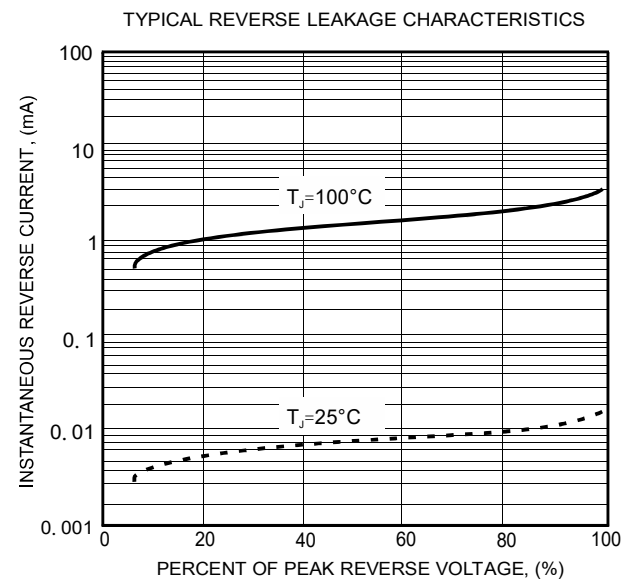
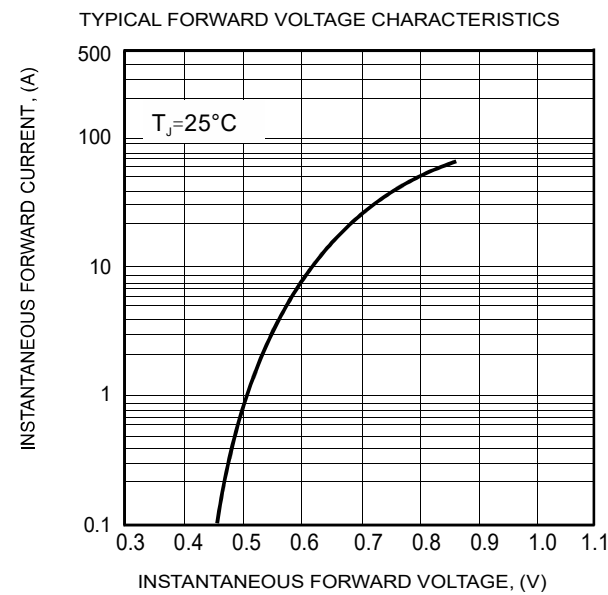
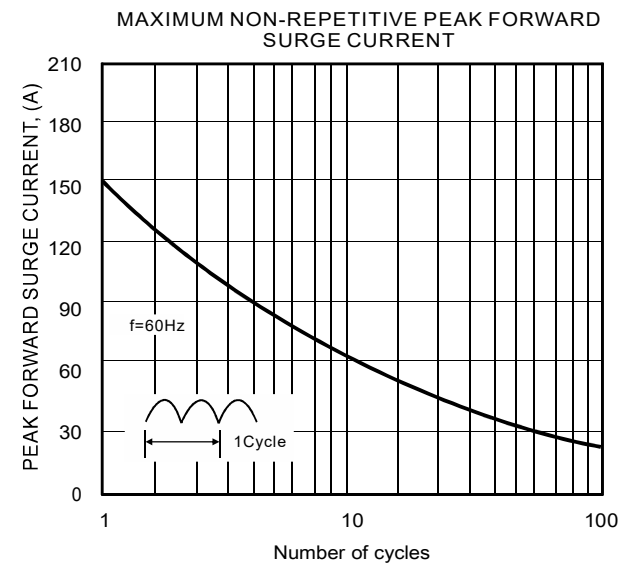
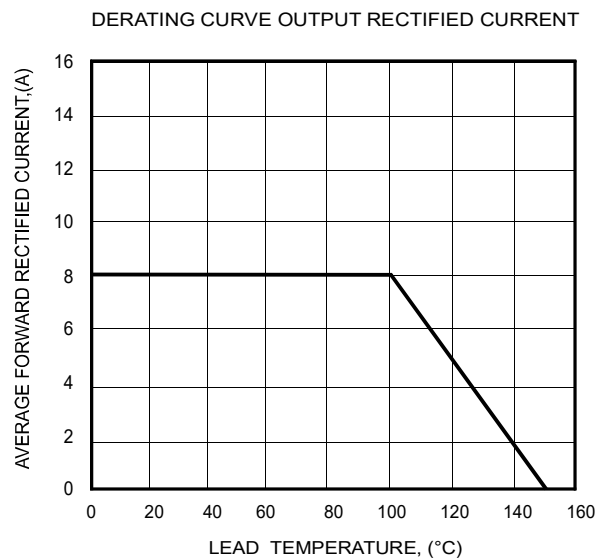
Electrical characteristics (At TA=25°C, unless otherwise noted.)

