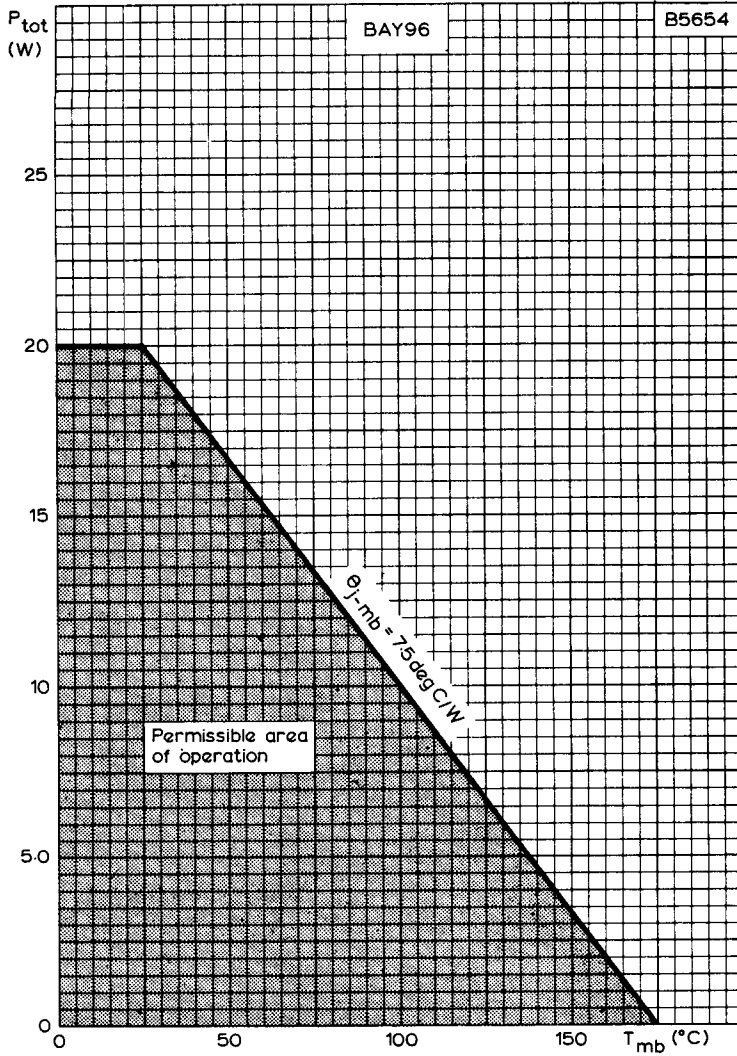


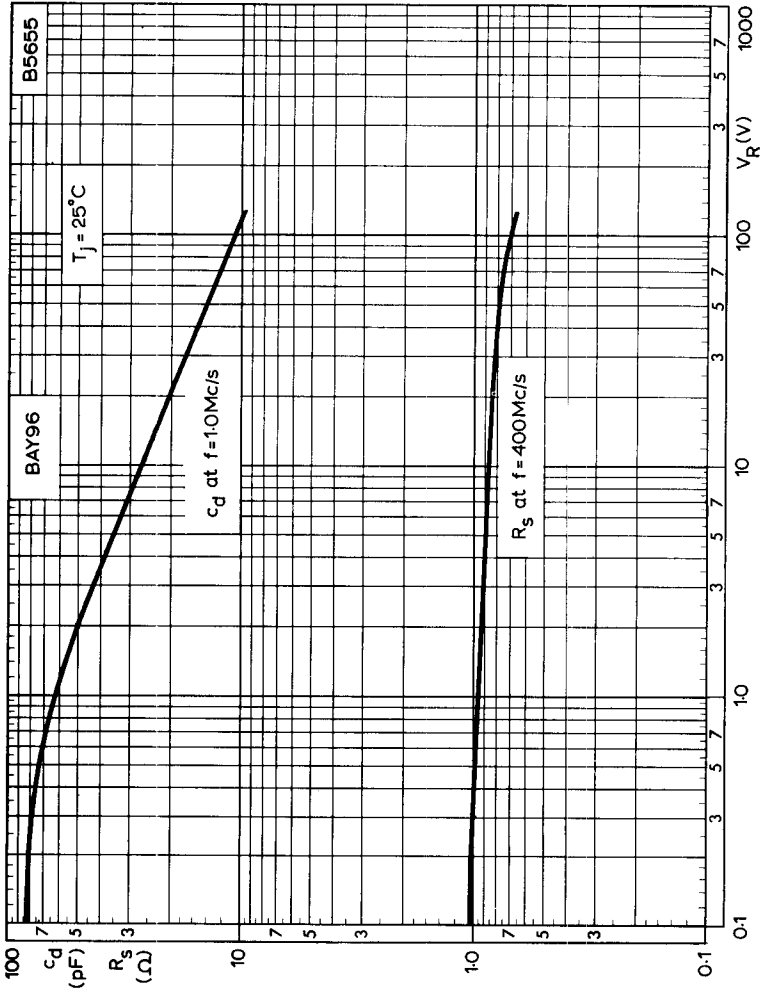
SILICON PLANAR EPITAXIAL VARACTOR DIODE

BAY96



