Fields in the vertex	Variational derivative of Lagrangian by fields
$A_\mu \quad A_\nu$	$-p_1^\rho p_1^\rho g^{\mu\nu}$
$\bar{b}_{ap} \quad b_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + M_b \cdot \delta_{ab})$
$\bar{c}_{ap} \quad c_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + M_c \cdot \delta_{ab})$
$\bar{d}_{ap} \quad d_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + Md \cdot \delta_{ab})$
$\bar{e}_a \quad e_b$	$-p_1^\mu \gamma^\mu_{ac} \delta_{cb}$
$\bar{\mu}_a \quad \mu_b$	$-(p_1^\mu \gamma^\mu_{ab} + M_\mu \cdot \delta_{ab})$
$\bar{\tau}_a \quad \tau_b$	$-(p_1^\mu \gamma^\mu_{ab} + M_\tau \cdot \delta_{ab})$
$G_{\mu p} \quad G_{\nu q}$	$-p_1^\rho p_1^\rho g^{\mu\nu} \delta_{pq}$
$H \quad H$	$-({M_H}^2 - p_1^\mu p_1^\mu)$
${\bar{\nu}^e}_a \quad {\nu^e}_b$	$-p_1^\mu \gamma^\mu_{ac} \frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\mu}_a \quad {\nu^\mu}_b$	$-p_1^\mu \gamma^\mu_{ac} \frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\tau}_a \quad {\nu^\tau}_b$	$-p_1^\mu \gamma^\mu_{ac} \frac{(1-\gamma^5)_{cb}}{2}$
$\bar{s}_{ap} \quad s_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + M_s \cdot \delta_{ab})$
$\bar{t}_{ap} \quad t_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + M_t \cdot \delta_{ab})$
$\bar{u}_{ap} \quad u_{bq}$	$-\delta_{pq}(p_1^\mu \gamma^\mu_{ab} + Mu \cdot \delta_{ab})$
${W^+}_\mu \quad {W^-}_\nu$	$-g^{\mu\nu}(p_1^\rho p_1^\rho - {M_W}^2)$
$W^+_F \quad W^-_F$	$(p_1^\mu p_1^\mu - {M_W}^2)$
$Z_\mu \quad Z_\nu$	$-\frac{1}{{c_w}^2} g^{\mu\nu}({c_w}^2 \cdot p_1^\rho p_1^\rho - {M_W}^2)$
$Z_F \quad Z_F$	$\frac{1}{{c_w}^2}({c_w}^2 \cdot p_1^\mu p_1^\mu - {M_W}^2)$
$\sim {V^+}_\mu \quad \sim {V^-}_\nu$	$-\frac{1}{e^2}(2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_2 \cdot g^{\mu\nu} - e^2 \cdot M_V^2 \cdot g^{\mu\nu} + e^2 \cdot p_1^\rho p_1^\rho g^{\mu\nu} - e^2 \cdot p_1^\mu p_1^\nu)$
$\sim V_{1\mu} \quad \sim V_{1\nu}$	$-\frac{1}{e^2}(2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_2 \cdot g^{\mu\nu} + 2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_3 \cdot g^{\mu\nu} + 2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_4 \cdot g^{\mu\nu}$
	$-e^2 \cdot M_V^2 \cdot g^{\mu\nu} + e^2 \cdot p_1^\rho p_1^\rho g^{\mu\nu} - e^2 \cdot p_1^\mu p_1^\nu)$
$\sim V_{2\mu} \quad \sim V_{2\nu}$	$-\frac{1}{e^2}(2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_2 \cdot g^{\mu\nu} + 2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_3 \cdot g^{\mu\nu} - 2{M_W}^2 \cdot {s_w}^2 \cdot \lambda_4 \cdot g^{\mu\nu}$
	$-e^2 \cdot M_V^2 \cdot g^{\mu\nu} + e^2 \cdot p_1^\rho p_1^\rho g^{\mu\nu} - e^2 \cdot p_1^\mu p_1^\nu)$
$\sim\sim S \quad \sim\sim S$	$\frac{1}{e^2}(e^2 \cdot p_1^\mu p_1^\mu + 2e^2 M_S^2 - 4{M_W}^2 {s_w}^2 \lambda_{s\phi})$

Fields in the vertex	Variational derivative of Lagrangian by fields
$A_\mu \quad W^+{}_\nu \quad W^-{}_\rho$	$-e(p_2^\rho g^{\mu\nu} - p_2^\mu g^{\nu\rho} - p_3^\nu g^{\mu\rho} + p_3^\mu g^{\nu\rho} + p_1^\nu g^{\mu\rho} - p_1^\rho g^{\mu\nu})$
$A_\mu \quad W^+{}_\nu \quad W_F^-$	$i \cdot e \cdot M_W \cdot g^{\mu\nu}$
$A_\mu \quad W_F^+ \quad W^-{}_\nu$	$-i \cdot e \cdot M_W \cdot g^{\mu\nu}$
$A_\mu \quad W_F^+ \quad W_F^-$	$e(p_3^\mu - p_2^\mu)$
$A_\mu \quad \sim V^+{}_\nu \quad \sim V^-{}_\rho$	$-e(p_3^\mu g^{\nu\rho} - p_2^\mu g^{\nu\rho} - p_3^\nu g^{\mu\rho} + p_2^\rho g^{\mu\nu} - p_1^\rho g^{\mu\nu} + p_1^\nu g^{\mu\rho})$
$\bar{C}^A \quad C^{W+} \quad W^-{}_\mu$	$-e \cdot p_1^\mu$
$\bar{C}^A \quad C^{W-} \quad W^+{}_\mu$	$e \cdot p_1^\mu$