Parameter	Symbol	Min	Typ	Max	Unit
Maximum instantaneous forward voltage at 8.0A	V_F		0.60	0.65	V
Maximum DC reverse current ($T_A=25^\circ\text{C}$)	I_R		20	100	μA
at rated DC blocking voltage ($T_A=100^\circ\text{C}$)			5	50	mA

Note 1: Thermal resistance from junction to case lead mounted on P.C.B. with 10.0 mm x 10.0 mm) copper pad areas.

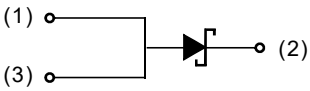
FM8V100-T7B-Q1

Rating and characteristic curves



FM8V100-T7B-Q1

Pinning information

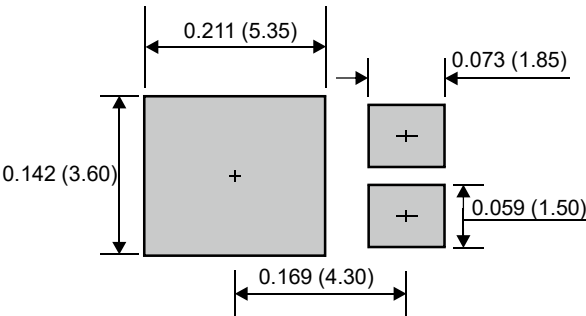
Pin	Simplified outline	Symbol
PIN 1 Anode PIN 2 Cathode PIN 3 Anode		

