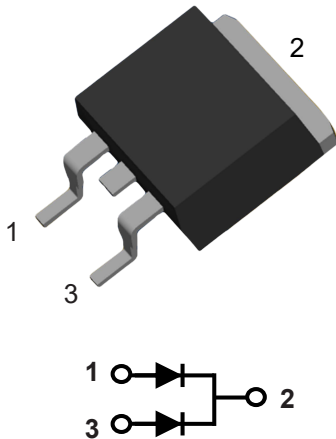


## Trench MOS Barrier Schottky Rectifier

**TSR20L300CTB  
TO-263**



### Features

- Advanced trench technology
- Low forward voltage drop
- Low power losses
- High efficiency operation
- Lead Free Finish, RoHS Compliant

### Applications

- DC/DC Converters
- AC/DC Adaptors
- Switching Power Supplies
- Freewheeling Diodes

### Maximum ratings and electrical characteristics (T<sub>J</sub> = 25°C unless otherwise noted)

| Parameter                                                                                     |           |          | Symbol                            | Limit       |      | Unit |
|-----------------------------------------------------------------------------------------------|-----------|----------|-----------------------------------|-------------|------|------|
| Maximum repetitive peak reverse voltage                                                       |           |          | VRRM                              | 300         |      | V    |
| Maximum average forward rectified current                                                     | total     | IF(AV)   | 20                                |             | A    |      |
|                                                                                               | per diode |          | 10                                |             |      |      |
| Peak forward surge current 8.3 ms single half sine- wave superimposed on rated load per diode |           |          | IFSM                              | 280         |      | A    |
| Operating junction and storage temperature range                                              |           |          | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      | °C   |
| Typical thermal resistance per leg                                                            |           |          | R <sub>ΘJC</sub>                  | 2           |      | °C/W |
| Instantaneous forward voltage per diode                                                       |           |          | VF(1)                             | TYP.        | MAX. | V    |
|                                                                                               | IF=3A     | TJ=25°C  |                                   | 0.72        | 0.78 |      |
|                                                                                               | IF=3A     | TJ=125°C |                                   | 0.66        | -    |      |
|                                                                                               | IF=10A    | TJ=25°C  |                                   | 0.82        | 0.86 |      |
|                                                                                               | IF=10A    | TJ=125°C |                                   | 0.75        | -    |      |
| Instantaneous reverse current per diode at rated reverse voltage                              |           | TJ=25°C  | IR(2)                             | 1           | 50   | uA   |
|                                                                                               |           | TJ=125°C |                                   | 1           | -    | mA   |

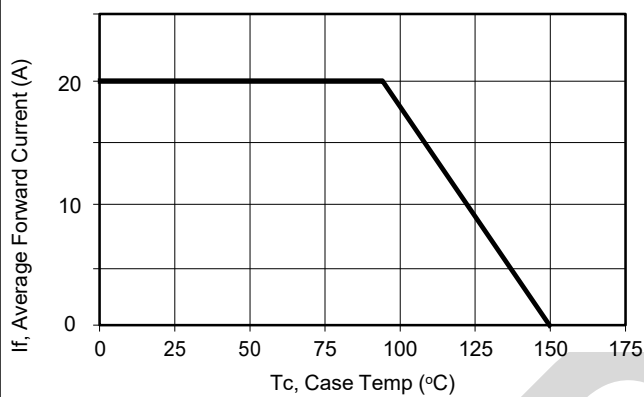
Notes:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