$\bar{b}_{ap} \quad b_{bq} \quad A_\mu$	$\frac{1}{3} e \delta_{pq} \gamma^\mu_{ac} \cdot \delta_{cb}$
$\bar{b}_{ap} \quad b_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq} \gamma^\mu_{ab}$
$\bar{b}_{ap} \quad b_{bq} \quad H$	$-\frac{1}{2} \frac{e \cdot M_b}{M_W \cdot s_w} \delta_{pq} \cdot \delta_{ab}$
$\bar{b}_{ap} \quad b_{bq} \quad Z_\mu$	$\frac{1}{6} \frac{e}{c_w \cdot s_w} \delta_{pq} \gamma^\mu_{ac} (2{c_w}^2 \cdot \frac{(1-\gamma^5)_{cb}}{2} + \frac{(1-\gamma^5)_{cb}}{2} - 2{s_w}^2 \cdot \frac{(1+\gamma^5)_{cb}}{2})$
$\bar{b}_{ap} \quad b_{bq} \quad Z_F$	$-\frac{1}{2} \frac{i \cdot e \cdot M_b}{M_W \cdot s_w} \delta_{pq} \cdot \gamma^5_{ab}$
$\bar{b}_{ap} \quad t_{bq} \quad W^-{}_\mu$	$-\frac{1}{2} \frac{e \cdot \sqrt{2}}{s_w} \cdot \delta_{pq} \gamma^\mu_{ac} \frac{(1-\gamma^5)_{cb}}{2}$
$\bar{b}_{ap} \quad t_{bq} \quad W_F^-$	$-\frac{1}{2} \frac{i \cdot e \cdot \sqrt{2}}{M_W \cdot s_w} \delta_{pq} (M_b \cdot \frac{(1-\gamma^5)_{ab}}{2} - M_t \cdot \frac{(1+\gamma^5)_{ab}}{2})$
$\bar{c}_{ap} \quad c_{bq} \quad A_\mu$	$-\frac{2}{3} e \delta_{pq} \gamma^\mu_{ac} \cdot \delta_{cb}$
$\bar{c}_{ap} \quad c_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq} \gamma^\mu_{ab}$
$\bar{c}_{ap} \quad c_{bq} \quad H$	$-\frac{1}{2} \frac{e \cdot M_c}{M_W \cdot s_w} \delta_{pq} \cdot \delta_{ab}$
$\bar{c}_{ap} \quad c_{bq} \quad Z_\mu$	$-\frac{1}{6} \frac{e}{c_w \cdot s_w} \delta_{pq} \gamma^\mu_{ac} (4{c_w}^2 \cdot \frac{(1-\gamma^5)_{cb}}{2} - \frac{(1-\gamma^5)_{cb}}{2} - 4{s_w}^2 \cdot \frac{(1+\gamma^5)_{cb}}{2})$
$\bar{c}_{ap} \quad c_{bq} \quad Z_F$	$\frac{1}{2} \frac{i \cdot e \cdot M_c}{M_W \cdot s_w} \delta_{pq} \cdot \gamma^5_{ab}$
$\bar{c}_{ap} \quad s_{bq} \quad W^+{}_\mu$	$-\frac{1}{2} \frac{e \cdot \sqrt{2}}{s_w} \cdot \delta_{pq} \gamma^\mu_{ac} \frac{(1-\gamma^5)_{cb}}{2}$
$\bar{c}_{ap} \quad s_{bq} \quad W_F^+$	$\frac{1}{2} \frac{i \cdot e \cdot \sqrt{2}}{M_W \cdot s_w} \delta_{pq} (M_s \cdot \frac{(1+\gamma^5)_{ab}}{2} - M_c \cdot \frac{(1-\gamma^5)_{ab}}{2})$
$\bar{d}_{ap} \quad d_{bq} \quad A_\mu$	$\frac{1}{3} e \delta_{pq} \gamma^\mu_{ac} \cdot \delta_{cb}$
$\bar{d}_{ap} \quad d_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq} \gamma^\mu_{ab}$
$\bar{d}_{ap} \quad d_{bq} \quad H$	$-\frac{1}{2} \frac{e \cdot Md}{M_W \cdot s_w} \delta_{pq} \cdot \delta_{ab}$
$\bar{d}_{ap} \quad d_{bq} \quad Z_\mu$	$\frac{1}{6} \frac{e}{c_w \cdot s_w} \delta_{pq} \gamma^\mu_{ac} (2{c_w}^2 \cdot \frac{(1-\gamma^5)_{cb}}{2} + \frac{(1-\gamma^5)_{cb}}{2} - 2{s_w}^2 \cdot \frac{(1+\gamma^5)_{cb}}{2})$

Fields in the vertex	Variational derivative of Lagrangian by fields
$\bar{d}_{ap} \quad d_{bq} \quad Z_F$	$-\frac{1}{2}\frac{i\cdot e\cdot Md}{M_W\cdot s_w}\delta_{pq}\cdot\gamma^5_{ab}$
$\bar{d}_{ap} \quad u_{bq} \quad {W^-}_\mu$	$-\frac{1}{2}\frac{e\cdot\sqrt{2}}{s_w}\cdot\delta_{pq}\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{d}_{ap} \quad u_{bq} \quad W^-_F$	$-\frac{1}{2}\frac{i\cdot e\cdot\sqrt{2}}{M_W\cdot s_w}\delta_{pq}(Md\cdot\frac{(1-\gamma^5)_{ab}}{2}-Mu\cdot\frac{(1+\gamma^5)_{ab}}{2})$
$\bar{e}_a \quad e_b \quad A_\mu$	$e\gamma^\mu_{ac}\cdot\delta_{cb}$
$\bar{e}_a \quad e_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w\cdot s_w}\gamma^\mu_{ac}((1-2{c_w}^2)\cdot\frac{(1-\gamma^5)_{cb}}{2}+2{s_w}^2\cdot\frac{(1+\gamma^5)_{cb}}{2})$
$\bar{e}_a \quad {\nu^e}_b \quad {W^-}_\mu$	$-\frac{1}{2}\frac{e\cdot\sqrt{2}}{s_w}\cdot\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{\mu}_a \quad \mu_b \quad A_\mu$	$e\gamma^\mu_{ac}\cdot\delta_{cb}$
$\bar{\mu}_a \quad \mu_b \quad H$	$-\frac{1}{2}\frac{e\cdot M_\mu}{M_W\cdot s_w}\cdot\delta_{ab}$
