

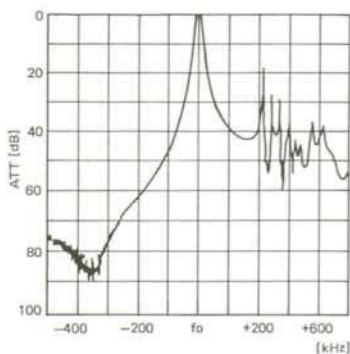
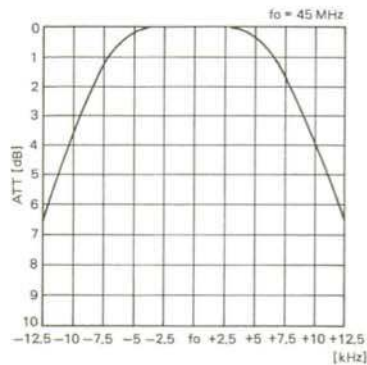
## HCM FILTERS VHF 45MHz/55MHz Fundamental Mode Series

Type	Center frequency (MHz)	No. of pole	Passband		Stopband		Max. ripple (dB)	Max. loss (dB)	Guaranteed attenuation		Terminating impedance Z <sub>t</sub> (Ω//pF)	Coupling impedance Z <sub>c</sub> (pF)	Case
			(dB)	(kHz)	(dB)	(kHz)			(dB)	(kHz)			
45E1FF	45	2	3	±3.75	10	±12.5	1.0	2.0	65	-910	200//4	-	UM-1S
45E2FF	45	4	3	±3.75	30	±12.5	1.0	4.0	90	±910	350//6.5	18	(UM-1S) x 2
45E3FF	45	6	3	±3.75	50	±12.5	2.0	6.0	80	±910	350//5	-	H-1
45E4FF	45	8	3	±3.75	70	±12.5	2.0	7.0	80	±910	350//5	-	H-1
45E1B9F	45	2	3	±7.5	15	±25	1.0	2.0	65	-910	650//3	-	UM-4S
45E2B9F	45	4	3	±7.5	30	±25	1.0	3.0	90	±910	650//3	9	(UM-4S) x 2
45E3BF	45	6	3	±7.5	60	±25	2.0	5.0	80	±910	650//1.5	-	H-1
45E4BF	45	8	3	±7.5	80	±25	2.0	6.0	80	±910	650//1.5	-	H-1
45E1A9F	45	2	3	±15	10	±50	1.0	2.0	65	-910	1200//0	-	UM-4S
45E2A9F	45	4	3	±15	30	±50	1.0	3.0	80	±910	1200//0.7	3.5	(UM-4S) x 2
55E1D3F	55	2	3	±10	17	±50	1.0	2.5	65	-910	1100//2.0	-	UM-4S
55E2D3F	55	4	3	±10	40	±40	1.0	4.0	80	-910	550//1.8	8.5	(UM-4S) x 2

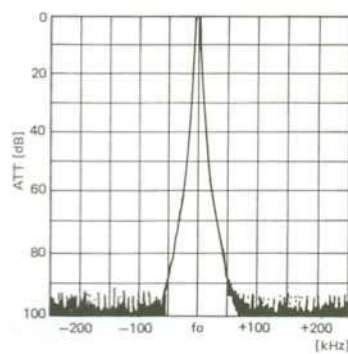
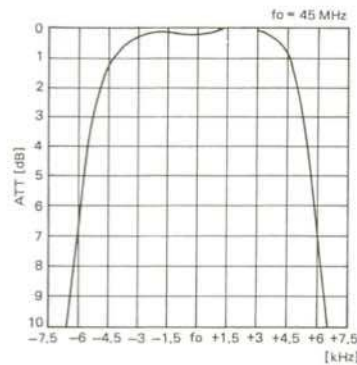
Outline drawing: See pages 39,40  
 \*UM-4S is available with UM-1S, too.