Marking

Type number	Marking code
FM8V100-T7B-Q1	SL8100V

Suggested solder pad layout

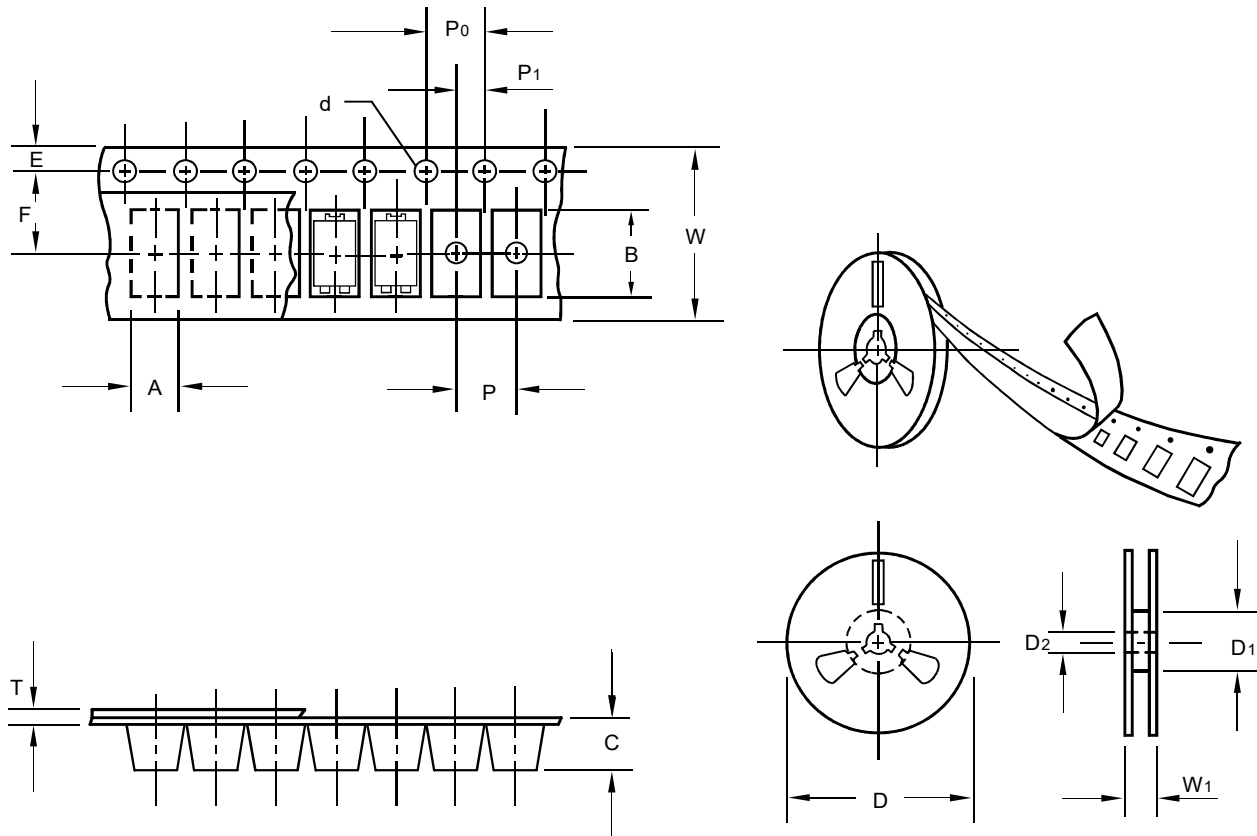
TO-277B



Dimensions in inches and (millimeters)

FM8V100-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.

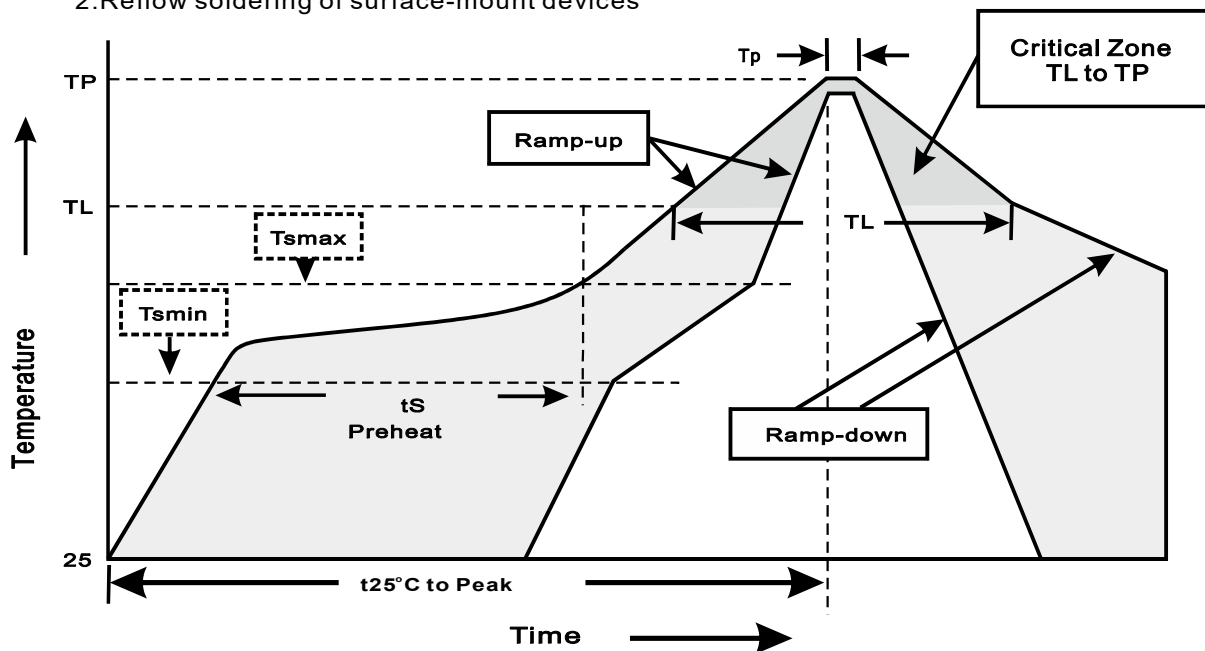
FM8V100-T7B-Q1

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

FM8V100-T7B-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 H2O rinse	JESD22-A113
2. High Temperature Reverse Bias	$V_{BR}=V_{BR\ Nom}*80\%$ ($T_j=150^\circ\text{C}$) Test Duration:1000hrs	JESD22-A108
3. High Temperature Storage Life	$T_a=125^\circ\text{C}$ Test Duration: 1000hrs	JESD22 A-103
4. Temperature Cycle	-55°C (15min) to 150°C (15min) Test Cycles: 1000cycles	JESD22 A-104
5. Autoclave	$P=2\text{atm}$ $T_a=121^\circ\text{C}$ RH=100% Test Duration:96hrs	JESD22 A-102
6. Solderability	$245\pm5^\circ\text{C}$ for 5sec	J-STD-002
7. Moisture Resistance	$T_a=85^\circ\text{C}$ / 85% Relative humidity Test Duration:1000hrs	MIL-STD-750E METHOD 1021.2
8. Resistance To Solder Heat	$260\pm5^\circ\text{C}$ for 10sec	JESD22 B-106
9. High Temperature High Humidity Reverse Bias	$T_a=85^\circ\text{C}$, 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