	Etching gas of deep etching process				Etching gas of side wall surface protection process				Temperature of etching test piece (°C)		Anti-reflective film			Carbon-added silicon oxide		
	Second etching compound	Additive gas	Flow rate [1] (mL/min)	Metal (ppb by mass)	Fluoro-dithiethane	Second etching compound	Flow rate [2] (mL/min)	Metal (ppb by mass)	Deep etching process	Side wall surface protection process	Long diameter (nm)	Short diameter (nm)	Long diameter/Short diameter	Bowing part diameter (nm)	Bottom part diameter (nm)	Bowing part diameter/Bottom part diameter
Ex. 4-1	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-3	O_2	10/40	29	20	20	51	48	1.06	51	44	1.2
Ex. 4-2	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-3	O_2	15/35	36	20	20	50	48	1.04	50	45	1.1
Ex. 4-3	$C_4F_6 + O_2$	Ar	50 + 50/20	Less than 2	Sample 1-3	O_2	10/40	29	20	20	50	47	1.06	53	44	1.2
Ex. 4-4	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-3	O_2	10/40	29	20	40	51	49	1.04	52	45	1.2
Ex. 4-5	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-3	O_2	10/40	29	40	20	52	48	1.08	52	46	1.1
Ex. 4-6	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-3	O_2	10/40	29	40	40	51	50	1.02	55	46	1.2
Ex. 4-7	$C_4F_6 + O_2$	Sample 1-3	45 + 50/5	4	Sample 1-3	O_2	10/40	29	20	20	51	47	1.09	52	40	1.3
Comp. Ex. 4-1	$C_4F_6 + O_2$	None	50 + 50/0	Less than 2	Sample 1-1	O_2	10/40	592	40	40	53	42	1.26	58	35	1.7

1) The flow rates are the flow rates of the second etching compound and the additive gas. For example, a case where the flow rates of C_4F_6, the oxygen gas, and the additive gas are 50 mL/min, 50 mL/min, and 0 mL/min, respectively, is indicated by "50 + 50/0".

2) The flow rates are the flow rates of the fluoro-dithiethane and the second etching gas. For example, a case where the flow rates of the fluoro-dithiethane and the second etching gas are 10 mL/min and 40 mL/min, respectively, is indicated by "10/40".