$\bar{\mu}_a \quad \mu_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w\cdot s_w}\gamma^\mu_{ac}((1-2{c_w}^2)\cdot\frac{(1-\gamma^5)_{cb}}{2}+2{s_w}^2\cdot\frac{(1+\gamma^5)_{cb}}{2})$
$\bar{\mu}_a \quad \mu_b \quad Z_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_\mu}{M_W\cdot s_w}\cdot\gamma^5_{ab}$
$\bar{\mu}_a \quad {\nu^\mu}_b \quad {W^-}_\mu$	$-\frac{1}{2}\frac{e\cdot\sqrt{2}}{s_w}\cdot\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{\mu}_a \quad {\nu^\mu}_b \quad W^-_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_\mu\cdot\sqrt{2}}{M_W\cdot s_w}\cdot\frac{(1-\gamma^5)_{ab}}{2}$
$\bar{\tau}_a \quad \tau_b \quad A_\mu$	$e\gamma^\mu_{ac}\cdot\delta_{cb}$
$\bar{\tau}_a \quad \tau_b \quad H$	$-\frac{1}{2}\frac{e\cdot M_\tau}{M_W\cdot s_w}\cdot\delta_{ab}$
$\bar{\tau}_a \quad \tau_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w\cdot s_w}\gamma^\mu_{ac}((1-2{c_w}^2)\cdot\frac{(1-\gamma^5)_{cb}}{2}+2{s_w}^2\cdot\frac{(1+\gamma^5)_{cb}}{2})$
$\bar{\tau}_a \quad \tau_b \quad Z_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_\tau}{M_W\cdot s_w}\cdot\gamma^5_{ab}$
$\bar{\tau}_a \quad {\nu^\tau}_b \quad {W^-}_\mu$	$-\frac{1}{2}\frac{e\cdot\sqrt{2}}{s_w}\cdot\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{\tau}_a \quad {\nu^\tau}_b \quad W^-_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_\tau\cdot\sqrt{2}}{M_W\cdot s_w}\cdot\frac{(1-\gamma^5)_{ab}}{2}$
$G_{\mu p} \quad G_{\nu q} \quad G_{\rho r}$	$g_s f_{pqr}(p^\nu_3 g^{\mu\rho}-p^\mu_3 g^{\nu\rho}+p^\rho_1 g^{\mu\nu}-p^\nu_1 g^{\mu\rho}-p^\rho_2 g^{\mu\nu}+p^\mu_2 g^{\nu\rho})$
${\bar{C}^G}_p \quad {C^G}_q \quad G_{\mu r}$	$g_s\cdot p^\mu_2 f_{pqr}$
$H \quad H \quad H$	$-\frac{3}{2}\frac{e\cdot {M_H}^2}{M_W\cdot s_w}$
$H \quad {W^+}_\mu \quad {W^-}_\nu$	$\frac{e\cdot M_W}{s_w}\cdot g^{\mu\nu}$
$H \quad {W^+}_\mu \quad W^-_F$	$\frac{1}{2}\frac{i\cdot e}{s_w}(p^\mu_3-p^\mu_1)$
$H \quad W^+_F \quad {W^-}_\mu$	$-\frac{1}{2}\frac{i\cdot e}{s_w}(p^\mu_1-p^\mu_2)$
$H \quad W^+_F \quad W^-_F$	$-\frac{1}{2}\frac{e\cdot {M_H}^2}{M_W\cdot s_w}$

Fields in the vertex	Variational derivative of Lagrangian by fields
$H \quad Z_\mu \quad Z_\nu$	$\frac{e \cdot M_W}{{c_w}^2 \cdot s_w} \cdot g^{\mu\nu}$
$H \quad Z_\mu \quad Z_F$	$-\frac{1}{2}\frac{i \cdot e}{c_w \cdot s_w}(p_1^\mu - p_3^\mu)$
$H \quad Z_F \quad Z_F$	$-\frac{1}{2}\frac{e \cdot {M_H}^2}{M_W \cdot s_w}$
$H \quad \sim {V^+}_\mu \quad \sim {V^-}_\nu$	$-2\frac{M_W \cdot s_w \cdot \lambda_2}{e} \cdot g^{\mu\nu}$
$H \quad \sim V_{1\mu} \quad \sim V_{1\nu}$	$-2\frac{M_W \cdot s_w}{e} g^{\mu\nu}(\lambda_2 + \lambda_3 + \lambda_4)$
$H \quad \sim V_{2\mu} \quad \sim V_{2\nu}$	$-2\frac{M_W \cdot s_w}{e} g^{\mu\nu}(\lambda_2 + \lambda_3 - \lambda_4)$
$H \quad \sim\sim S \quad \sim\sim S$	$-4\frac{M_W \cdot s_w \cdot \lambda_{s\phi}}{e}$
${\bar{\nu}^e}_a \quad e_b \quad {W^+}_\mu$	$-\frac{1}{2}\frac{e \cdot \sqrt{2}}{s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^e}_a \quad {\nu^e}_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w \cdot s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\mu}_a \quad \mu_b \quad {W^+}_\mu$	$-\frac{1}{2}\frac{e \cdot \sqrt{2}}{s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\mu}_a \quad \mu_b \quad W^+_F$	$\frac{1}{2}\frac{i \cdot e \cdot M_\mu \cdot \sqrt{2}}{M_W \cdot s_w} \cdot \frac{(1+\gamma^5)_{ab}}{2}$
${\bar{\nu}^\mu}_a \quad {\nu^\mu}_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w \cdot s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\tau}_a \quad \tau_b \quad {W^+}_\mu$	$-\frac{1}{2}\frac{e \cdot \sqrt{2}}{s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
