

# 5DL41

## SWITCHING MODE POWER SUPPLY APPLICATION CONVERTER & CHOPPER APPLICATION

Toshiba high speed and high efficiency rectifiers, 5DL41, are specially designed for switching power supplies. These rectifiers are suitable for 9 to 24V power supplies to obtain high frequency and high efficiency.

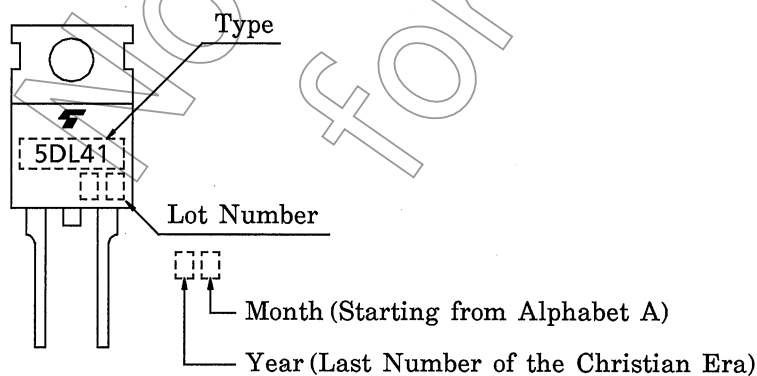
- Repetitive Peak Reverse Voltage :  $V_{RRM} = 200V$
- Average Forward Current :  $I_F (AV) = 5A$
- Ultra Fast Reverse-Recovery Time : 45ns (Max)
- Low Switching Losses and Output Noise
- Low Forward Voltage :  $V_{FM} = 0.98V$

### ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

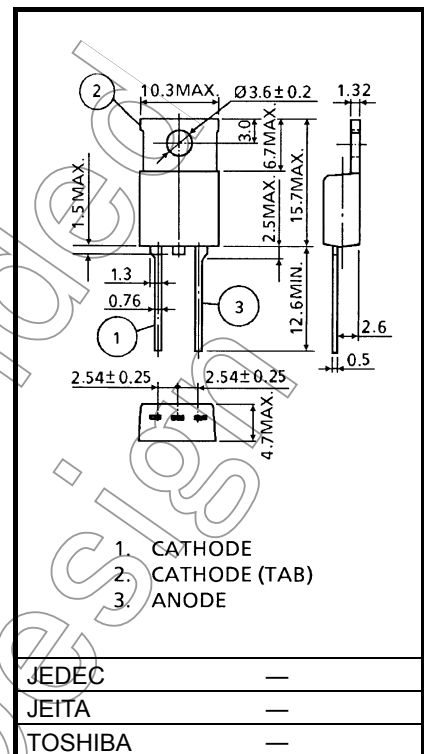
| CHARACTERISTIC                       | SYMBOL     | RATING    | UNIT |
|--------------------------------------|------------|-----------|------|
| Repetitive Peak Reverse Voltage      | $V_{RRM}$  | 200       | V    |
| Average Forward Current              | $I_F (AV)$ | 5         | A    |
| Peak One Cycle Surge Forward Current | $I_{FSM}$  | 50 (50Hz) | A    |
| Junction Temperature                 | $T_j$      | -40~150   | °C   |
| Storage Temperature Range            | $T_{stg}$  | -40~150   | °C   |
| Screw Torque                         | —          | 0.6       | N·m  |

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.  
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

