



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

STPS40L15CW/CT

LOW DROP OR-ing POWER SCHOTTKY DIODE

MAJOR PRODUCT CHARACTERISTICS

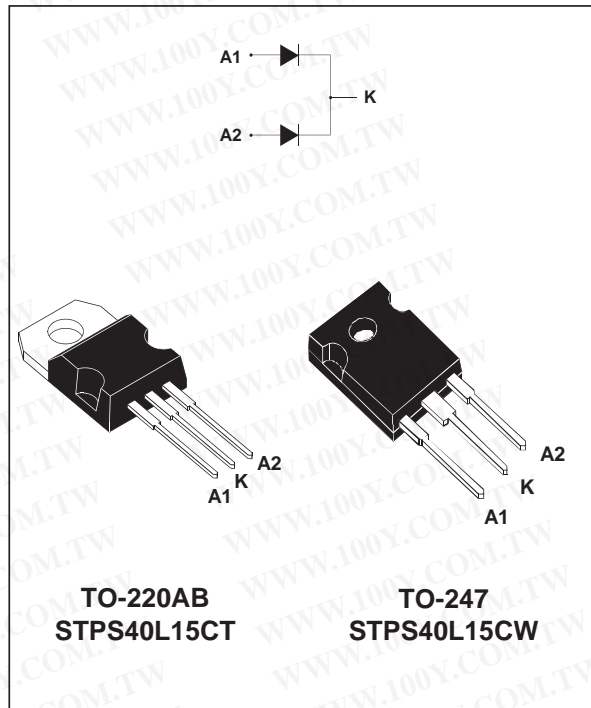
| | |
|-------------------|----------|
| $I_{F(AV)}$ | 2 x 20 A |
| V_{RRM} | 15 V |
| $T_j(\text{max})$ | 125°C |
| $V_F(\text{max})$ | 0.33 V |

FEATURES AND BENEFITS

- VERY LOW FORWARD VOLTAGE DROP FOR LESS POWER DISSIPATION AND REDUCED HEATSINK SIZE
- REVERSE VOLTAGE SUITED TO OR-ing OF 3V, 5V and 12V RAILS
- AVALANCHE CAPABILITY SPECIFIED

DESCRIPTION

Dual center tap schottky rectifier packaged in TO-220AB and TO-247, this device is especially intended for use as OR-ing diode in fault tolerant power supply equipments.



ABSOLUTE RATINGS (limiting values, per diode)

| Symbol | Parameter | Value | Unit |
|--------------|--|--|------------------|
| V_{RRM} | Repetitive peak reverse voltage | 15 | V |
| $I_{F(RMS)}$ | RMS forward current | 30 | A |
| $I_{F(AV)}$ | Average forward current | $T_{case} = 140^\circ\text{C}$ $\delta = 1$ Total | 40 |
| | | Per diode | 20 |
| I_{FSM} | Surge non repetitive forward current | $t_p = 10 \text{ ms}$ Sinusoidal | 310 |
| I_{RRM} | Peak repetitive reverse current | $t_p = 2 \mu\text{s}$ $F = 1\text{kHz}$ | 2 |
| I_{RSM} | Non repetitive peak reverse current | $t_p = 100 \mu\text{s}$ | 3 |
| P_{ARM} | Repetitive peak avalanche power | $t_p = 1 \mu\text{s}$ $T_j = 25^\circ\text{C}$ | 13140 |
| T_{stg} | Storage temperature range | - 65 to + 150 | °C |
| T_j | Maximum operating junction temperature * | 125 | °C |
| dV/dt | Critical rate of rise of reverse voltage | 10000 | V/ μs |

* : $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$ thermal runaway condition for a diode on its own heatsink

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THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|----------------------|------------------|-----------|------|
| R _{th(j-c)} | Junction to case | Per diode | 1.6 |
| | | Total | 0.85 |
| R _{th(c)} | Coupling | 0.1 | °C/W |