${\bar{\nu}^\tau}_a \quad \tau_b \quad W^+_F$	$\frac{1}{2}\frac{i \cdot e \cdot M_\tau \cdot \sqrt{2}}{M_W \cdot s_w} \cdot \frac{(1+\gamma^5)_{ab}}{2}$
${\bar{\nu}^\tau}_a \quad {\nu^\tau}_b \quad Z_\mu$	$-\frac{1}{2}\frac{e}{c_w \cdot s_w} \cdot \gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{s}_{ap} \quad c_{bq} \quad {W^-}_\mu$	$-\frac{1}{2}\frac{e \cdot \sqrt{2}}{s_w} \cdot \delta_{pq}\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{s}_{ap} \quad c_{bq} \quad W^-_F$	$-\frac{1}{2}\frac{i \cdot e \cdot \sqrt{2}}{M_W \cdot s_w}\delta_{pq}(M_s \cdot \frac{(1-\gamma^5)_{ab}}{2} - M_c \cdot \frac{(1+\gamma^5)_{ab}}{2})$
$\bar{s}_{ap} \quad s_{bq} \quad A_\mu$	$\frac{1}{3}e\delta_{pq}\gamma^\mu_{ac} \cdot \delta_{cb}$
$\bar{s}_{ap} \quad s_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq}\gamma^\mu_{ab}$
$\bar{s}_{ap} \quad s_{bq} \quad H$	$-\frac{1}{2}\frac{e \cdot M_s}{M_W \cdot s_w}\delta_{pq} \cdot \delta_{ab}$
$\bar{s}_{ap} \quad s_{bq} \quad Z_\mu$	$\frac{1}{6}\frac{e}{c_w \cdot s_w}\delta_{pq}\gamma^\mu_{ac}(2{c_w}^2 \cdot \frac{(1-\gamma^5)_{cb}}{2} + \frac{(1-\gamma^5)_{cb}}{2} - 2{s_w}^2 \cdot \frac{(1+\gamma^5)_{cb}}{2})$
$\bar{s}_{ap} \quad s_{bq} \quad Z_F$	$-\frac{1}{2}\frac{i \cdot e \cdot M_s}{M_W \cdot s_w}\delta_{pq} \cdot \gamma^5_{ab}$
$\bar{t}_{ap} \quad b_{bq} \quad {W^+}_\mu$	$-\frac{1}{2}\frac{e \cdot \sqrt{2}}{s_w} \cdot \delta_{pq}\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{t}_{ap} \quad b_{bq} \quad W^+_F$	$\frac{1}{2}\frac{i \cdot e \cdot \sqrt{2}}{M_W \cdot s_w}\delta_{pq}(M_b \cdot \frac{(1+\gamma^5)_{ab}}{2} - M_t \cdot \frac{(1-\gamma^5)_{ab}}{2})$
$\bar{t}_{ap} \quad t_{bq} \quad A_\mu$	$-\frac{2}{3}e\delta_{pq}\gamma^\mu_{ac} \cdot \delta_{cb}$

Fields in the vertex	Variational derivative of Lagrangian by fields
$\bar{t}_{ap} \quad t_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq}\gamma^\mu_{ab}$
$\bar{t}_{ap} \quad t_{bq} \quad H$	$-\frac{1}{2}\frac{e\cdot M_t}{M_W\cdot s_w}\delta_{pq}\cdot\delta_{ab}$
$\bar{t}_{ap} \quad t_{bq} \quad Z_\mu$	$-\frac{1}{6}\frac{e}{c_w\cdot s_w}\delta_{pq}\gamma^\mu_{ac}(4{c_w}^2\cdot\frac{(1-\gamma^5)_{cb}}{2}-\frac{(1-\gamma^5)_{cb}}{2}-4{s_w}^2\cdot\frac{(1+\gamma^5)_{cb}}{2})$
$\bar{t}_{ap} \quad t_{bq} \quad Z_F$	$\frac{1}{2}\frac{i\cdot e\cdot M_t}{M_W\cdot s_w}\delta_{pq}\cdot\gamma^5_{ab}$
$\bar{u}_{ap} \quad d_{bq} \quad {W^+}_\mu$	$-\frac{1}{2}\frac{e\cdot\sqrt{2}}{s_w}\cdot\delta_{pq}\gamma^\mu_{ac}\frac{(1-\gamma^5)_{cb}}{2}$
$\bar{u}_{ap} \quad d_{bq} \quad W^+_F$	$\frac{1}{2}\frac{i\cdot e\cdot\sqrt{2}}{M_W\cdot s_w}\delta_{pq}(Md\cdot\frac{(1+\gamma^5)_{ab}}{2}-Mu\cdot\frac{(1-\gamma^5)_{ab}}{2})$
$\bar{u}_{ap} \quad u_{bq} \quad A_\mu$	$-\frac{2}{3}e\delta_{pq}\gamma^\mu_{ac}\cdot\delta_{cb}$
$\bar{u}_{ap} \quad u_{bq} \quad G_{\mu r}$	$g_s \cdot \lambda^r_{pq}\gamma^\mu_{ab}$
$\bar{u}_{ap} \quad u_{bq} \quad H$	$-\frac{1}{2}\frac{e\cdot Mu}{M_W\cdot s_w}\delta_{pq}\cdot\delta_{ab}$
$\bar{u}_{ap} \quad u_{bq} \quad Z_\mu$	$-\frac{1}{6}\frac{e}{c_w\cdot s_w}\delta_{pq}\gamma^\mu_{ac}(4{c_w}^2\cdot\frac{(1-\gamma^5)_{cb}}{2}-\frac{(1-\gamma^5)_{cb}}{2}-4{s_w}^2\cdot\frac{(1+\gamma^5)_{cb}}{2})$
$\bar{u}_{ap} \quad u_{bq} \quad Z_F$	$\frac{1}{2}\frac{i\cdot e\cdot Mu}{M_W\cdot s_w}\delta_{pq}\cdot\gamma^5_{ab}$
${W^+}_\mu \quad {W^-}_\nu \quad Z_\rho$	$-\frac{c_w\cdot e}{s_w}(p_1^\nu g^{\mu\rho}-p_1^\rho g^{\mu\nu}-p_2^\mu g^{\nu\rho}+p_2^\rho g^{\mu\nu}+p_3^\mu g^{\nu\rho}-p_3^\nu g^{\mu\rho})$
