

# TIP41

Rev. G Nov.-2017

## / Descriptions

WR0553      QSQ      Silicon NPN transistor in a TO-220 Plastic Package.

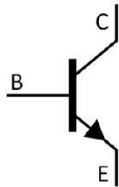
## / Features

WLS75  
Complement to TIP42.

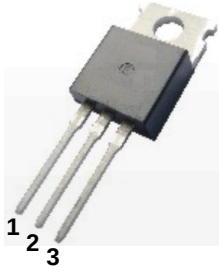
## / Applications

Medium power linear switching applications.

## / Equivalent Circuit



## / Pinning



PIN1   Base      PIN 2   Collector      PIN 3   Emitter

## / $h_{FE}$ Classifications & Marking

See Marking Instructions.

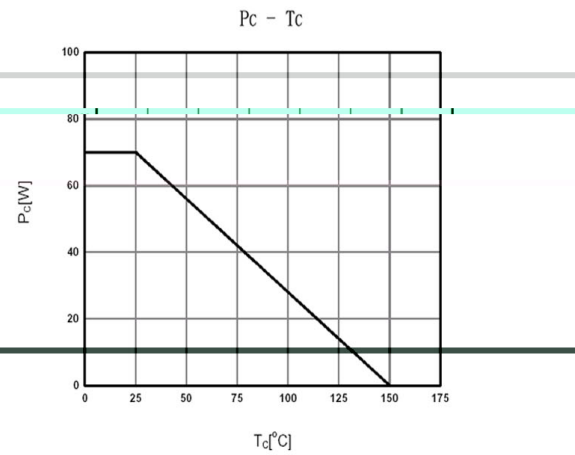
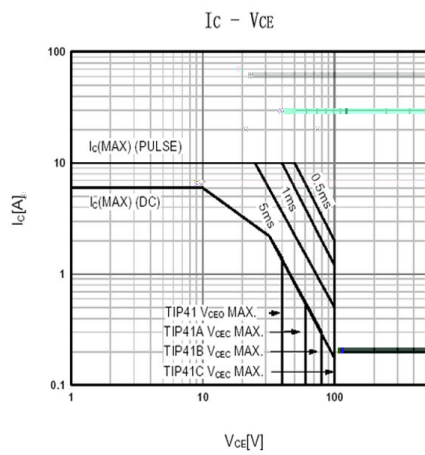
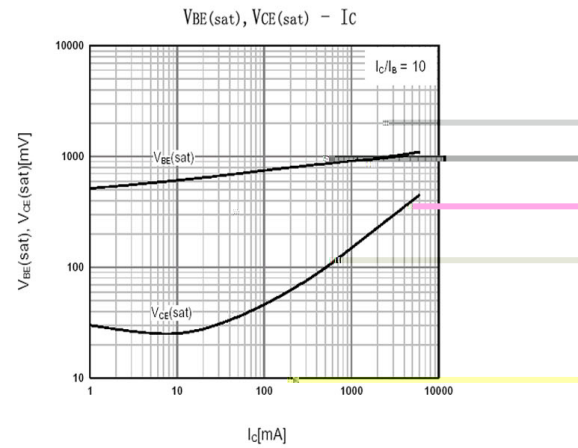
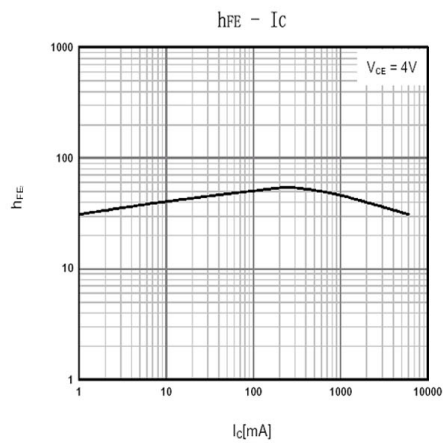
## / Absolute Maximum Ratings(Ta=25 )