STATIC ELECTRICAL CHARACTERISTICS (Per diode)

| Symbol | Parameter | Tests Conditions | Min. | Typ. | Max. | Unit |
|------------------|-------------------------|------------------------|-----------------------------------|------|------|------|
| I _R * | Reverse leakage current | T _j = 25°C | V _R = V _{RRM} | | 6 | mA |
| | | T _j = 100°C | | 200 | 500 | |
| V _F * | Forward voltage drop | T _j = 25°C | I _F = 19 A | | 0.41 | V |
| | | T _j = 25°C | I _F = 40 A | | 0.52 | |
| | | T _j = 125°C | I _F = 19 A | 0.28 | 0.33 | |
| | | T _j = 125°C | I _F = 40 A | 0.42 | 0.50 | |

Pulse test : * tp = 380 μs, δ < 2%

To evaluate the conduction losses use the following equation :

$$P = 0.18 \times I_{F(AV)} + 0.008 I_{F(RMS)}^2$$

Fig. 1: Average forward power dissipation versus average forward current (per diode).

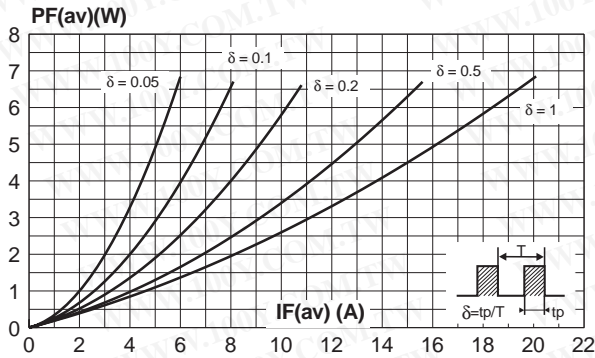


Fig. 3: Normalized avalanche power derating versus pulse duration.

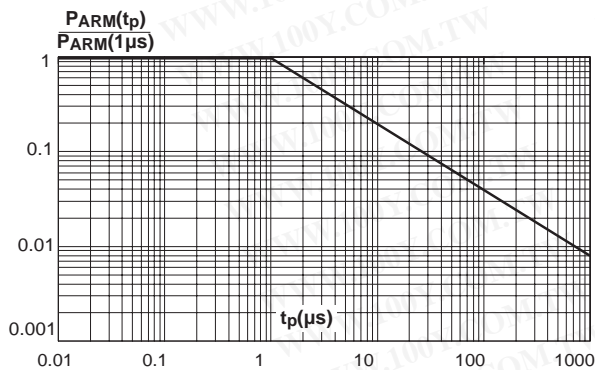


Fig. 2: Average forward current versus ambient temperature (δ=1, per diode).

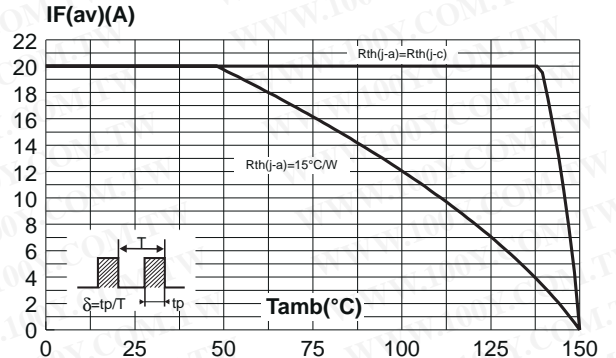


Fig. 4: Normalized avalanche power derating versus junction temperature.

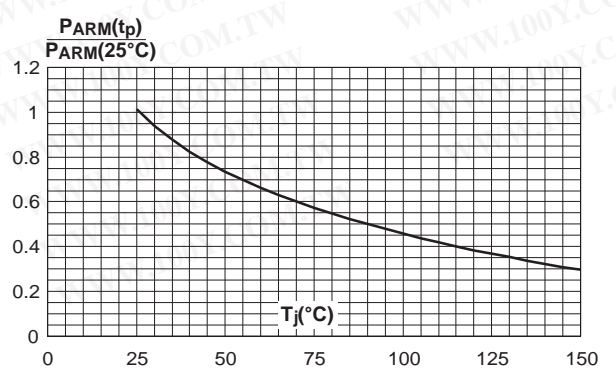


Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values per diode).

