

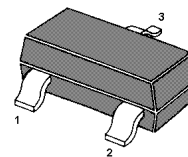
MMBTA14

NPN Silicon Epitaxial Planar Transistors

for general purpose applications, darlington transistor.

The transistor is subdivided into one group according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



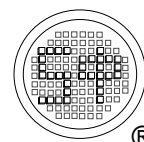
1. Base 2. Emitter 3. Collector
TO-236 Plastic Package
Marking Code : FH

Absolute Maximum Ratings ($T_a=25\text{ }^\circ\text{C}$)

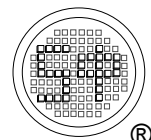
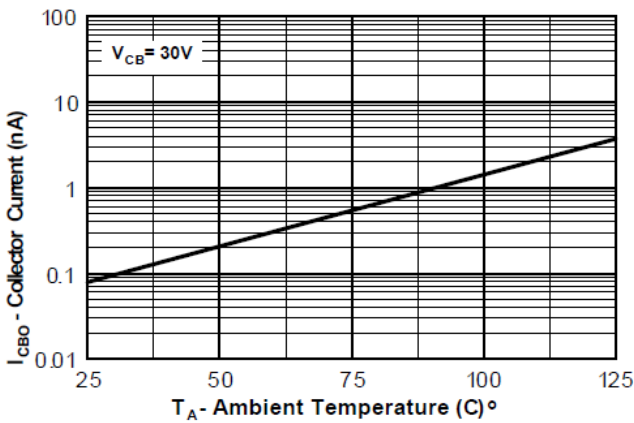
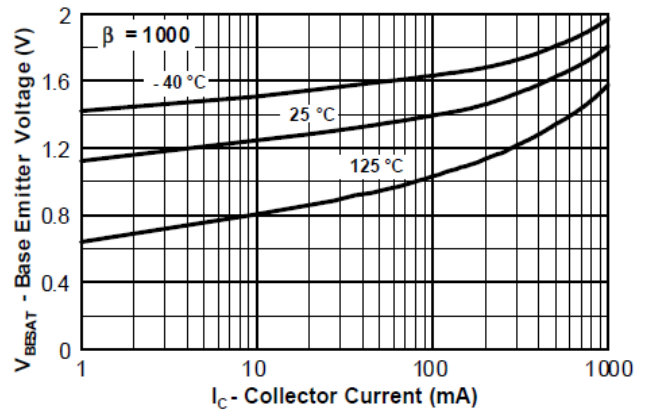
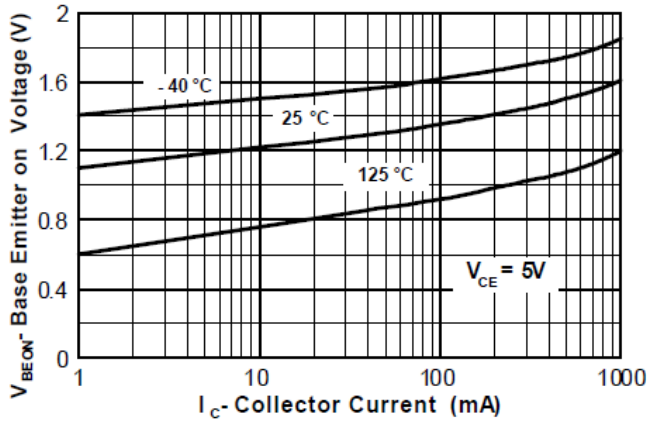
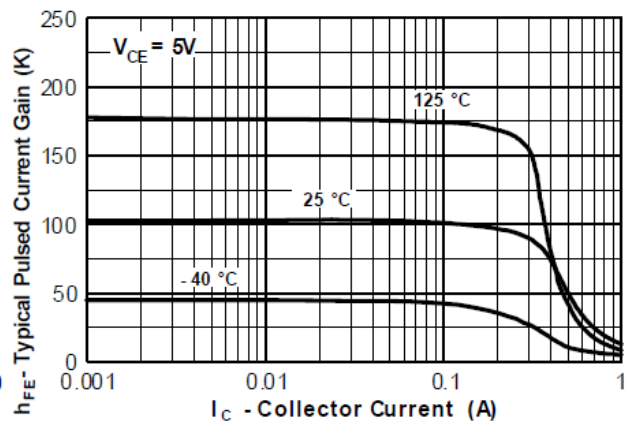
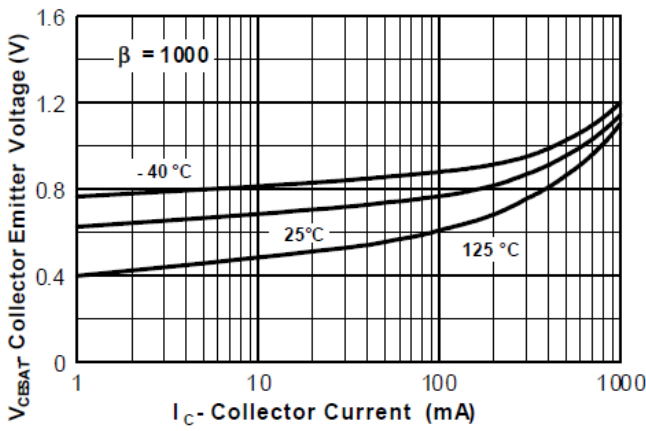
	Symbol	Value	Unit
Collector Emitter Voltage	V_{CES}	30	V
Collector Base Voltage	V_{CBO}	30	V
Emitter Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_{tot}	300	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{Stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$