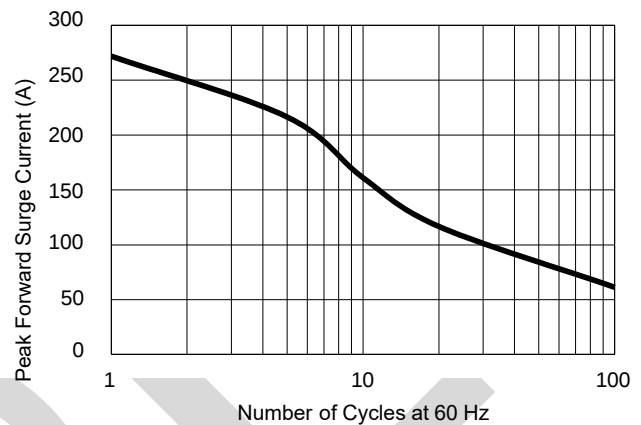
(2) Pulse test: Pulse width ≤ 40 ms

## RATINGS AND CHARACTERISTICS CURVES (TA = 25 °C unless otherwise noted)

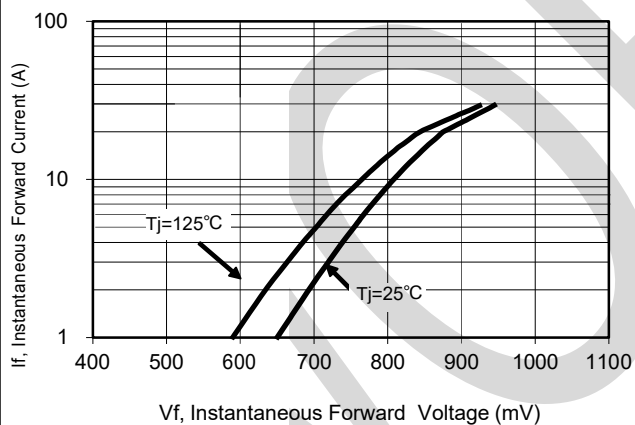
**Fig. 1 Current Derating, Case**



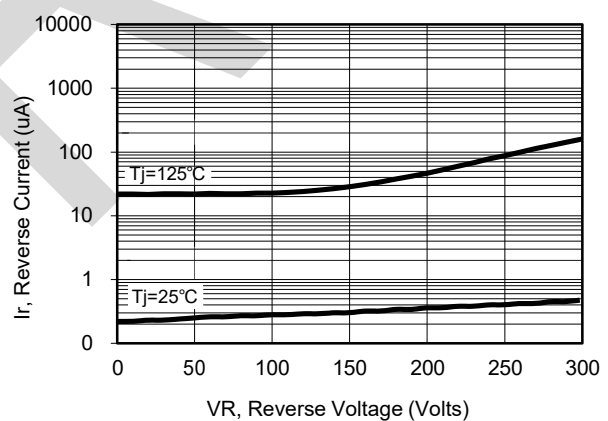
**Fig. 2 Maximum Repetitive Surge Current**



**Fig. 3 Typical Forward Voltage**



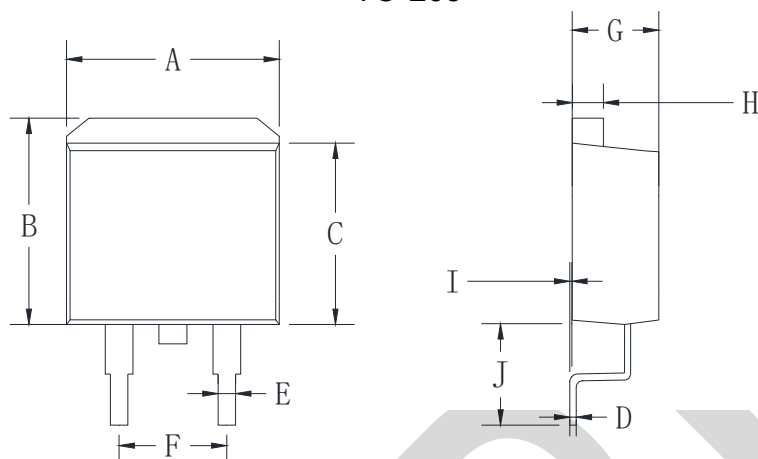
**Fig. 4 Typical Reverse Current**



## PACKAGE OUTLINE DIMENSIONS

Note: unit In(mm)

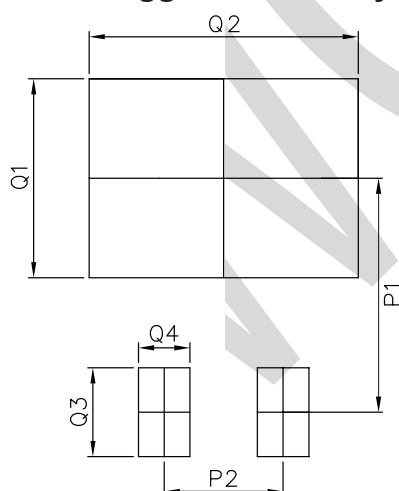
### TO-263



### TO-263 mechanical data

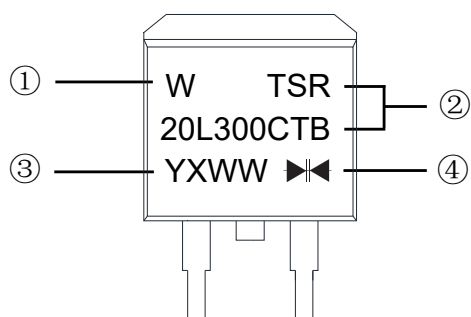
| UNIT |     | A     | B     | C     | D    | E    | F     | G     | H    | I    | J     |
|------|-----|-------|-------|-------|------|------|-------|-------|------|------|-------|
| mm   | max | 11.5  | 10.5  | 9.0   | 0.64 | 0.94 | 5.6   | 5.1   | 1.4  | 0.6  | 6.1   |
|      | min | 9.5   | 9.7   | 8.4   | 0.28 | 0.68 | 4.5   | 4.0   | 1.1  | 0.02 | 4.9   |
| mil  | max | 452.7 | 413.3 | 354.3 | 25.2 | 37.0 | 220.5 | 200.8 | 55.1 | 23.6 | 240.1 |
|      | min | 374.0 | 381.8 | 330.7 | 11.0 | 26.7 | 177.2 | 157.5 | 43.3 | 0.78 | 192.9 |

### TO-263 Suggested Pad Layout



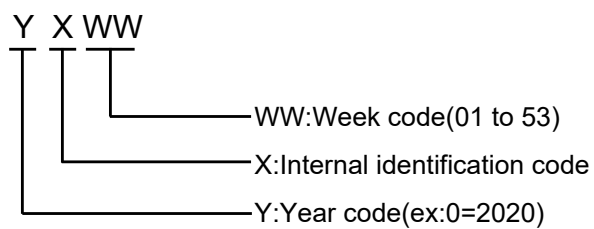
| UNIT |     | P1    | P2    | Q1    | Q2    | Q3    | Q4   |
|------|-----|-------|-------|-------|-------|-------|------|
| mm   | min | 10.0  | 4.00  | 8.5   | 11.5  | 3.8   | 2.1  |
| mil  | min | 393.3 | 157.5 | 39.37 | 334.6 | 149.6 | 82.7 |

## Marking Information



- ① W : Company's trademark
- ② Product model : TSR20L300CTB

### ③ PDC information:



- ④ Double wafer