${W^+}_\mu \quad W^-_F \quad Z_\nu$	$-\frac{i\cdot e\cdot M_W\cdot s_w}{c_w}\cdot g^{\mu\nu}$
${W^+}_\mu \quad W^-_F \quad Z_F$	$-\frac{1}{2}\frac{e}{s_w}(p_2^\mu-p_3^\mu)$
${W^+}_\mu \quad \sim{V^-}_\nu \quad \sim V_{1\rho}$	$-\frac{1}{2}\frac{i\cdot e}{s_w}(p_2^\mu g^{\nu\rho}-p_3^\mu g^{\nu\rho}-p_2^\rho g^{\mu\nu}+p_3^\nu g^{\mu\rho}-p_1^\nu g^{\mu\rho}+p_1^\rho g^{\mu\nu})$
${W^+}_\mu \quad \sim{V^-}_\nu \quad \sim V_{2\rho}$	$\frac{1}{2}\frac{e}{s_w}(p_2^\mu g^{\nu\rho}-p_3^\mu g^{\nu\rho}-p_2^\rho g^{\mu\nu}+p_3^\nu g^{\mu\rho}-p_1^\nu g^{\mu\rho}+p_1^\rho g^{\mu\nu})$
$\bar{C}^{W+} \quad C^Z \quad {W^-}_\mu$	$e\cdot p_1^\mu$
$\bar{C}^{W+} \quad C^Z \quad W^-_F$	$-i\cdot e\cdot M_W$
$\bar{C}^{W+} \quad C^{W-} \quad A_\mu$	$-e\cdot p_1^\mu$
$\bar{C}^{W+} \quad C^{W-} \quad H$	$-\frac{1}{2}\frac{e\cdot M_W}{s_w}$
$\bar{C}^{W+} \quad C^{W-} \quad Z_\mu$	$-\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^{W+} \quad C^{W-} \quad Z_F$	$\frac{1}{2}\frac{i\cdot e\cdot M_W}{s_w}$
$\bar{C}^{W+} \quad C^Z \quad {W^-}_\mu$	$\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^{W+} \quad C^Z \quad W^-_F$	$\frac{1}{2}\frac{i\cdot(1-2{c_w}^2)\cdot e\cdot M_W}{c_w\cdot s_w}$
$W^+_F \quad {W^-}_\mu \quad Z_\nu$	$\frac{i\cdot e\cdot M_W\cdot s_w}{c_w}\cdot g^{\mu\nu}$

Fields in the vertex	Variational derivative of Lagrangian by fields
$W^+_F \quad {W^-}_\mu \quad Z_F$	$-\frac{1}{2}\frac{e}{s_w}(p_3^\mu - p_1^\mu)$
$W^+_F \quad W^-_F \quad Z_\mu$	$-\frac{1}{2}\frac{(1-2{c_w}^2)\cdot e}{c_w\cdot s_w}(p_2^\mu - p_1^\mu)$
$W^+_F \quad \sim {V^-}_\mu \quad \sim V_{1\nu}$	$-\frac{M_W\cdot s_w}{e}g^{\mu\nu}(\lambda_3+\lambda_4)$
$W^+_F \quad \sim {V^-}_\mu \quad \sim V_{2\nu}$	$-\frac{i\cdot M_W\cdot s_w}{e}g^{\mu\nu}(\lambda_3-\lambda_4)$
${W^-}_\mu \quad \sim {V^+}_\nu \quad \sim V_{1\rho}$	$\frac{1}{2}\frac{i\cdot e}{s_w}(p_3^\mu g^{\nu\rho} - p_2^\mu g^{\nu\rho} - p_3^\nu g^{\mu\rho} + p_2^\rho g^{\mu\nu} - p_1^\rho g^{\mu\nu} + p_1^\nu g^{\mu\rho})$
${W^-}_\mu \quad \sim {V^+}_\nu \quad \sim V_{2\rho}$	$\frac{1}{2}\frac{e}{s_w}(p_3^\mu g^{\nu\rho} - p_2^\mu g^{\nu\rho} - p_3^\nu g^{\mu\rho} + p_2^\rho g^{\mu\nu} - p_1^\rho g^{\mu\nu} + p_1^\nu g^{\mu\rho})$
$\bar{C}^{W-} \quad C^Z \quad {W^+}_\mu$	$-e\cdot p_1^\mu$
$\bar{C}^{W-} \quad C^Z \quad W^+_F$	$i\cdot e\cdot M_W$
$\bar{C}^{W-} \quad C^{W+} \quad A_\mu$	$e\cdot p_1^\mu$
$\bar{C}^{W-} \quad C^{W+} \quad H$	$-\frac{1}{2}\frac{e\cdot M_W}{s_w}$
$\bar{C}^{W-} \quad C^{W+} \quad Z_\mu$	$\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^{W-} \quad C^{W+} \quad Z_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_W}{s_w}$
$\bar{C}^{W-} \quad C^Z \quad {W^+}_\mu$	$-\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^{W-} \quad C^Z \quad W^+_F$	$-\frac{1}{2}\frac{i\cdot(1-2{c_w}^2)\cdot e\cdot M_W}{c_w\cdot s_w}$
$W^-_F \quad \sim {V^+}_\mu \quad \sim V_{1\nu}$	$-\frac{M_W\cdot s_w}{e}g^{\mu\nu}(\lambda_3+\lambda_4)$
$W^-_F \quad \sim {V^+}_\mu \quad \sim V_{2\nu}$	$\frac{i\cdot M_W\cdot s_w}{e}g^{\mu\nu}(\lambda_3-\lambda_4)$
$Z_\mu \quad \sim {V^+}_\nu \quad \sim {V^-}_\rho$	$\frac{1}{2}\frac{(1-2{c_w}^2)\cdot e}{c_w\cdot s_w}(p_3^\mu g^{\nu\rho} - p_2^\mu g^{\nu\rho} - p_3^\nu g^{\mu\rho} + p_2^\rho g^{\mu\nu} - p_1^\rho g^{\mu\nu} + p_1^\nu g^{\mu\rho})$
$Z_\mu \quad \sim V_{1\nu} \quad \sim V_{2\rho}$	$\frac{1}{2}\frac{i\cdot e}{c_w\cdot s_w}(p_2^\mu g^{\nu\rho} - p_3^\mu g^{\nu\rho} - p_2^\rho g^{\mu\nu} + p_3^\nu g^{\mu\rho} - p_1^\nu g^{\mu\rho} + p_1^\rho g^{\mu\nu})$