### MARKING



Unit: mm

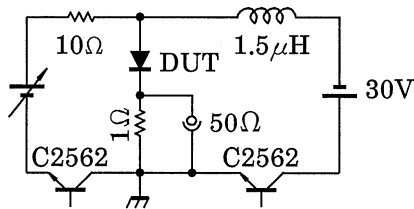


Weight: 2.0 g

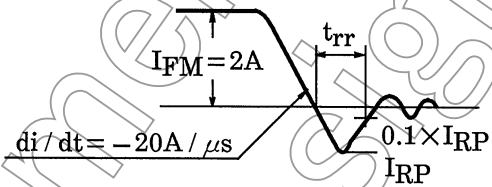
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC                    | SYMBOL        | TEST CONDITION                      | MIN | TYP. | MAX  | UNIT         |
|-----------------------------------|---------------|-------------------------------------|-----|------|------|--------------|
| Peak Forward Voltage              | $V_{FM}$      | $I_{FM} = 5A$                       | —   | —    | 0.98 | V            |
| Repetitive Peak Reverse Current   | $I_{RRM}$     | $V_{RRM} = 200V, T_j = 150^\circ C$ | —   | —    | 2.0  | mA           |
| Reverse Recovery Time<br>(Note 1) | $t_{rr}$      | $I_F = 2A, di/dt = -20A/\mu s$      | —   | —    | 45   | ns           |
| Forward Recovery Time<br>(Note 2) | $t_{fr}$      | $I_F = 1.0A$                        | —   | —    | 100  | ns           |
| Thermal Resistance                | $R_{th(j-c)}$ | DC                                  | —   | —    | 6.0  | $^\circ C/W$ |

