

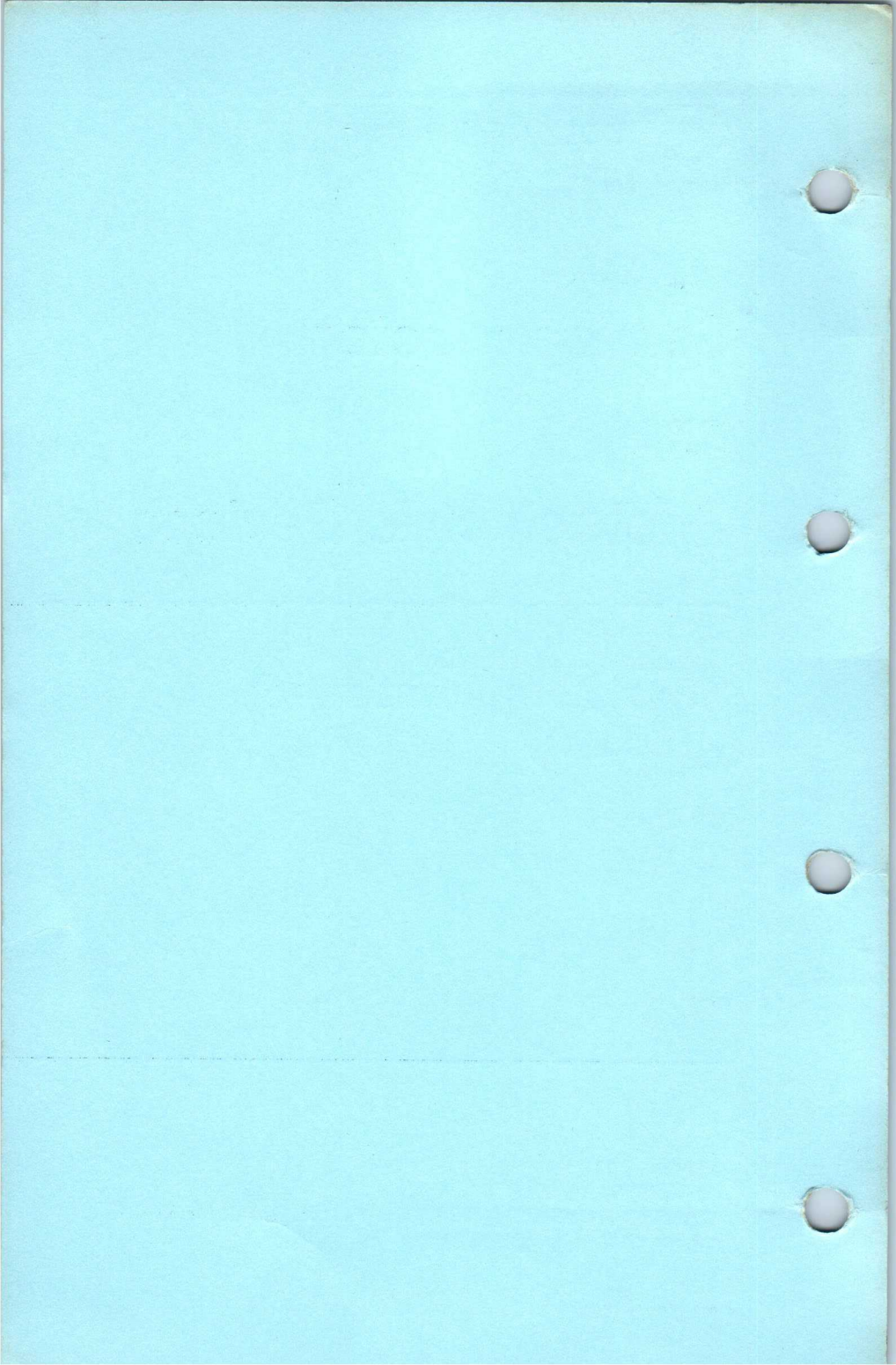


VOLUME 4 (Part III)

Semiconductor and Photoelectric Devices

transistors (continued)

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MULLARD LIMITED
MULLARD HOUSE, TORRINGTON PLACE, LONDON W.C.1
TELEPHONE: LANGHAM 6633



HIGH FREQUENCY POWER TRANSISTOR

OC22

High frequency power transistor for use in high speed industrial switching applications, digital computers and high quality audio amplifiers.

PRELIMINARY DATA

ABSOLUTE MAXIMUM RATINGS (limiting values)

The equipment designer must ensure that no transistor exceeds these ratings. In arriving at the actual operating conditions, variation in supply voltages, component tolerances and ambient temperature must also be taken into account.

Collector voltage

$\dagger V_{ce(pk)}$ max.	-32	V
$*V_{ce(av)}$ max.	-24	V
$\dagger V_{ce(d.c.)}$ max.	-24	V
$V_{eb(pk)}$ max.	-47	V
$*V_{cb(av)}$ max.	-36	V
$V_{eb(d.c.)}$ max.	-36	V

\dagger This voltage is limited to small currents as shown on page C3.

Reverse emitter-base voltage

$V_{eb(pk)}$ max.	-15	V
$*V_{eb(av)}$ max.	-12	V
$V_{eb(d.c.)}$ max.	-12	V

Collector current

$i_c(pk)$ max.	2.0	A
$*I_c$ max.	1.0	A

Emitter current

$i_e(pk)$ max.	2.2	A
$*I_e$ max.	1.2	A

Base current

$i_b(pk)$ max.	200	mA
$*I_b$ max.	200	mA

Total dissipation

See page C5

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

*Averaged over any 20ms period.

Temperature ratings

Storage temperature	-55 to +75	°C
Maximum junction temperature	90	°C
Junction temperature rise above mounting base temperature θ_m	3.0	°C/W

For full information on calculating junction temperature see fig. 2 and operating notes, page D4.

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

		Typical production spreads			
		Min.	Av.	Max.	
Grounded base					
Collector leakage current ($V_c = -10\text{V}$, $I_e = 0\text{mA}$)	I_{co}	—	30	100	μA
Emitter leakage current ($V_e = -10\text{V}$, $I_c = 0\text{mA}$)	I_{eo}	—	20	100	μA
Grounded emitter					
Collector knee voltage $I_c = 400\text{mA}$ (see fig. 1)	$V_{c(\text{knee})}$	—	-400	-600	mV
Collector bottoming voltage ($I_c = 1\text{A}$, $I_b = 30\text{mA}$)	V_{ce}	—	-600	—	mV
*Base input voltage	V_{be}				
($V_c = -2\text{V}$, $I_c = 100\text{mA}$)		—	-260	-350	mV
($V_c = -2\text{V}$, $I_c = 1\text{A}$)		—	-1.0	-2.0	V
*See page C1 for values at other collector currents.					
Current amplification factor $\alpha' = \frac{I_c - I_{co}}{I_b + I_{co}}$					
($V_c = -2\text{V}$, $I_c = 100\text{mA}$)		—	200	—	
($V_c = -2\text{V}$, $I_c = 1\text{A}$)		50	150	—	