COMMON CIRCUIT

VOX circuit

A portion of the microphone input signal is amplified by Q_{3011} **(2SY1815Y)** and detected by D_{3014} **(1N60)**, producing a DC voltage. This voltage is amplified by Q_{3012} **(2SC1815Y)** and Q_{3013} **(2SA733)**. Q_{3013} drives Schmitt trigger Q_{3014}/ Q_{3018} **(2SC1815Y)**; when Q_{3018} is driven ON, relay driver Q_{3019} **(2SA496Y)** is turned ON, activating the antenna relay. An RC circuit composed of front panel DELAY control VR_{5101} and C_{3043} sets the relay hang time by delaying the cutoff of Q_{3013} when speech input stops.

A portion of the speaker output is amplified by Q_{3015} **(2SC1815Y)** and detected by D_{3015} **(1N60)**. This provides a bucking voltage which is amplified by Q_{3016} **(2SC1815Y)** and Q_{3017} **(2SA733)** and fed to Q_{3013}, preventing the speaker output from tripping the VOX circuit.

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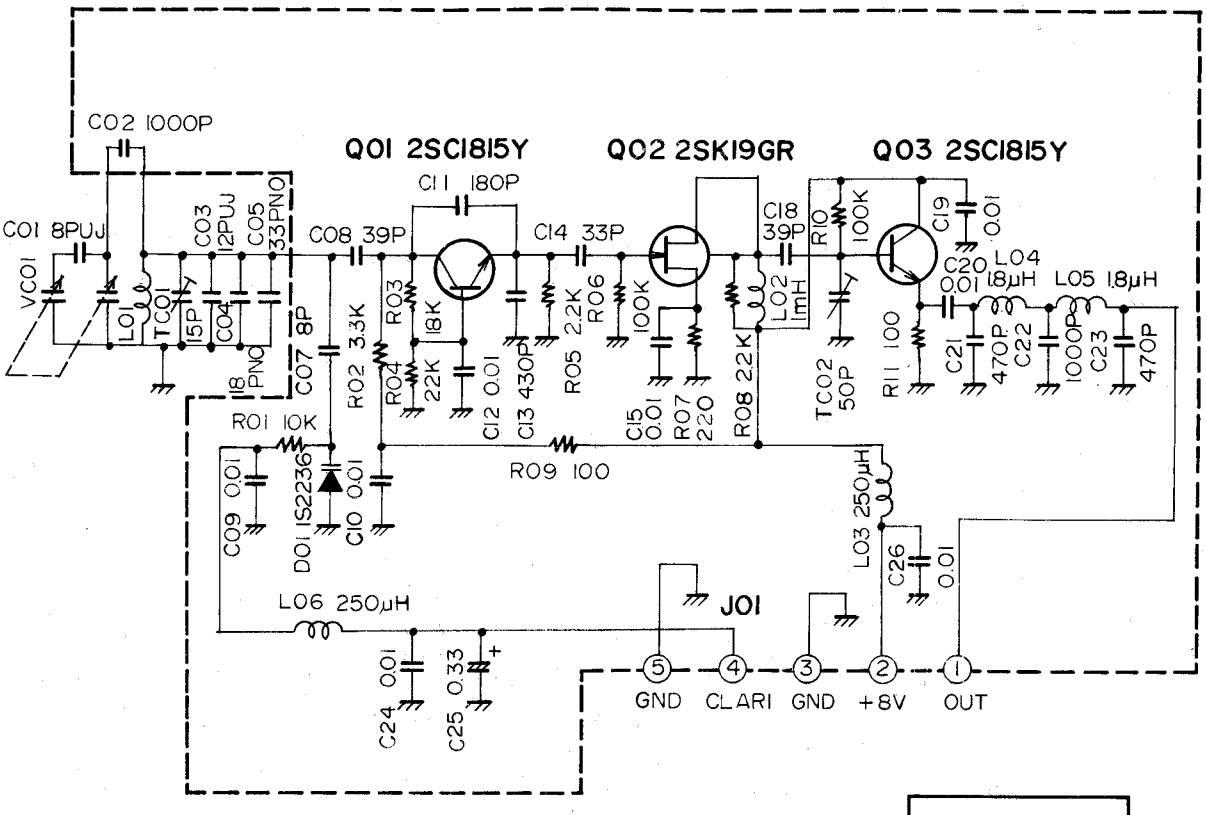
VFO oscillator Q_{4301} **(2SC1815Y)** operates in a modified Colpitts configuration, providing a 5.0–5.5 MHz VFO signal. The 500 kHz tuning range is tuned by variable capacitor VC_{4301}, which is a two-section capacitor. The sub-blades of VC_{4301} provide temperature compensation against frequency change caused by thermal expansion of the main blades. The VFO signal is fed through buffer amplifiers Q_{4302} **(2SK19GR)** and Q_{4303} **(2SC1815Y)**, passed through a low-pass filter, and fed, through diode switches D_{1044}/D_{1045} **(1S1555)**, to the premix IC, Q_{1006}.

Varactor diode D_{4301} is placed in the oscillator circuit during clarifier operation. In accordance with the tuning of the front panel clarifier control and L_{4306}, the capacitance variation induced in D_{4301} allows offset from the main dial frequency of ±2.5 kHz.



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