TOTAL DISSIPATION PLOTTED AGAINST MOUNTING BASE TEMPERATURE



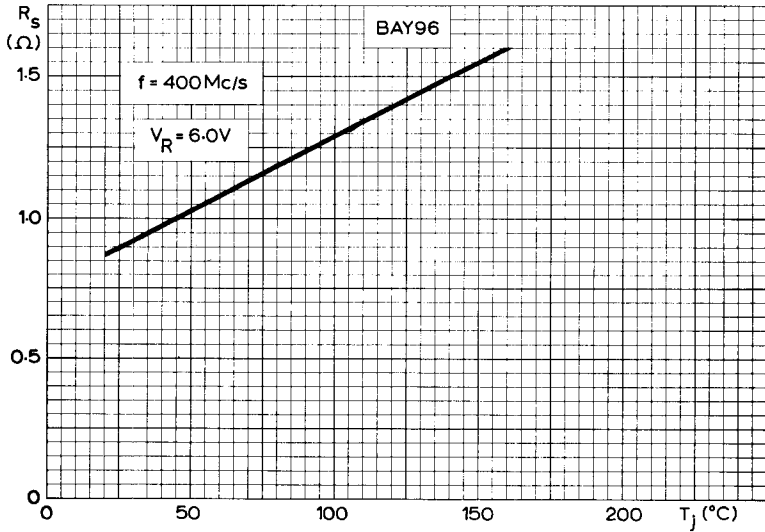
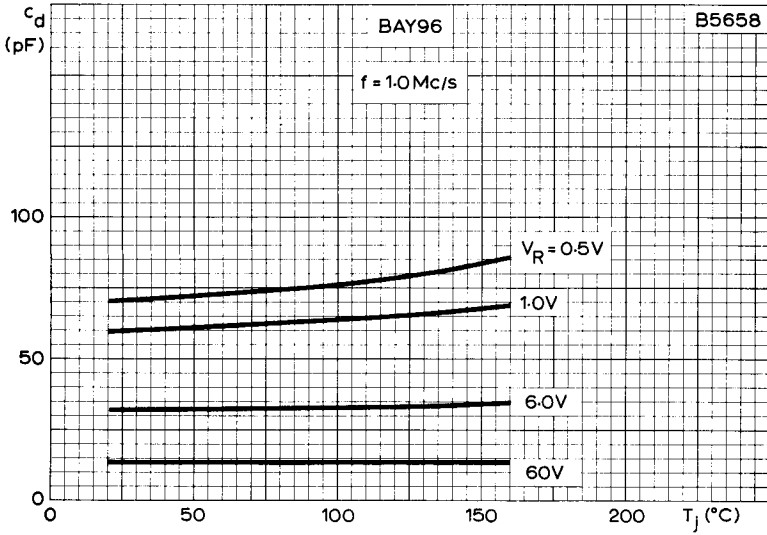


