

$$Y = K_C X, \quad (1)$$

X – (); Y – (); K_C – ().
 $M[X]$,

$$M[Y] = K_C M[X], \quad (2)$$

$M[Y]$ $M[X]$ –

$$H_X(\omega) = \lim_{T \rightarrow \infty} (2T)^{-1} |X(j\check{S})|^2 \quad (3)$$

$X(t)$ [1 - 3]
 $X(j)$ – ; $X(s)$ s
 j ; T – ; $= 2$ f.

$$H_Y(\omega) = \lim_{T \rightarrow \infty} (2T)^{-1} |Y(j\check{S})|^2 \quad (4)$$

[3, 4]

$$K_C(s) = \frac{Y(s)}{X(s)} = \frac{\sum_{k=0}^m B_k s^k}{\sum_{q=0}^n A_q s^q}, \quad (5)$$

$Y(s), X(s)$ – $Y(t)$ $X(t)$, ; k, q –
 Y X , ; A_q, B_k –

[4, 5]

$$H_Y(\check{S}) = |K_C(j\check{S})|^2 H_X(\check{S}), \quad (6)$$

 $K_C(j\omega)$ –

$$u_D(\check{S}) = f^{-1/2} \left(\int_0^\infty |K_C(j\check{S})|^2 H_X(\check{S}) d\check{S} \right)^{1/2} = f^{-1/2} \left(T^{-1} \int_0^\infty |K_C(j\check{S})|^2 |X(j\check{S})|^2 d\check{S} \right)^{1/2}, \quad (7)$$

[6 - 11]

 $|K_C(j\omega)|$ –

$$|K_C(j\check{S})| = (a^2(\check{S}) + b^2(\check{S}))^{1/2}, \quad (8)$$

 $a(\check{S}), b(\check{S})$ – $K_C(j\omega)$, [2, 5, 11]. $X(j)$, $X(t)$

$$X(j\check{S}) = \int_0^{\infty} X(t) e^{-j\check{S}t} dt, \quad (9)$$

0-

[8 – 12].

[2, 9].

(7)

$u_D(t)$

$$u_D(t) = f^{-1/2} \int_0^{\infty} u_D(\check{S}) e^{j\check{S}t} d\check{S} = f^{-1/2} \left[\int_0^{\infty} u_D(\check{S}) \cos(\check{S}t) d\check{S} + j \int_0^{\infty} u_D(\check{S}) \sin(\check{S}t) d\check{S} \right]. \quad (10)$$

(10)

(10)

$$|u_D(t)| = \left[\left(\int_0^{\infty} f^{-1/2} u_D(\check{S}) \cos(\check{S}t) d\check{S} \right)^2 + \left(\int_0^{\infty} f^{-1/2} u_D(\check{S}) \sin(\check{S}t) d\check{S} \right)^2 \right]^{1/2}. \quad (11)$$

(11).

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