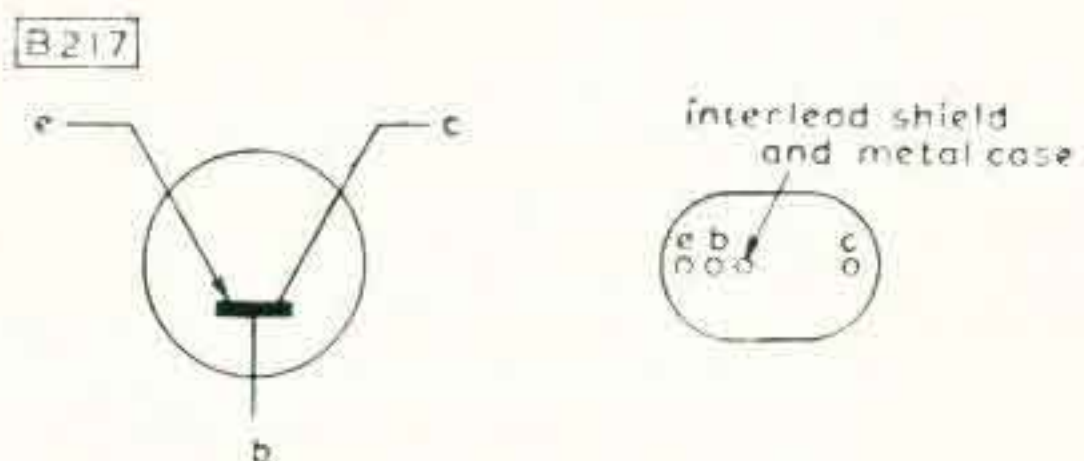


# R.F. JUNCTION TRANSISTOR

# OC170

R.F. junction transistor of the p-n-p alloy-diffused type intended for use as an r.f. amplifier or mixer oscillator in short-wave receivers or as an i.f. amplifier in a.m. and a.m./f.m. receivers.



## DIMENSIONS

Max. body length	9.5	mm
Max. diameter	9.1	mm
Min. lead length	37	mm

## ABSOLUTE MAXIMUM RATINGS

### Collector voltage

$V_{cb(pk)}$ max.	-20	V
$V_{cb}$ max.	-20	V
* $V_{ce(pk)}$ max.	-20	V
* $V_{ce}$ max.	-20	V

\*This value applies when  $\frac{R_b}{R_e} < 100$  and  $R_e > 200\Omega$

### Collector current

$i_{c(pk)}$ max.	10	mA
$I_c$ max.	10	mA

### Emitter current

$i_{e(pk)}$ max.	10	mA
$I_e$ max.	10	mA

### Reverse emitter current

$i_{e(pk)}$ max.	1.0	mA
$I_e$ max.	1.0	mA

### Total dissipation

$$P_{tot} \text{ max.} = \frac{T_{\text{junction max.}} - T_{\text{ambient}}}{\theta}$$

### Temperature ratings

Storage temperature limits	-55 to +75	°C
Maximum junction temperature		
Continuous operation	75	°C
‡Intermittent operation (total duration = 200 hours max.)	90	°C
Junction temperature rise above ambient, $\theta$	0.6	°C/mW

‡Likelihood of full performance of a circuit at this temperature is also dependent on the type of application.



# OC170 (Cont.)

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CHARACTERISTICS at  $T_{\text{ambient}} = 25^{\circ}\text{C}$

		Typical Min.	production Typ.	spreads Max.	
Collector leakage current ( $V_{cb} = -6\text{V}$ , $I_e = 0\text{mA}$ ) ( $V_{cb} = -20\text{V}$ , $I_e = 0\text{mA}$ )	$I_{co}$	—	1.5	13	$\mu\text{A}$
		—	—	50	$\mu\text{A}$
Emitter leakage current ( $V_{eb} = -500\text{mV}$ , $I_e = 0\text{mA}$ )	$I_{eo}$	—	—	50	$\mu\text{A}$
Base current ( $V_{cb} = -6\text{V}$ , $I_e = 1\text{mA}$ )	$I_b$	—	15	50	$\mu\text{A}$
Base input voltage ( $V_{cb} = -6\text{V}$ , $I_e = 1\text{mA}$ )	$V_{be}$	-210	-260	-330	mV
Current amplification cut-off frequency at $V_{ce} = -6\text{V}$ , $I_e = 1\text{mA}$ ( $ \alpha'  = 1$ )	$f_1$	40	70	—	Mc/s
Current amplification factor ( $V_{ce} = -6\text{V}$ , $I_e = 1\text{mA}$ , $f = 1\text{kc/s}$ )	$\alpha'$	20	100	—	
Noise figure ( $V_{ce} = -6\text{V}$ , $I_e = 1\text{mA}$ ) $R_{\text{source}} = 200\Omega$ , $f = 500\text{kc/s}$		—	3.0	8.0	dB
$R_{\text{source}} = 150\Omega$ , $f = 10\text{Mc/s}$		—	4.0	8.0	dB
( $V_{cb} = -6\text{V}$ , $I_e = 1\text{mA}$ ) $R_{\text{source}} = 500\Omega$ , $f = 1\text{kc/s}$		—	18	33	dB