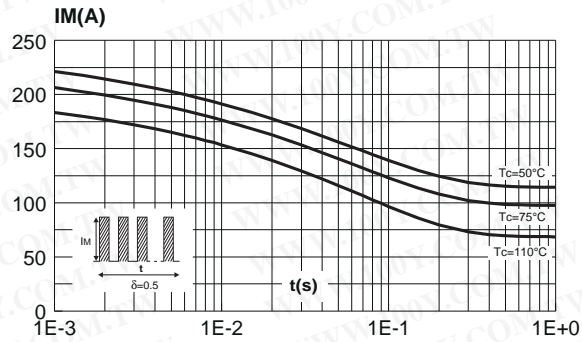


Fig. 6: Relative variation of thermal impedance junction to case versus pulse duration (per diode).

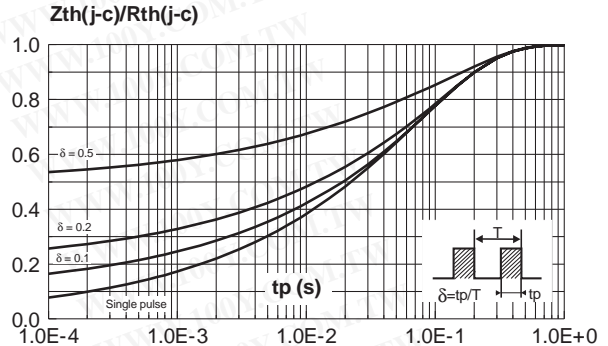


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values per diode).

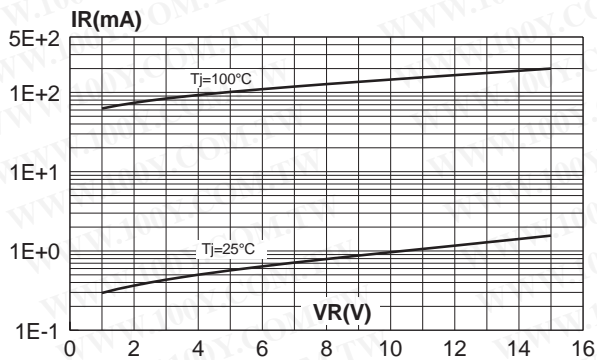


Fig. 8: Junction capacitance versus reverse voltage applied (typical values per diode).

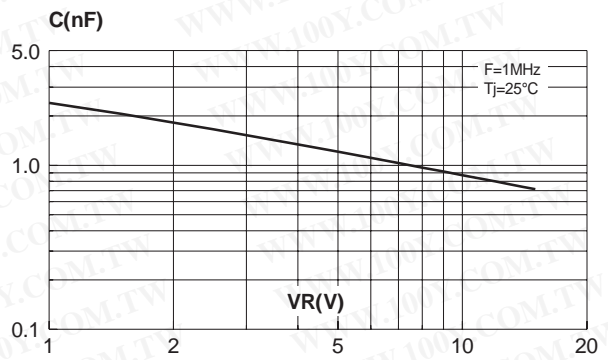


Fig. 9: Forward voltage drop versus forward current (typical values per diode).

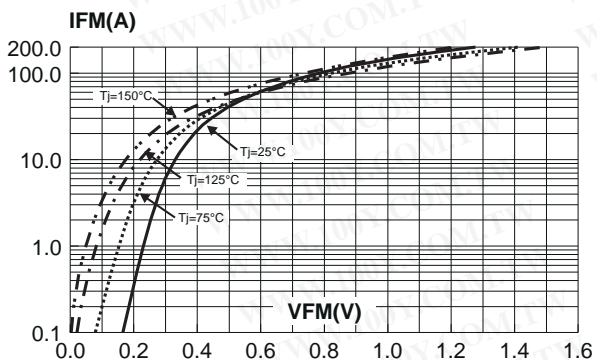
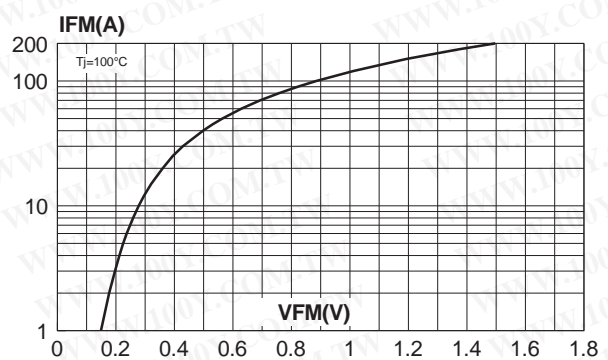