$\bar{C}^Z \quad C^{W+} \quad {W^-}_\mu$	$-\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^Z \quad C^{W+} \quad W^-_F$	$\frac{1}{2}\frac{i\cdot e\cdot M_W}{c_w\cdot s_w}$
$\bar{C}^Z \quad C^{W-} \quad {W^+}_\mu$	$\frac{c_w\cdot e}{s_w}\cdot p_1^\mu$
$\bar{C}^Z \quad C^{W-} \quad W^+_F$	$-\frac{1}{2}\frac{i\cdot e\cdot M_W}{c_w\cdot s_w}$
$\bar{C}^Z \quad C^Z \quad H$	$-\frac{1}{2}\frac{e\cdot M_W}{{c_w}^2\cdot s_w}$
$Z_F \quad \sim V_{1\mu} \quad \sim V_{2\nu}$	$-2\frac{M_W\cdot s_w\cdot\lambda_4}{e}\cdot g^{\mu\nu}$
$A_\mu \quad A_\nu \quad {W^+}_\rho \quad {W^-}_\sigma$	$-e^2(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\rho}g^{\nu\sigma} - g^{\mu\sigma}g^{\nu\rho})$

Fields in the vertex	Variational derivative of Lagrangian by fields
$A_\mu \quad A_\nu \quad W^+_F \quad W^-_F$	$2e^2 \cdot g^{\mu\nu}$
$A_\mu \quad A_\nu \quad \sim V^+{}_\rho \quad \sim V^-{}_\sigma$	$-e^2(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad H \quad W^+{}_\nu \quad W^-_F$	$\frac{1}{2}\frac{i\cdot e^2}{s_w} \cdot g^{\mu\nu}$
$A_\mu \quad H \quad W^+_F \quad W^-{}_\nu$	$-\frac{1}{2}\frac{i\cdot e^2}{s_w} \cdot g^{\mu\nu}$
$A_\mu \quad W^+{}_\nu \quad W^-{}_\rho \quad Z_\sigma$	$-\frac{c_w\cdot e^2}{s_w}(2g^{\mu\sigma}g^{\nu\rho} - g^{\mu\nu}g^{\rho\sigma} - g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad W^+{}_\nu \quad W^-_F \quad Z_F$	$-\frac{1}{2}\frac{e^2}{s_w} \cdot g^{\mu\nu}$
$A_\mu \quad W^+{}_\nu \quad \sim V^-{}_\rho \quad \sim V_{1\sigma}$	$-\frac{1}{2}\frac{i\cdot e^2}{s_w}(g^{\mu\nu}g^{\rho\sigma} - 2g^{\mu\sigma}g^{\nu\rho} + g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad W^+{}_\nu \quad \sim V^-{}_\rho \quad \sim V_{2\sigma}$	$\frac{1}{2}\frac{e^2}{s_w}(g^{\mu\nu}g^{\rho\sigma} - 2g^{\mu\sigma}g^{\nu\rho} + g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad W^+_F \quad W^-{}_\nu \quad Z_F$	$-\frac{1}{2}\frac{e^2}{s_w} \cdot g^{\mu\nu}$
$A_\mu \quad W^+_F \quad W^-_F \quad Z_\nu$	$-\frac{(1-2{c_w}^2)\cdot e^2}{c_w\cdot s_w} \cdot g^{\mu\nu}$
$A_\mu \quad W^-{}_\nu \quad \sim V^+{}_\rho \quad \sim V_{1\sigma}$	$\frac{1}{2}\frac{i\cdot e^2}{s_w}(g^{\mu\nu}g^{\rho\sigma} - 2g^{\mu\sigma}g^{\nu\rho} + g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad W^-{}_\nu \quad \sim V^+{}_\rho \quad \sim V_{2\sigma}$	$\frac{1}{2}\frac{e^2}{s_w}(g^{\mu\nu}g^{\rho\sigma} - 2g^{\mu\sigma}g^{\nu\rho} + g^{\mu\rho}g^{\nu\sigma})$
$A_\mu \quad Z_\nu \quad \sim V^+{}_\rho \quad \sim V^-{}_\sigma$	$\frac{1}{2}\frac{(1-2{c_w}^2)\cdot e^2}{c_w\cdot s_w}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$G_{\mu p} \quad G_{\nu q} \quad G_{\rho r} \quad G_{\sigma s}$	${g_s}^2(g^{\mu\rho}g^{\nu\sigma}f_{pqt}f_{rst} - g^{\mu\sigma}g^{\nu\rho}f_{pqt}f_{rst} + g^{\mu\nu}g^{\rho\sigma}f_{prt}f_{qst}$
	$-g^{\mu\sigma}g^{\nu\rho}f_{prt}f_{qst} + g^{\mu\nu}g^{\rho\sigma}f_{pst}f_{qrt} - g^{\mu\rho}g^{\nu\sigma}f_{pst}f_{qrt})$
$H \quad H \quad H \quad H$	$-\frac{3}{4}\frac{e^2\cdot {M_H}^2}{{M_W}^2\cdot {s_w}^2}$
$H \quad H \quad W^+{}_\mu \quad W^-{}_\nu$	$\frac{1}{2}\frac{e^2}{{s_w}^2} \cdot g^{\mu\nu}$
$H \quad H \quad W^+_F \quad W^-_F$	$-\frac{1}{4}\frac{e^2\cdot {M_H}^2}{{M_W}^2\cdot {s_w}^2}$
$H \quad H \quad Z_\mu \quad Z_\nu$	$\frac{1}{2}\frac{e^2}{{c_w}^2\cdot {s_w}^2} \cdot g^{\mu\nu}$
$H \quad H \quad Z_F \quad Z_F$	$-\frac{1}{4}\frac{e^2\cdot {M_H}^2}{{M_W}^2\cdot {s_w}^2}$
$H \quad H \quad \sim V^+{}_\mu \quad \sim V^-{}_\nu$	$-\lambda_2 \cdot g^{\mu\nu}$
$H \quad H \quad \sim V_{1\mu} \quad \sim V_{1\nu}$	$-g^{\mu\nu}(\lambda_2 + \lambda_3 + \lambda_4)$
$H \quad H \quad \sim V_{2\mu} \quad \sim V_{2\nu}$	$-g^{\mu\nu}(\lambda_2 + \lambda_3 - \lambda_4)$
