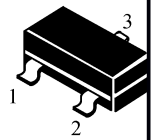




MMBTA92 MMBTA93

SOT-23

- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

**MAXIMUM RATINGS 最大額定值**

| Characteristic<br>特性參數                  | Symbol<br>符號 | MMBTA92 | MMBTA93 | Unit<br>單位 |
|---|--------------|---------|---------|------------|
| Collector-Emitter Voltage<br>集電極-射極電壓   | $V_{CEO}$    | -300    | -200    | Vdc        |
| Collector-Base Voltage<br>集電極-極電壓       | $V_{CBO}$    | -300    | -200    | Vdc        |
| Emitter-Base Voltage<br>發射極基極電壓         | $V_{EBO}$    | -6.0    | -6.0    | Vdc        |
| Collector Current-Continuous<br>集極電流-連續 | $I_c$        | -500    | -500    | mAdc       |

**THERMAL CHARACTERISTICS 熱特性**

| Characteristic<br>特性參數   | Symbol<br>符號    | Max<br>最大值  | Unit<br>單位                |
|--|-----------------|---|---------------------------|
| Total Device Dissipation 總耗散功率<br>FR-5 Board(1)<br>$T_A=25^\circ\text{C}$ 溫度為 $25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ 超過 $25^\circ\text{C}$ 遞減               | $P_D$           | 225   | mW                        |
| Total Device Dissipation 總耗散功率<br>Alumina Substrate 氧化鋁襯底,(2)<br>$T_A=25^\circ\text{C}$ 溫度為 $25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ 超過 $25^\circ\text{C}$ 遞減 | $P_D$           | 300   | mW                        |
| Thermal Resistance Junction to Ambient<br>熱阻   | $R_{\theta JA}$ | 417   | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature<br>結溫和儲存溫度  | $T_J, T_{stg}$  | $150^\circ\text{C}, -55\text{to}+150^\circ\text{C}$ |                           |

**DEVICE MARKING 打標**

MMBTA92=2T MMBTA93=2E



MMBTA92 MMBTA93

**■ELECTRICAL CHARACTERISTICS 電特性**

**(T<sub>A</sub>=25°C unless otherwise noted 如無特殊說明，溫度為 25°C)**

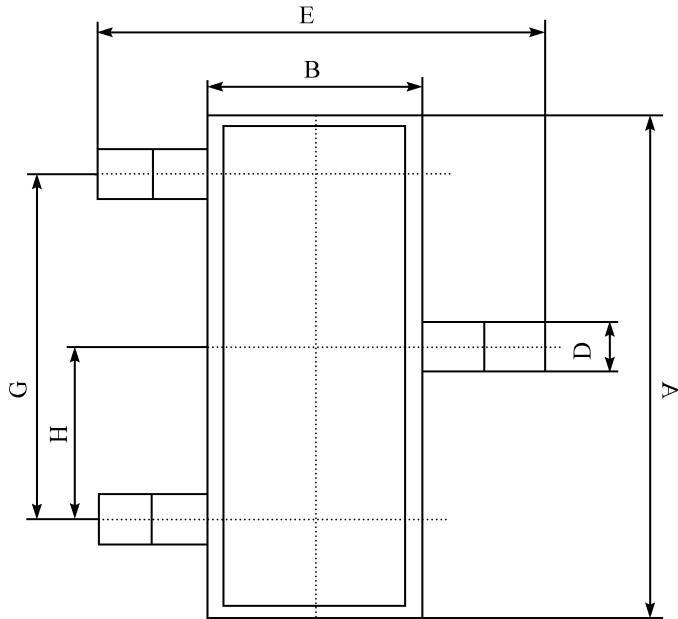
| Characteristic<br>特性參數   | Symbol<br>符號                               | Min<br>最小值   | Max<br>最大值   | Unit<br>單位       |
|--|--|--------------|--------------|------------------|
| Collector-Emitter Breakdown Voltage(3)<br>集電極-發射極擊穿電壓(I <sub>C</sub> =-1.0mA <sub>dc</sub> , I <sub>B</sub> =0)  | V <sub>(BR)CEO</sub><br>MMBTA92<br>MMBTA93 | -300<br>-200 | —<br>—       | V <sub>dc</sub>  |
| Collector-Base Breakdown Voltage<br>集電極-基極擊穿電壓(I <sub>C</sub> =-100 μA <sub>dc</sub> , I <sub>E</sub> =0)  | V <sub>(BR)CBO</sub><br>MMBTA92<br>MMBTA93 | -300<br>-200 | —<br>—       | V <sub>dc</sub>  |
| Emitter-Base Breakdown Voltage<br>發射極-基極擊穿電壓(I <sub>E</sub> =-10 μA <sub>dc</sub> , I <sub>C</sub> =0)   | V <sub>(BR)EBO</sub>                       | -5.0         | —            | V <sub>dc</sub>  |
| Emitter Cutoff Current 發射截止電流<br>(V <sub>EB</sub> =-3.0V <sub>dc</sub> , I <sub>C</sub> =0)  | I <sub>EBO</sub>                           | —            | -100         | nA <sub>dc</sub> |
| Collector Cutoff Current 集電極截止電流<br>(V <sub>CB</sub> =-200V <sub>dc</sub> , I <sub>E</sub> =0)<br>(V <sub>CB</sub> =-160V <sub>dc</sub> , I <sub>E</sub> =0) | I <sub>CBO</sub><br>MMBTA92<br>MMBTA93     | —<br>—       | -250<br>-250 | nA <sub>dc</sub> |
| DC Current Gain 直流電流增益<br>(I <sub>C</sub> =-1.0mA <sub>dc</sub> , V <sub>CE</sub> =-10.0V <sub>dc</sub> )  | H <sub>FE</sub>                            | 25           | —            | —                |
| (I <sub>C</sub> =-10mA <sub>dc</sub> , V <sub>CE</sub> =-10.0V <sub>dc</sub> )   |  | 40           | 300          |                  |
| (I <sub>C</sub> =-30mA <sub>dc</sub> , V <sub>CE</sub> =-10.0V <sub>dc</sub> )   | MMBTA92<br>MMBTA93                         | 25<br>25     | —<br>—       |                  |
| Collector-Emitter Saturation Voltage<br>集電極-發射極飽和壓降<br>(I <sub>C</sub> =-20mA <sub>dc</sub> , I <sub>B</sub> =-2.0mA <sub>dc</sub> )                         | V <sub>CE(sat)</sub><br>MMBTA92<br>MMBTA93 | —<br>—       | -0.5<br>-0.5 | V <sub>dc</sub>  |
| Base-Emitter Saturation Voltage<br>基極-發射極飽和壓降<br>(I <sub>C</sub> =-20mA <sub>dc</sub> , I <sub>B</sub> =-2.0mA <sub>dc</sub> )                               | V <sub>BE(sat)</sub>                       | —            | -0.9         | V <sub>dc</sub>  |
| Current-Gain-Bandwidth Product<br>電流增益-帶寬乘積<br>(I <sub>C</sub> =-10mA <sub>dc</sub> , V <sub>CE</sub> =-20V <sub>dc</sub> , f=100MHz)                        | f <sub>T</sub>                             | 50           | —            | MHz              |
| Collector-Base Capacitance 輸出電容<br>(V <sub>CB</sub> =-20.0V <sub>dc</sub> , I <sub>E</sub> =0, f=1.0MHz)   | C <sub>cb</sub><br>MMBTA92<br>MMBTA93      | —<br>—       | 6.0<br>8.0   | pF               |