| Parameter                      | Symbol                | Rating  |        |        |        | Unit |
|--------------------------------|-----------------------|---------|--------|--------|--------|------|
|                                |                       | TIP41   | TIP41A | TIP41B | TIP41C |      |
| Collector to Base Voltage      | $V_{CBO}$             | 40      | 60     | 80     | 100    | V    |
| Collector to Emitter Voltage   | $V_{CEO}$             | 40      | 60     | 80     | 100    | V    |
| Emitter to Base Voltage        | $V_{EBO}$             | 5       |        |        |        | V    |
| Collector Current - Continuous | $I_C$                 | 6       |        |        |        | A    |
| Peak Collector Current         | $I_{CP}$              | 10      |        |        |        | A    |
| Base Current - Continuous      | $I_B$                 | 2       |        |        |        | A    |
| Collector Power Dissipation    | $P_C$                 | 2       |        |        |        | W    |
| Collector Power Dissipation    | $P_C$<br>( $T_c=25$ ) | 65      |        |        |        | W    |
| Junction Temperature           | $T_j$                 | 150     |        |        |        |      |
| Storage Temperature Range      | $T_{sag}$             | -55 150 |        |        |        |      |

## / Electrical Characteristics(Ta=25 )

| Parameter                               | Symbol        |                  | Test Conditions          | Min | Typ | Max | Unit |
|-----------------------------------------|---------------|------------------|--------------------------|-----|-----|-----|------|
| Collector to Emitter Breakdown Voltage  | $V_{CEO}$     | TIP41            | $I_C=30mA$ $I_B=0$       | 40  |     |     | V    |
|                                         |               | TIP41A           |                          | 60  |     |     |      |
|                                         |               | TIP41B           |                          | 80  |     |     |      |
|                                         |               | TIP41C           |                          | 100 |     |     |      |
| Collector Cut-Off Current               | $I_{CEO}$     | TIP41<br>TIP41A  | $V_{CE}=30V$ $I_B=0$     |     |     | 0.7 | mA   |
|                                         |               | TIP41B<br>TIP41C | $V_{CE}=60V$ $I_B=0$     |     |     |     |      |
| Collector Cut-Off Current               | $I_{CES}$     | TIP41            | $V_{CE}=40V$ $V_{EB}=0$  |     |     | 400 | mA   |
|                                         |               | TIP41A           | $V_{CE}=60V$ $V_{EB}=0$  |     |     |     |      |
|                                         |               | TIP41B           | $V_{CE}=80V$ $V_{EB}=0$  |     |     |     |      |
|                                         |               | TIP41C           | $V_{CE}=100V$ $V_{EB}=0$ |     |     |     |      |
| Emitter Cut-Off Current                 | $I_{EBO}$     |                  | $V_{EB}=5V$ $I_C=0$      |     |     | 1   | mA   |
| DC Current Gain                         | $h_{FE(1)}$   |                  | $V_{CE}=4V$ $I_C=3A$     | 15  |     | 75  |      |
|                                         | $h_{FE(2)}$   |                  | $V_{CE}=4V$ $I_C=0.3A$   | 30  |     |     |      |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ |                  | $I_C=6A$ $I_B=0.6A$      |     |     | 1.5 | V    |
| Base to Emitter Voltage                 | $V_{BE}$      |                  | $I_C=6A$ $V_{CE}=4V$     |     |     | 2   | V    |
| Transition Frequency                    | $f_T$         |                  | $V_{CE}=10V$ $I_C=500mA$ | 3   |     |     | MHz  |