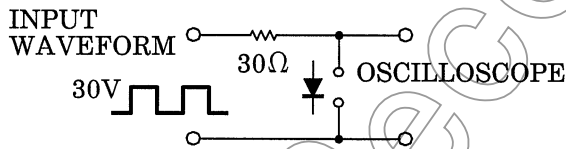
Note 1:  $t_{rr}$  TEST CIRCUIT



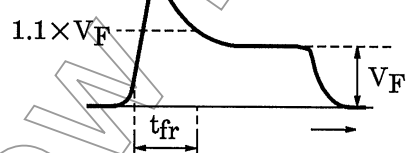
WAVEFORM



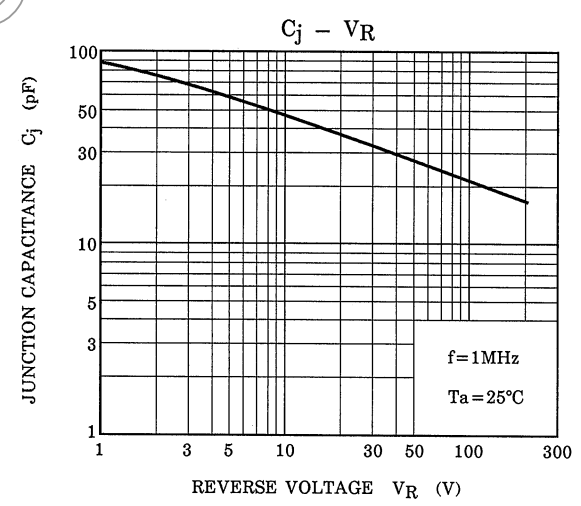
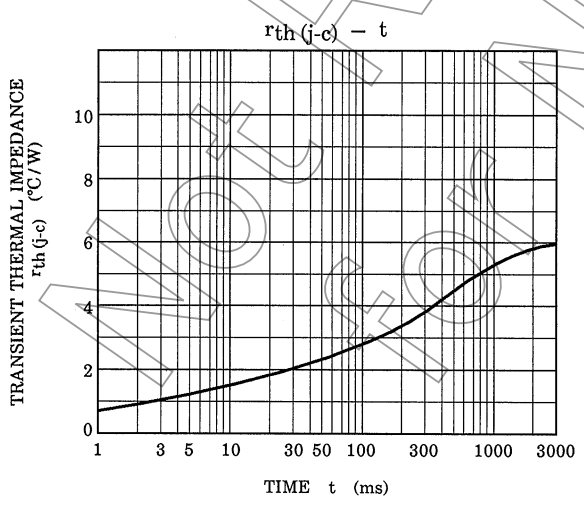
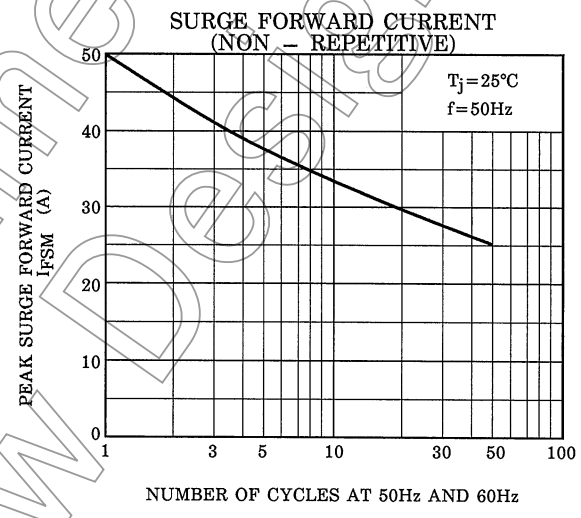
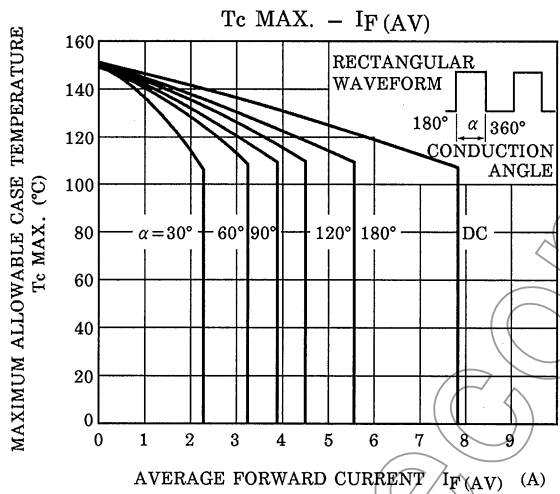
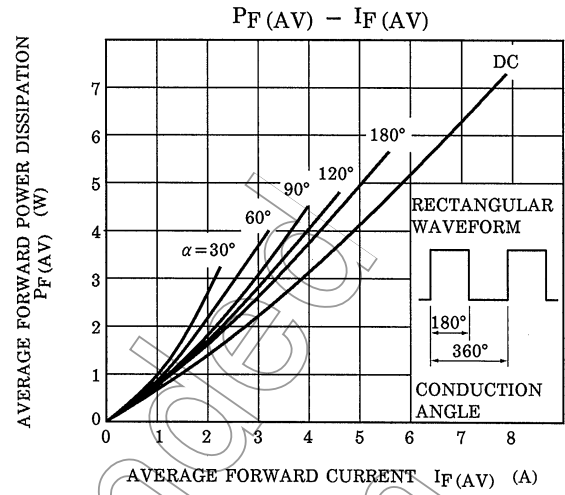
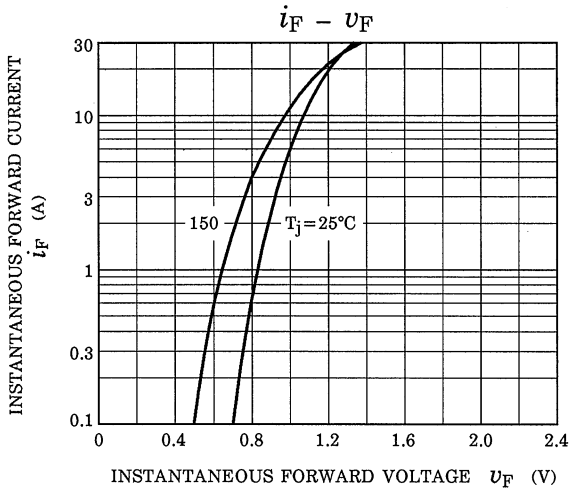
Note 2:  $t_{fr}$  TEST CIRCUIT



WAVEFORM



Not Recommended for New Design



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