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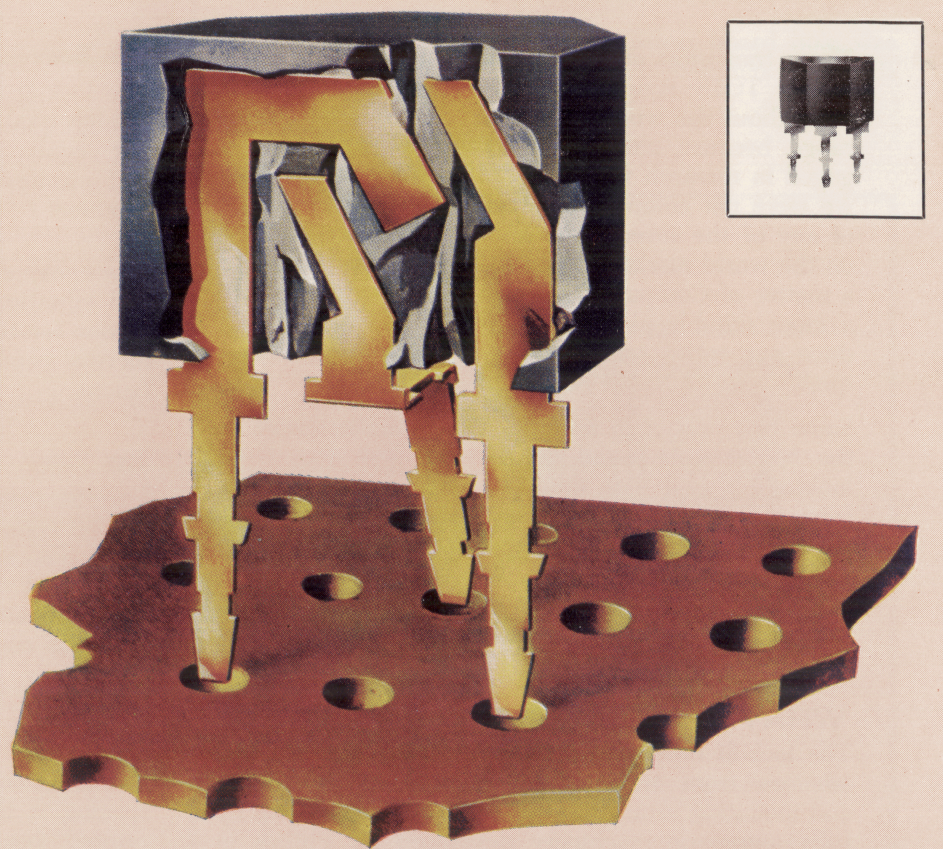
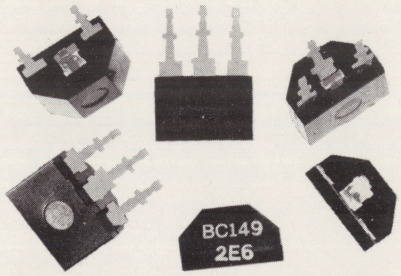


"Miniwatt" PLASTIC LOCK-FIT TRANSISTORS

"Miniwatt"

LOCK-FIT TRANSISTORS



Most every engineer and technician engaged in the Electronics Industry (and possibly in other fields where semiconductors are used) is familiar with the "Miniwatt" TRANSISTOR family BC107, BC108, BC109. There are probably more of these devices manufactured and used in Australia than any other transistor types!

These transistors are encapsulated in an hermetically sealed TO18 style metal can, the same as used throughout the world within the professional quality range, because, although this Company has been engaged in research work with plastics for many years, we were not completely satisfied with the properties of any of the several plastic encapsulations available on the world market. Consequently it was decided as a matter of Company Policy that until we could find a more suitable plastic encapsulation we would produce our entire range in the more extravagant but quality proven metal execution.

Some two years ago now the Philips Laboratories in the Netherlands found the breakthrough they were looking for, and with the experience passed on to us from the production of many millions of devices in plastic we are now able to announce the release from Australian production of the BC107 family of transistors in plastic lock-fit encapsulation, together with the types BF184, BF185 and the PNP type BC177 family.

WHAT IS A LOCK-FIT TRANSISTOR?

The lock-fit type plastic transistor represents a major advance from traditional encapsulation techniques and mounting arrangements. This is made possible by fully automatic machinery developed by Philips in the Netherlands.