Operating temperature range: -30°C to +80°C

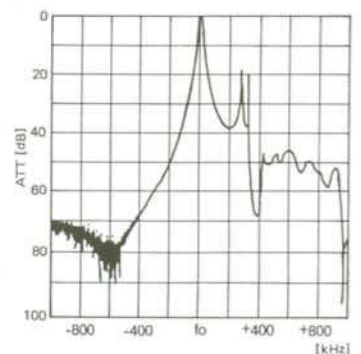
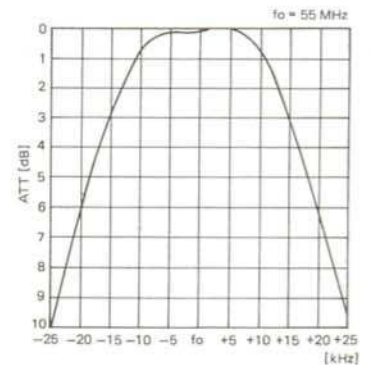
45E1B9F



45E2FF



55E1D3F



## HCM FILTERS 10.7 MHz

### 25.0 kHz CHANNEL SPACING

Type	No. of pole	Passband		Stopband			Max. ripple (dB)	Max. loss (dB)	Guaranteed attenuation		Termination		Operating temperature (°C)	Case	
		(dB)	(kHz)	(dB)	(kHz)	(dB)			(kHz)	(dB)	(fo ± kHz)	impedance Zt (Ω//pF)			Recom-mendable transformer (see remark)
10M1B	2	3	±7.5	18	±25	-	-	0.5	1.5	35	+300 to +1000 40 -200 to -1000	3.0k//2.0	*4, *5	-40 to +80	HC-49/U
10M2B	4	3	±7.5	40	±25	-	-	1.0	2.5	40	±25 to ±300	3.0k//1.5	*4, *5	-40 to +80	H-3
10M2B2	4	3	±7.5	40	±25	-	-	1.0	2.5	65	+300 to +1000 80 -200 to -1000	3.0k//1.5 Zc : 5 pF	*4, *5	-40 to +80	(HC-49/U)x2

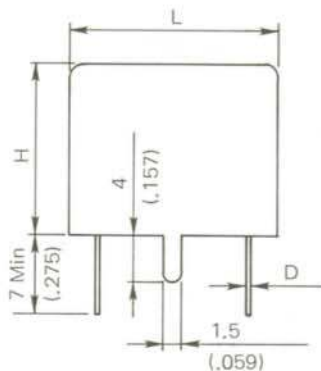
### 50.0 kHz CHANNEL SPACING

Type	No. of pole	Passband		Stopband			Max. ripple (dB)	Max. loss (dB)	Guaranteed attenuation		Termination		Operating temperature (°C)	Case	
		(dB)	(kHz)	(dB)	(kHz)	(dB)			(kHz)	(dB)	(fo ± kHz)	impedance Zt (Ω//pF)			Recom-mendable transformer (see below)
10M1A	2	3	±15	15	±50	-	-	0.5	1.5	30	+300 to +1000 40 -300 to -1000	5.0k//0	*6, *7	-40 to +80	HC-49/U
10M2A	4	3	±15	30	±40	-	-	1.0	2.5	30	±40 to ±300	5.5k//1.0	*6, *7	-40 to +80	H-3
10M2A2	4	3	±15	30	±40	-	-	1.0	2.5	65	+300 to +1000 80 -250 to -1000	5.5k//1.0 Zc : 0 pF	*6, *7	-40 to +80	(HC-49/U)x2

Outline drawing & matching transformer: See pages 39, 40

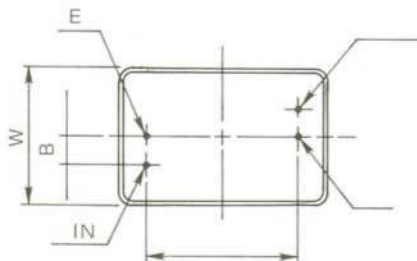
in mm (in inch)

(H-1) to (H-5)



	L	W	H	A	B	Dφ
H-1	11.0	8.5	11.5	7.4	2.0	0.3
H-2	13.4	8.5	11.0	9.8	2.0	0.3
H-3	15	12	15	9.0	2.5	0.43
H-4	18.5	12	15	13.4	2.5	0.43
H-5	23	12	15	17.8	2.5	0.43

(in mm)



	L	W	H	A	B	Dφ
H-1	.433	.335	.452	.291	.078	.012
H-2	.527	.335	.433	.386	.078	.012
H-3	.590	.472	.590	.354	.098	.017
H-4	.728	.472	.590	.527	.098	.017
H-5	.960	.472	.590	.701	.098	.017

(in inch)

# Crystal Filters

## HCM FILTERS Outline Drawing

in mm (in inch)