- 1 . FR-5=1.0×0.75×0.062in.
- 2 . Alumina=0.4×0.3×0.024in.99.5%alumina.
- 3 . Pulse Width≤300us;Duty Cycle≤2.0%.

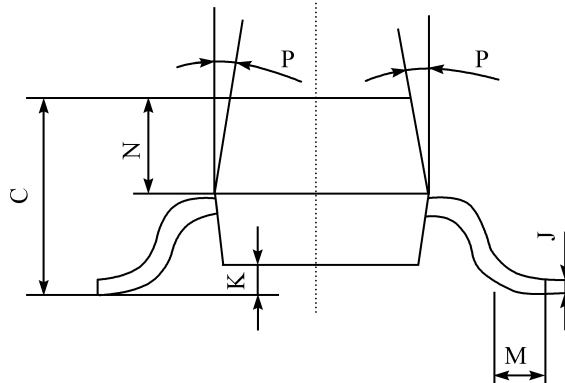


MMBTA92 MMBTA93

■ DIMENSION 外形封裝尺寸



| 序號 | 數值及公差       |
|----|-------------|
| A  | 2.90 ± 0.10 |
| B  | 1.30 ± 0.10 |
| C  | 1.00 ± 0.10 |
| D  | 0.40 ± 0.10 |
| E  | 2.40 ± 0.20 |
| G  | 1.90 ± 0.10 |
| H  | 0.95 ± 0.05 |
| J  | 0.13 ± 0.05 |
| K  | 0.00-0.10   |
| M  | ≥ 0.2       |
| N  | 0.60 ± 0.10 |
| P  | 7 ± 2°      |



This datasheet presents technical data of Tak Cheong's Silicon Rectifier Diodes. Complete specifications for the individual devices are provided in the form of datasheets. A comprehensive Selector Guide is included to simplify the task of choosing the best set of components required for a specific application. For additional information, please visit our website <http://www.takcheong.com>.

Although information in this datasheet has been carefully checked, no responsibility for the inaccuracies can be assumed by Tak Cheong. Please consult your nearest Tak Cheong's sales office for further assistance.

Tak Cheong reserves the right to make changes without further notice to any products herein to further improve reliability, function or design, cost and productivity.

**KEL** is registered trademarks of Tak Cheong Electronics (Holdings) Co., Ltd.