Characteristics at $T_{amb}=25\text{ }^\circ\text{C}$

	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE}=5\text{V}$, $I_C=10\text{mA}$	h_{FE}	10000	-	-
at $V_{CE}=5\text{V}$, $I_C=100\text{mA}$	h_{FE}	20000	-	-
Collector Emitter Breakdown Voltage at $I_C=100\mu\text{A}$	$V_{(BR)CES}$	30	-	V
Collector Cutoff Current at $V_{CB}=30\text{V}$	I_{CBO}	-	100	nA
Emitter Cutoff Current at $V_{EB}=10\text{V}$	I_{EBO}	-	100	nA
Collector Emitter Saturation Voltage at $I_C=100\text{mA}$, $I_B=0.1\text{mA}$	$V_{CE(sat)}$	-	1.5	V
Base Emitter On Voltage at $I_C=100\text{mA}$, $V_{CE}=5\text{V}$	$V_{BE(on)}$	-	2	V
Current Gain Bandwidth Product at $V_{CE}=5\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	f_T	125	-	MHz

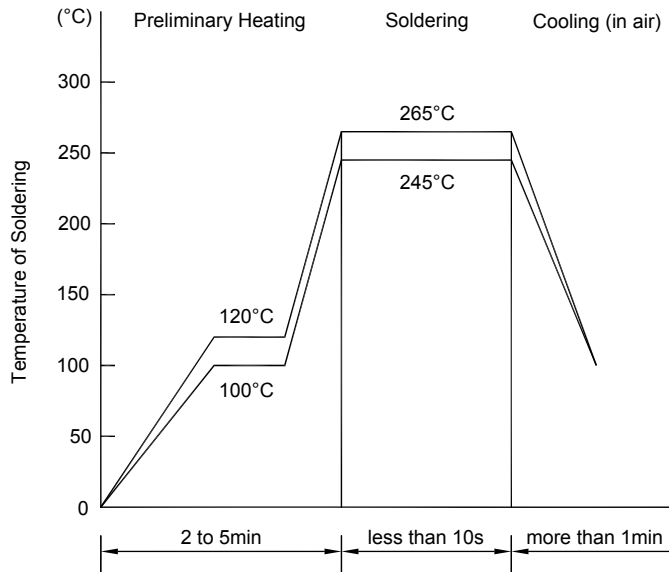