$H \quad H \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{s\phi}$
$H \quad W^+{}_\mu \quad W^-_F \quad Z_\nu$	$-\frac{1}{2}\frac{i\cdot e^2}{c_w} \cdot g^{\mu\nu}$

Fields in the vertex	Variational derivative of Lagrangian by fields
$H \quad W_F^+ \quad W^-{}_\mu \quad Z_\nu$	$\frac{1}{2}\frac{i \cdot e^2}{c_w} \cdot g^{\mu\nu}$
$H \quad W_F^+ \quad \sim V^-{}_\mu \quad \sim V_{1\nu}$	$-\frac{1}{2} g^{\mu\nu}(\lambda_3+\lambda_4)$
$H \quad W_F^+ \quad \sim V^-{}_\mu \quad \sim V_{2\nu}$	$-\frac{1}{2} i g^{\mu\nu}(\lambda_3-\lambda_4)$
$H \quad W_F^- \quad \sim V^+{}_\mu \quad \sim V_{1\nu}$	$-\frac{1}{2} g^{\mu\nu}(\lambda_3+\lambda_4)$
$H \quad W_F^- \quad \sim V^+{}_\mu \quad \sim V_{2\nu}$	$\frac{1}{2} i g^{\mu\nu}(\lambda_3-\lambda_4)$
$H \quad Z_F \quad \sim V_{1\mu} \quad \sim V_{2\nu}$	$-\lambda_4 \cdot g^{\mu\nu}$
$W^+{}_\mu \quad W^+{}_\nu \quad W^-{}_\rho \quad W^-{}_\sigma$	$\frac{e^2}{{s_w}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$W^+{}_\mu \quad W_F^+ \quad W^-{}_\nu \quad W_F^-$	$\frac{1}{2}\frac{e^2}{{s_w}^2} \cdot g^{\mu\nu}$
$W^+{}_\mu \quad W^-{}_\nu \quad Z_\rho \quad Z_\sigma$	$-\frac{{c_w}^2 \cdot e^2}{{s_w}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\rho}g^{\nu\sigma} - g^{\mu\sigma}g^{\nu\rho})$
$W^+{}_\mu \quad W^-{}_\nu \quad Z_F \quad Z_F$	$\frac{1}{2}\frac{e^2}{{s_w}^2} \cdot g^{\mu\nu}$
$W^+{}_\mu \quad W^-{}_\nu \quad \sim V^+{}_\rho \quad \sim V^-{}_\sigma$	$-\frac{1}{2}\frac{e^2}{{s_w}^2}(g^{\mu\nu}g^{\rho\sigma} - 2g^{\mu\rho}g^{\nu\sigma} + g^{\mu\sigma}g^{\nu\rho})$
$W^+{}_\mu \quad W^-{}_\nu \quad \sim V_{1\rho} \quad \sim V_{1\sigma}$	$-\frac{1}{4}\frac{e^2}{{s_w}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$W^+{}_\mu \quad W^-{}_\nu \quad \sim V_{1\rho} \quad \sim V_{2\sigma}$	$\frac{3}{4}\frac{i \cdot e^2}{{s_w}^2}(g^{\mu\rho}g^{\nu\sigma} - g^{\mu\sigma}g^{\nu\rho})$
$W^+{}_\mu \quad W^-{}_\nu \quad \sim V_{2\rho} \quad \sim V_{2\sigma}$	$-\frac{1}{4}\frac{e^2}{{s_w}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$W^+{}_\mu \quad W_F^- \quad Z_\nu \quad Z_F$	$\frac{1}{2}\frac{e^2}{c_w} \cdot g^{\mu\nu}$
$W^+{}_\mu \quad Z_\nu \quad \sim V^-{}_\rho \quad \sim V_{1\sigma}$	$\frac{1}{4}\frac{i \cdot e^2}{c_w \cdot {s_w}^2}(2{s_w}^2 \cdot g^{\mu\nu}g^{\rho\sigma} + 4{c_w}^2 \cdot g^{\mu\rho}g^{\nu\sigma} - g^{\mu\rho}g^{\nu\sigma} - 2{c_w}^2 \cdot g^{\mu\sigma}g^{\nu\rho}$ $-g^{\mu\sigma}g^{\nu\rho})$
$W^+{}_\mu \quad Z_\nu \quad \sim V^-{}_\rho \quad \sim V_{2\sigma}$	$-\frac{1}{4}\frac{e^2}{c_w \cdot {s_w}^2}(2{s_w}^2 \cdot g^{\mu\nu}g^{\rho\sigma} + 4{c_w}^2 \cdot g^{\mu\rho}g^{\nu\sigma} - g^{\mu\rho}g^{\nu\sigma} - 2{c_w}^2 \cdot g^{\mu\sigma}g^{\nu\rho}$ $-g^{\mu\sigma}g^{\nu\rho})$
$W_F^+ \quad W_F^+ \quad W_F^- \quad W_F^-$	$-\frac{1}{2}\frac{e^2 \cdot {M_H}^2}{{M_W}^2 \cdot {s_w}^2}$
$W_F^+ \quad W_F^+ \quad \sim V^-{}_\mu \quad \sim V^-{}_\nu$	$-2\lambda_4 \cdot g^{\mu\nu}$
$W_F^+ \quad W^-{}_\mu \quad Z_\nu \quad Z_F$	$\frac{1}{2}\frac{e^2}{c_w} \cdot g^{\mu\nu}$
$W_F^+ \quad W_F^- \quad Z_\mu \quad Z_\nu$	$\frac{1}{2}\frac{(1-2{c_w}^2)^2 \cdot e^2}{{c_w}^2 \cdot {s_w}^2} \cdot g^{\mu\nu}$
$W_F^+ \quad W_F^- \quad Z_F \quad Z_F$	$-\frac{1}{4}\frac{e^2 \cdot {M_H}^2}{{M_W}^2 \cdot {s_w}^2}$
$W_F^+ \quad W_F^- \quad \sim V^+{}_\mu \quad \sim V^-{}_\nu$	$-g^{\mu\nu}(\lambda_2+\lambda_3)$

Fields in the vertex	Variational derivative of Lagrangian by fields
$W_F^+ \quad W_F^- \quad \sim V_{1\mu} \quad \sim V_{1\nu}$	$-\lambda_2 \cdot g^{\mu\nu}$
$W_F^+ \quad W_F^- \quad \sim V_{2\mu} \quad \sim V_{2\nu}$	$-\lambda_2 \cdot g^{\mu\nu}$
