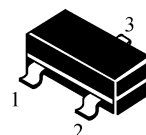




MMBTA42 MMBTA43

SOT-23

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



■ MAXIMUM RATINGS 最大額定值

Characteristic 特性參數	Symbol 符號	MMBTA42	MMBTA43	Unit 單位
Collector-Emitter Voltage 集電極-射極電壓	$V_{CEO}$	300	200	Vdc
Collector-Base Voltage 集電極-極電壓	$V_{CBO}$	300	200	Vdc
Emitter-Base Voltage 發射極基極電壓	$V_{EBO}$	6.0	6.0	Vdc
Collector Current-Continuous 集極電流-連續	$I_c$	500	500	mAdc

■ THERMAL CHARACTERISTICS 熱特性

Characteristic 特性參數	Symbol 符號	Max 最大值	Unit 單位
Total Device Dissipation 總耗散功率 Board(1) $T_A=25^{\circ}C$ 環境溫度 $25^{\circ}C$ Derate above $25^{\circ}C$ 超過 $25^{\circ}C$ 遞減	$P_D$	225 1.8	mW mW/ $^{\circ}C$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	556	$^{\circ}C/W$
Total Device Dissipation 總耗散功率 Alumina Substrate 氧化鋁襯底(2) $T_A=25^{\circ}C$ Derate above $25^{\circ}C$ 超過 $25^{\circ}C$ 遞減	$P_D$	300 2.4	mW mW/ $^{\circ}C$
Thermal Resistance Junction to Ambient 熱阻	$R_{\theta JA}$	417	$^{\circ}C/W$
Junction and Storage Temperature 結溫和儲存溫度	$T_J, T_{stg}$	150 $^{\circ}C$ , -55to+150 $^{\circ}C$	

■ DEVICE MARKING 打標

MMBTA42=1D MMBTA43=M1E

KEL MMBTA42/MMBTA43



MMBTA42 MMBTA43

**■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)**

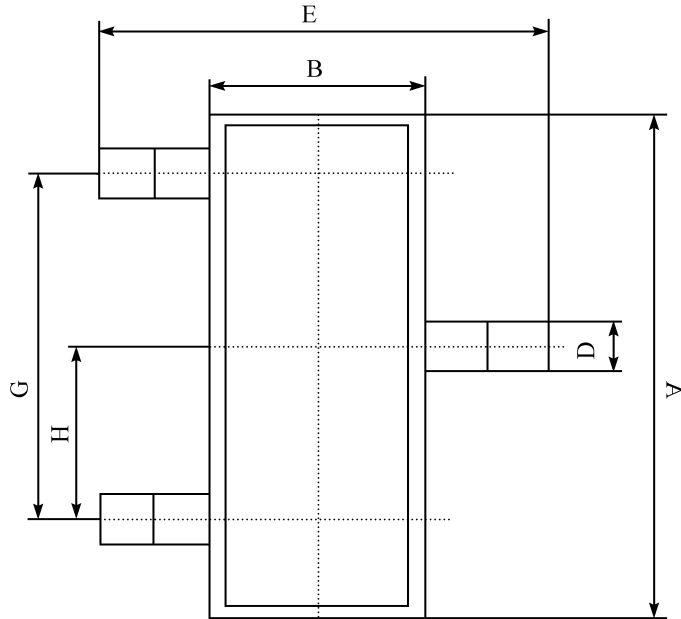
Characteristic 特性參數	Symbol 符號	Min 最小值	Max 最大值	Unit 單位
Collector-Emitter Breakdown Voltage(3) 集電極-射極擊穿電壓(I <sub>C</sub> =1mA <sub>dc</sub> , I <sub>B</sub> =0)	V <sub>(BR)CEO</sub> MMBTA42 MMBTA43	300 200	— —	V <sub>dc</sub>
Collector-Base Breakdown Voltage 集電極-基極擊穿電壓(I <sub>C</sub> =100μA <sub>dc</sub> , I <sub>E</sub> =0)	V <sub>(BR)CBO</sub> MMBTA42 MMBTA43	300 200	— —	V <sub>dc</sub>
Emitter-Base Breakdown Voltage 發射極-基極擊穿電壓(I <sub>E</sub> = 100μA <sub>dc</sub> , I <sub>C</sub> =0)	V <sub>(BR)EBO</sub>	6.0	—	V <sub>dc</sub>
Emitter Cutoff Current 發射極截止電流 (V <sub>EB</sub> =6.0V <sub>dc</sub> , I <sub>C</sub> =0) (V <sub>EB</sub> =4.0V <sub>dc</sub> , I <sub>C</sub> =0)	I <sub>EBO</sub> MMBTA42 MMBTA43	— —	100 100	nA <sub>dc</sub>
Collector Cutoff Current 集電極截止電流 (V <sub>CB</sub> =200V <sub>dc</sub> , I <sub>E</sub> =0) (V <sub>CB</sub> =160V <sub>dc</sub> , I <sub>E</sub> =0)	I <sub>CBO</sub> MMBTA42 MMBTA43	— —	100 100	nA <sub>dc</sub>
DC Current Gain 直流電流增益	H <sub>FE</sub>			—
(I <sub>C</sub> =1.0mA <sub>dc</sub> , V <sub>CE</sub> =10.0V <sub>dc</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> )	MMBTA42 MMBTA43	40 40	— —	
Collector-Emitter Saturation Voltage 集電極-發射極飽和壓降 (I <sub>C</sub> =20mA <sub>dc</sub> , I <sub>B</sub> =2.0mA <sub>dc</sub> )	V <sub>CE(sat)</sub> MMBTA42 MMBTA43	— —	0.5 0.5	V <sub>dc</sub>
Base-Emitter Saturation Voltage 基極-發射極飽和壓降 (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 電流增益帶寬乘積 (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 (V <sub>CB</sub> =20.0V <sub>dc</sub> , I <sub>E</sub> =0, f=1.0MHz)	C <sub>cb</sub> MMBTA42 MMBTA43	— —	3.0 4.0	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%.

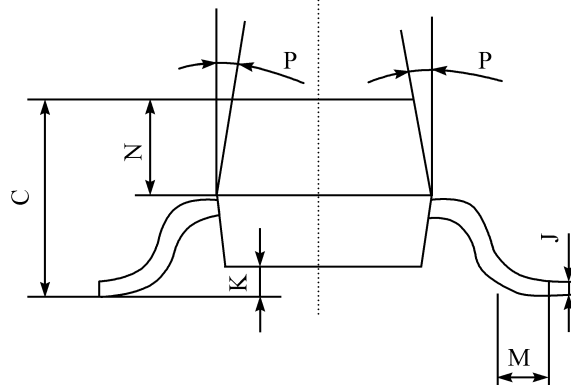


MMBTA42 MMBTA43

■ DIMENSION 外形封裝尺寸



序號	數值及公差
A	$2.90 \pm 0.10$
B	$1.30 \pm 0.10$
C	$1.00 \pm 0.10$
D	$0.40 \pm 0.10$
E	$2.40 \pm 0.20$
G	$1.90 \pm 0.10$
H	$0.95 \pm 0.05$
J	$0.13 \pm 0.05$
K	$0.00-0.10$
M	$\geq 0.2$
N	$0.60 \pm 0.10$
P	$7 \pm 2^\circ$



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.

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