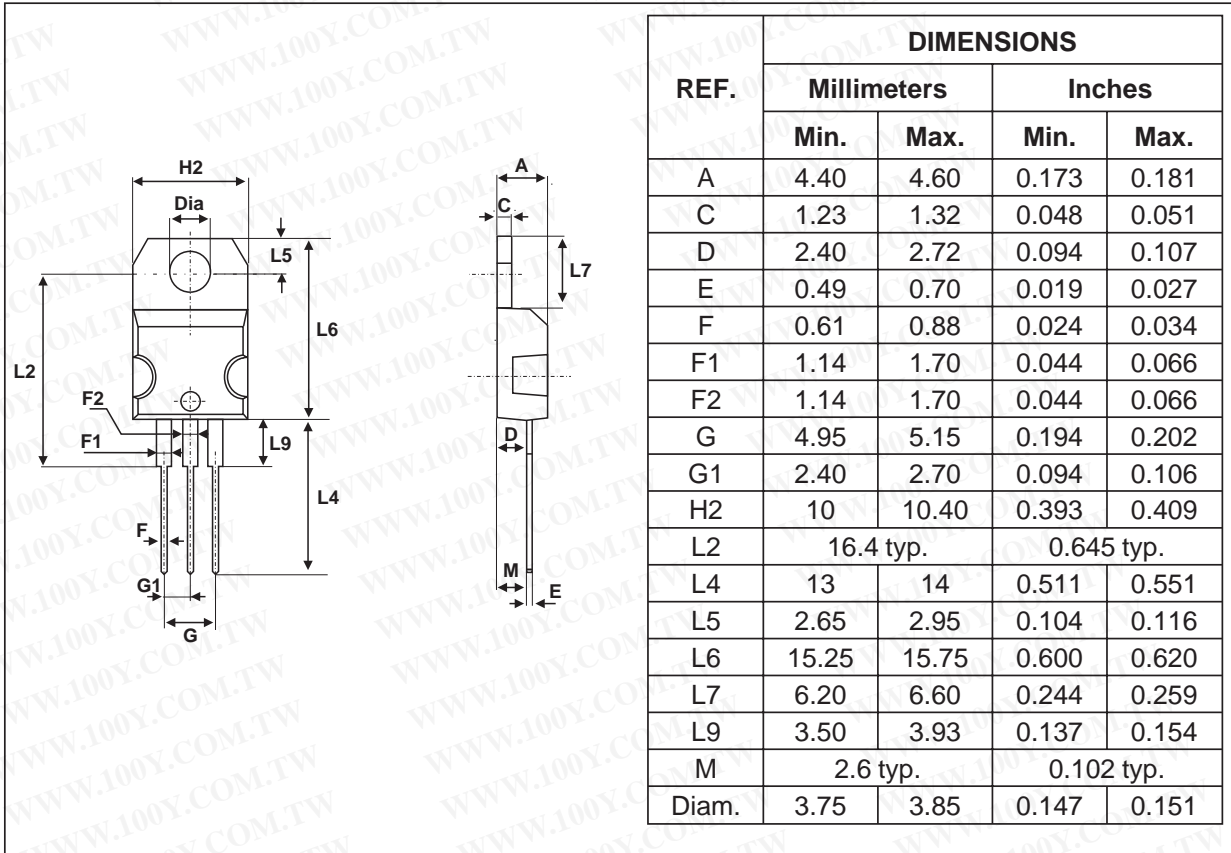
Fig. 10: Forward voltage drop versus forward current (typical maximum per diode).