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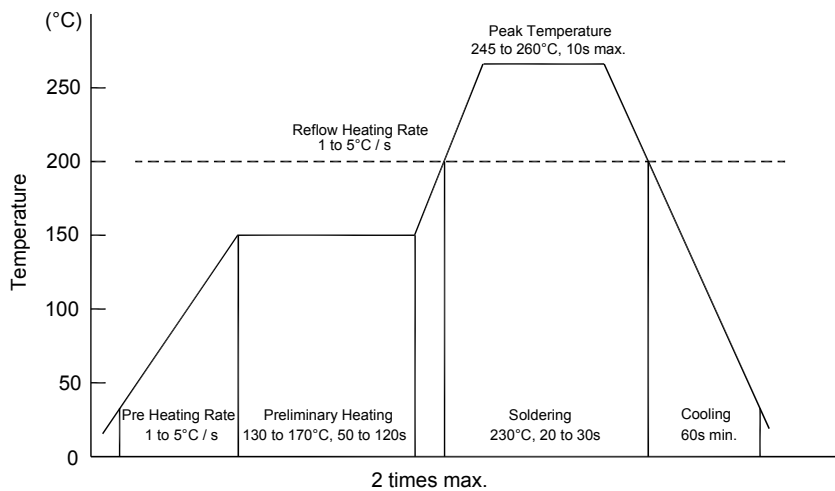


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• Recommended condition of flow soldering



• Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)

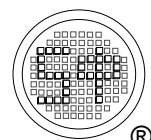
• Condition of hand soldering

Temperature: 370 °C (290 °C for DO-213AA/AB)

Time: 3 s max.

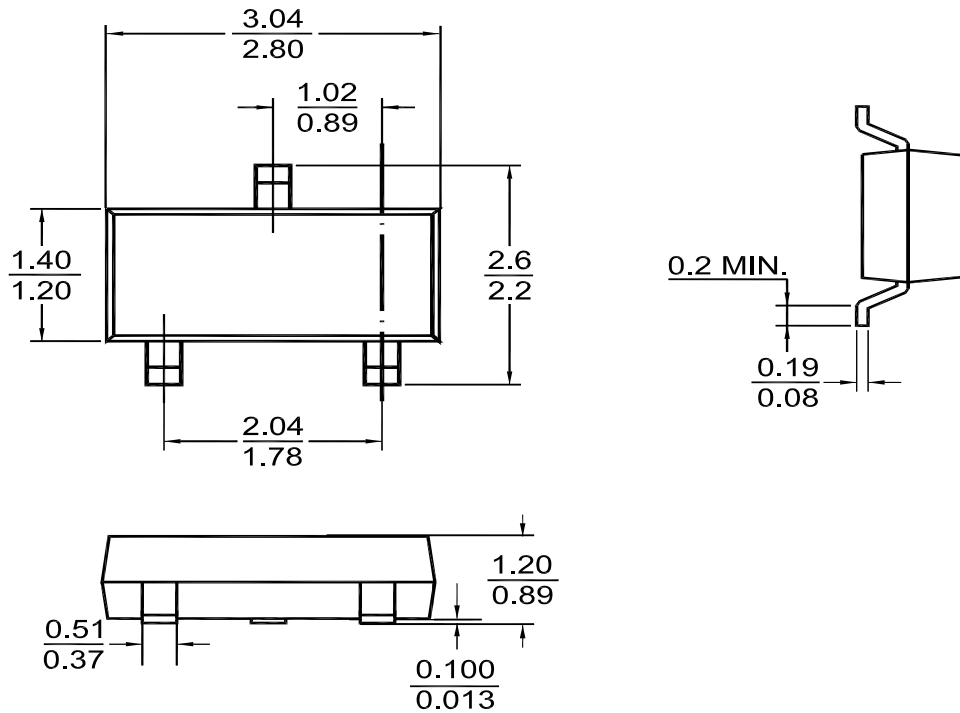
Times: one time

• Remark: Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)

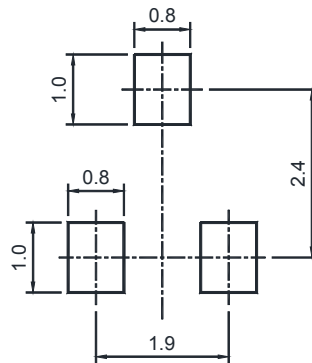


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PACKAGE OUTLINE



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-236	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