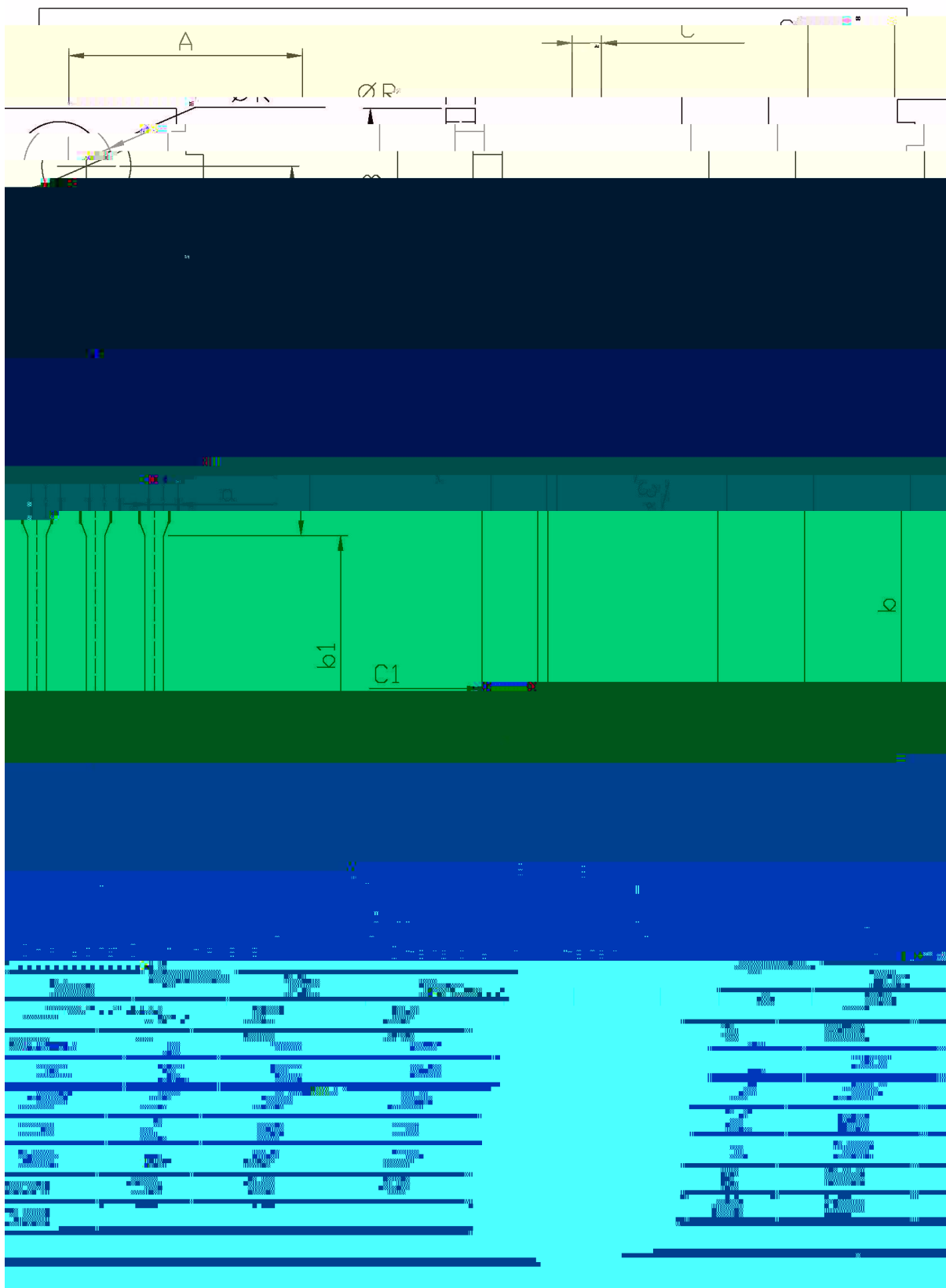
## / Electrical Characteristic Curve



/ Package Dimensions

TQ-220

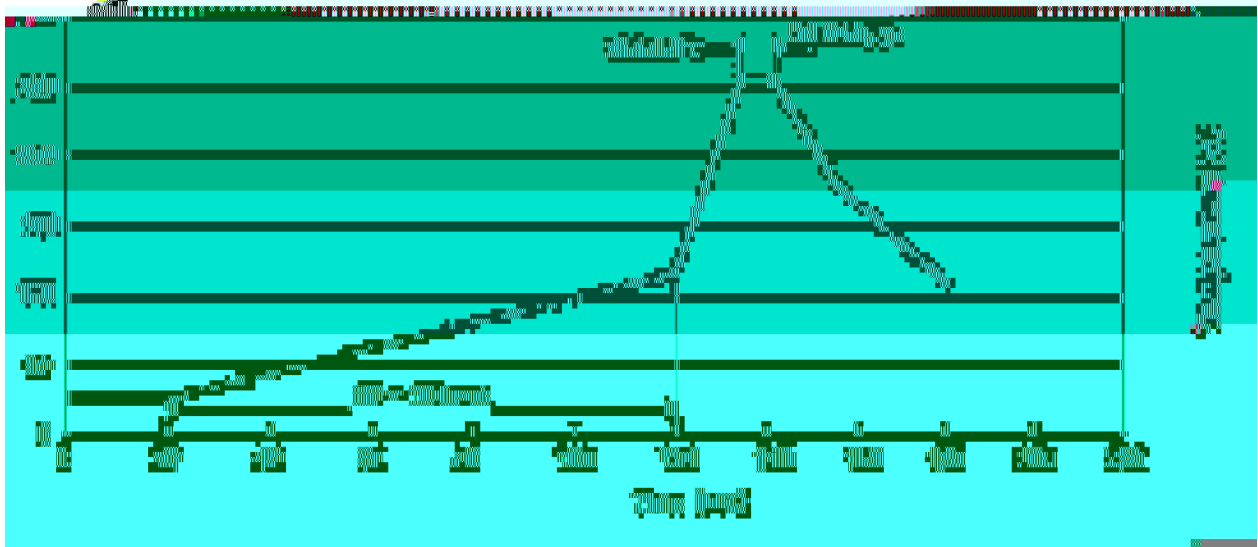
单位: mm



# **TIP41**

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## ( ) / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- |   |     |      |          |           |                                             |
|---|-----|------|----------|-----------|---------------------------------------------|
| 1 | 25  | 150% | 60       | 90sec;    | 1.Preheating:25~150%, Time:60~90sec.        |
| 2 | 255 | 2 5% | 5        | 2 0.5sec; | 2.Peak Temp.:255 2 5%, Duration:5 2 0.5sec. |
| 3 |     | 2    | 10%/sec. |           | 3. Cooling Speed: 2~10%/sec.                |

## / Resistance to Soldering Heat Test Conditions

270 2 5%      10 2 1 sec.      Temp.:270±5      Time:10±1 sec

## / Packaging SPEC.

## / BULK

| Package Type | Units          |                     |                      |                            |                      | Dimension (unit mm <sup>3</sup> ) |             |             |
|--------------|----------------|---------------------|----------------------|----------------------------|----------------------|-----------------------------------|-------------|-------------|
|              | Units/Bag<br>/ | Bags/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Bag                               | Inner Box   | Outer Box   |
| TO-220/F     | 200            | 10                  | 2,000                | 5                          | 10,000               | 135×190                           | 237×172×102 | 560×245×195 |

## / TUBE

| Package Type | Units           |                      |                      |                            |                      | Dimension (unit mm <sup>3</sup> ) |            |             |
|--------------|-----------------|----------------------|----------------------|----------------------------|----------------------|-----------------------------------|------------|-------------|
|              | Units/Tube<br>/ | Tubes/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Tube                              | Inner Box  | Outer Box   |
| TO-220/F     | 50              | 20                   | 1,000                | 5                          | 5,000                | 532×31.4×5.5                      | 555×164×50 | 575×290×180 |

## / Notices