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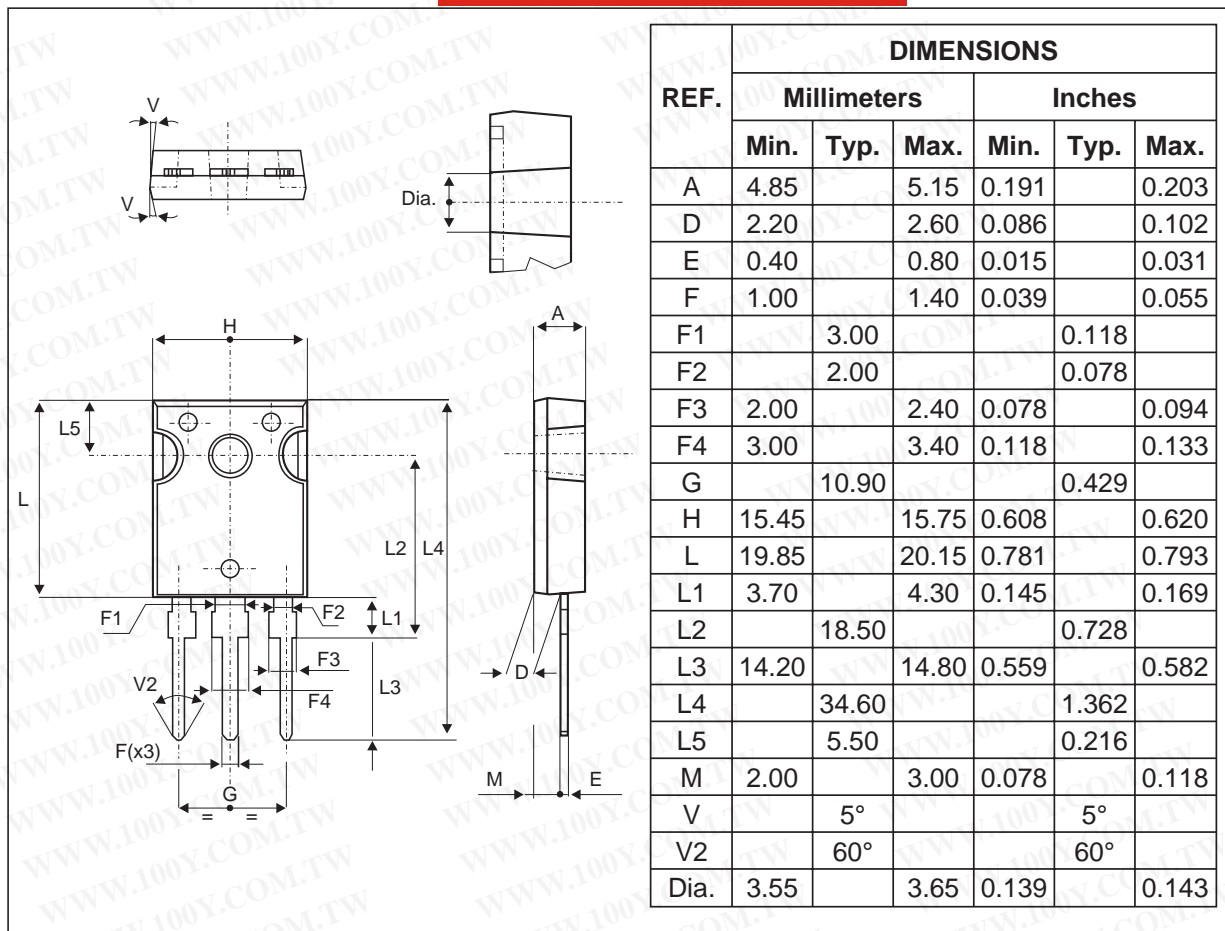
PACKAGE MECHANICAL DATA
 TO-220AB



- Cooling method: C
- Recommended torque value: 0.55 m.N
- Maximum torque value: 0.70 m.N



PACKAGE MECHANICAL DATA
 TO-247



- Cooling method: C
- Recommended torque value: 0.8 m.N
- Maximum torque value: 1.0 m.N

| Ordering type | Marking | Package | Weight | Base qty | Delivery mode |
|---------------|-------------|----------|--------|----------|---------------|
| STPS40L15CW | STPS40L15CW | TO-247 | 4.4 g. | 30 | Tube |
| STPS40L15CT | STPS40L15CT | TO-220AB | 2g | 50 | Tube |

- Epoxy meets UL94,V0

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