The Body

The lock-fit transistor body is homogenously formed in high quality epoxy resin and has an assymmetrical but regular outline shape which simplifies handling and ensures immediate orientation by eye, jig, or machine.

The epoxy encapsulation is highly resistant to shock and vibration, provides excellent environmental protection for the crystal, and has a junction to ambient thermal conductivity superior to most metal encapsulations.

The Pins

Lock-fit transistors have flat, gold plated specially shaped connecting pins in place of conventional wire leads. The spring set of the pins in conjunction with the special shape provides a push to fit insertion into printed boards, which guarantees an intimate contact with the copper track, resulting in excellent solderability.

Pin Spacing and Shape

The main consideration in determining minimum pin spacing is the ability to satisfactorily solder to the printed board without the risk of short circuits occurring between adjacent pins.

Considerable research revealed that 0.1″ was too small and provided unsatisfactory results. Consequently a standard TO5 pin circle diameter with a centre to centre minimum of $\sqrt{0.2''}$ was chosen. See Fig. (1).

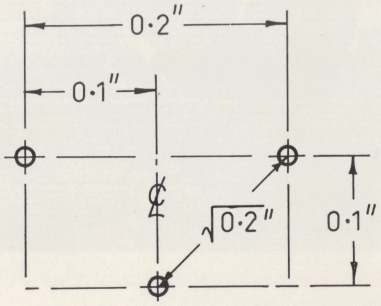


Fig. 1.

The pins are especially shaped as shown in Fig. (2) where it can be seen that each pin has four principal shoulders A, B, C, D. The shape of the pins has been designed to be self-locking with either of the two most commonly used printed board thickness used throughout the world.

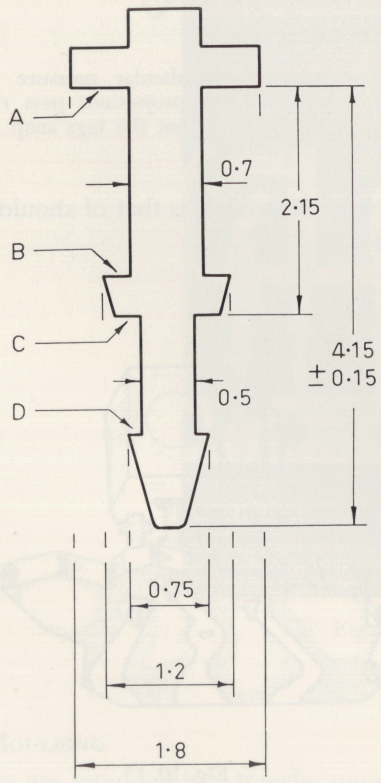


Fig. 2.

For printed boards of 1mm thickness board hole size should be 0.8mm (0.031″), and shoulders C and D act as buffer and lock respectively. Fig. (3).

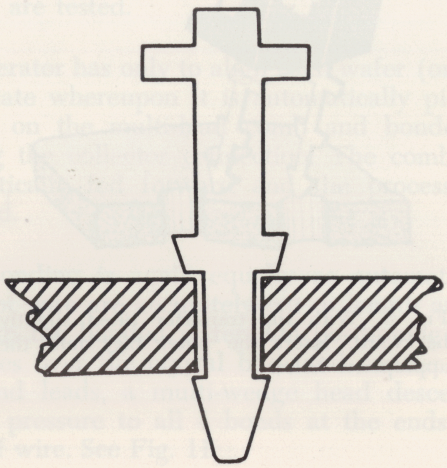


Fig. 3.

For printed boards of $\frac{1}{16}$″ thickness board hole size should be 1.3mm (0.051″), and shoulders A and B act as buffer and lock. Fig. (4).

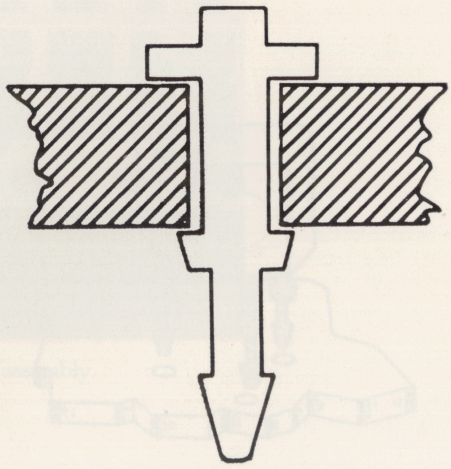


Fig. 4.