TYPICAL DIODE CAPACITANCE AND SERIES RESISTANCE PLOTTED AGAINST REVERSE VOLTAGE



SILICON PLANAR EPITAXIAL VARACTOR DIODE

BAY96



TYPICAL DIODE CAPACITANCE AND SERIES RESISTANCE PLOTTED
AGAINST JUNCTION TEMPERATURE



SILICON PLANAR EPITAXIAL VARACTOR DIODE

BAY96

TENTATIVE DATA

Silicon planar epitaxial varactor diode for use as a high efficiency frequency multiplier in the v. h. f. and u. h. f. bands. As a tripler from 150 to 450 Mc/s it has a typical efficiency of 64% and can handle inputs up to 40W. The BAY96 has a very low series resistance and is packaged in a low inductance, hermetically sealed, welded ceramic-metal envelope. DO-4 with stud cathode.

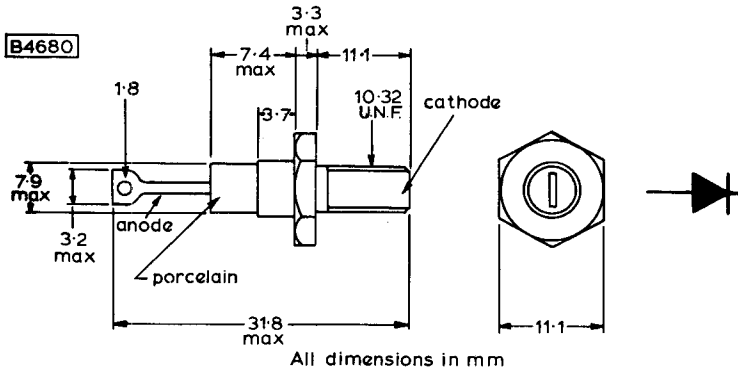
QUICK REFERENCE DATA

V_R max.	120	V
P_{tot} max.	20	W
T_j max.	175	°C
c_d ($V_R = 6.0V$, $f = 1.0Mc/s$)	28 to 39	pF
R_s max. ($V_R = 6.0V$, $f = 400Mc/s$)	1.2	Ω
$f_{co} = \frac{1}{2\pi R_s \cdot c_d}$ at $V_R = 120V$ typ.	25	Gc/s

OUTLINE AND DIMENSIONS

Conforming to J. E. D. E. C. DO-4

V. A. S. C. A. SO-10



RATINGS

Limiting values of operation according to the absolute maximum system.

Electrical

V_R max.	120	V
P_{tot} max. ($T_{mb} = 25^\circ\text{C}$)	20	W

Temperature

T_{stg} min.	-65	$^\circ\text{C}$
T_{stg} max.	175	$^\circ\text{C}$
T_j max. (operating)	175	$^\circ\text{C}$

THERMAL CHARACTERISTIC

θ_{j-mb}	7.5	deg C/W
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ELECTRICAL CHARACTERISTICS

		Min.	Typ.	Max.	
c_d	Total capacitance				
	$V_R = 6.0\text{V}$, $f = 1.0\text{Mc/s}$	28	-	39	pF
R_s	Series resistance				
	$V_R = 6.0\text{V}$, $f = 400\text{Mc/s}$	-	0.9	1.2	Ω
f_{co}	Cut-off frequency				
	$V_R = 120\text{V}$				
	$\frac{1}{2\pi R_s \cdot c_d}$	-	25	-	Gc/s



SILICON PLANAR EPITAXIAL VARACTOR DIODE

BAY96

APPLICATION INFORMATION

TYPICAL OPERATING CHARACTERISTICS AS A FREQUENCY TRIPLER

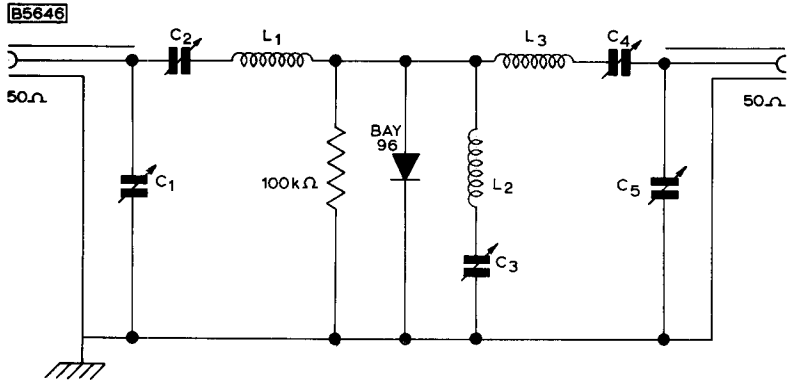


Fig.1

Frequency tripler circuit - 150 to 450Mc/s

L_1 = 6.5 turns 18 s.w.g. wire 0.297" I.D. 0.562" long

L_2 = 2 turns 14 s.w.g. wire 0.266" I.D. 0.312" long

L_3 = 1" × 0.25" × 0.020" copper strip 0.562" from chassis

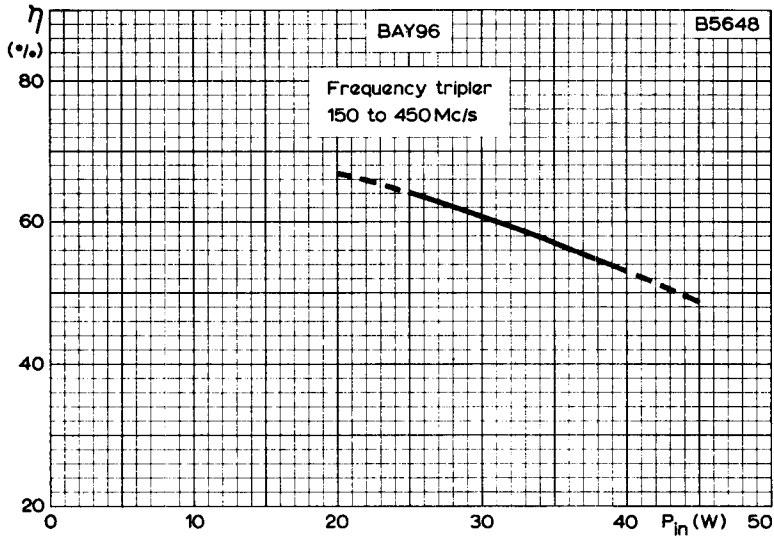
C_1 = 7.0 - 100pF variable

C_2, C_3, C_4 = 2.0 - 13pF variable

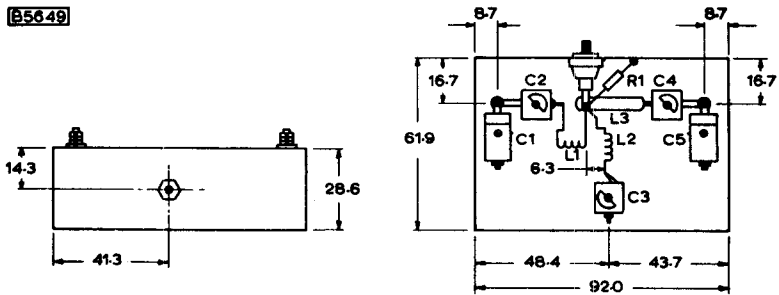
C_5 = 2.0 - 25pF variable

		Min.	Typ.	
η	Efficiency			
	$P_{in} = 25W, f_{in} = 150Mc/s$	60	64	%

APPLICATION INFORMATION (cont'd)



TYPICAL TRIPLER EFFICIENCY PLOTTED AGAINST INPUT POWER
See circuit on page D3



All dimensions in mm.

COMPONENT LAYOUT OF TRIPLER CIRCUIT