$W_F^+ \quad W_F^- \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{s\phi}$
$W_F^+ \quad Z_F \quad \sim V^-{}_\mu \quad \sim V_{1\nu}$	$\frac{1}{2} i g^{\mu\nu}(\lambda_3 - \lambda_4)$
$W_F^+ \quad Z_F \quad \sim V^-{}_\mu \quad \sim V_{2\nu}$	$-\frac{1}{2} g^{\mu\nu}(\lambda_3 + \lambda_4)$
$W^-{}_\mu \quad Z_\nu \quad \sim V^+{}_\rho \quad \sim V_{1\sigma}$	$-\frac{1}{4}\frac{i \cdot e^2}{c_w \cdot s_w{}^2}(2s_w{}^2 \cdot g^{\mu\nu}g^{\rho\sigma} - 2c_w{}^2 \cdot g^{\mu\sigma}g^{\nu\rho} - g^{\mu\sigma}g^{\nu\rho} + 4c_w{}^2 \cdot g^{\mu\rho}g^{\nu\sigma}$
	$-g^{\mu\rho}g^{\nu\sigma})$
$W^-{}_\mu \quad Z_\nu \quad \sim V^+{}_\rho \quad \sim V_{2\sigma}$	$-\frac{1}{4}\frac{e^2}{c_w \cdot s_w{}^2}(2s_w{}^2 \cdot g^{\mu\nu}g^{\rho\sigma} - 2c_w{}^2 \cdot g^{\mu\sigma}g^{\nu\rho} - g^{\mu\sigma}g^{\nu\rho} + 4c_w{}^2 \cdot g^{\mu\rho}g^{\nu\sigma}$
	$-g^{\mu\rho}g^{\nu\sigma})$
$W_F^- \quad W_F^- \quad \sim V^+{}_\mu \quad \sim V^+{}_\nu$	$-2\lambda_4 \cdot g^{\mu\nu}$
$W_F^- \quad Z_F \quad \sim V^+{}_\mu \quad \sim V_{1\nu}$	$-\frac{1}{2} i g^{\mu\nu}(\lambda_3 - \lambda_4)$
$W_F^- \quad Z_F \quad \sim V^+{}_\mu \quad \sim V_{2\nu}$	$-\frac{1}{2} g^{\mu\nu}(\lambda_3 + \lambda_4)$
$Z_\mu \quad Z_\nu \quad Z_F \quad Z_F$	$\frac{1}{2}\frac{e^2}{c_w{}^2 \cdot s_w{}^2} \cdot g^{\mu\nu}$
$Z_\mu \quad Z_\nu \quad \sim V^+{}_\rho \quad \sim V^-{}_\sigma$	$-\frac{1}{4}\frac{(1-2c_w{}^2)^2 \cdot e^2}{c_w{}^2 \cdot s_w{}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$Z_\mu \quad Z_\nu \quad \sim V_{1\rho} \quad \sim V_{1\sigma}$	$-\frac{1}{4}\frac{e^2}{c_w{}^2 \cdot s_w{}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$Z_\mu \quad Z_\nu \quad \sim V_{2\rho} \quad \sim V_{2\sigma}$	$-\frac{1}{4}\frac{e^2}{c_w{}^2 \cdot s_w{}^2}(2g^{\mu\nu}g^{\rho\sigma} - g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$Z_F \quad Z_F \quad Z_F \quad Z_F$	$-\frac{3}{4}\frac{e^2 \cdot M_H{}^2}{M_W{}^2 \cdot s_w{}^2}$
$Z_F \quad Z_F \quad \sim V^+{}_\mu \quad \sim V^-{}_\nu$	$-\lambda_2 \cdot g^{\mu\nu}$
$Z_F \quad Z_F \quad \sim V_{1\mu} \quad \sim V_{1\nu}$	$-g^{\mu\nu}(\lambda_2 + \lambda_3 - \lambda_4)$
$Z_F \quad Z_F \quad \sim V_{2\mu} \quad \sim V_{2\nu}$	$-g^{\mu\nu}(\lambda_2 + \lambda_3 + \lambda_4)$
$Z_F \quad Z_F \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{s\phi}$
$\sim V^+{}_\mu \quad \sim V^+{}_\nu \quad \sim V^-{}_\rho \quad \sim V^-{}_\sigma$	$-2(\alpha_2 \cdot g^{\mu\rho}g^{\nu\sigma} + \alpha_3 \cdot g^{\mu\rho}g^{\nu\sigma} + \alpha_2 \cdot g^{\mu\sigma}g^{\nu\rho} + \alpha_3 \cdot g^{\mu\sigma}g^{\nu\rho})$
$\sim V^+{}_\mu \quad \sim V^-{}_\nu \quad \sim V_{1\rho} \quad \sim V_{1\sigma}$	$-(2\alpha_2 \cdot g^{\mu\nu}g^{\rho\sigma} + \alpha_3 \cdot g^{\mu\rho}g^{\nu\sigma} + \alpha_3 \cdot g^{\mu\sigma}g^{\nu\rho})$
$\sim V^+{}_\mu \quad \sim V^-{}_\nu \quad \sim V_{1\rho} \quad \sim V_{2\sigma}$	$i \cdot \alpha_3(g^{\mu\sigma}g^{\nu\rho} - g^{\mu\rho}g^{\nu\sigma})$
$\sim V^+{}_\mu \quad \sim V^-{}_\nu \quad \sim V_{2\rho} \quad \sim V_{2\sigma}$	$-(2\alpha_2 \cdot g^{\mu\nu}g^{\rho\sigma} + \alpha_3 \cdot g^{\mu\rho}g^{\nu\sigma} + \alpha_3 \cdot g^{\mu\sigma}g^{\nu\rho})$

Fields in the vertex	Variational derivative of Lagrangian by fields
$\sim V^{+}{}_{\mu} \quad \sim V^{-}{}_{\nu} \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{sv} \cdot g^{\mu\nu}$
$\sim V_{1\mu} \quad \sim V_{1\nu} \quad \sim V_{1\rho} \quad \sim V_{1\sigma}$	$-2(\alpha_2 \cdot g^{\mu\nu} g^{\rho\sigma} + \alpha_3 \cdot g^{\mu\nu} g^{\rho\sigma} + \alpha_2 \cdot g^{\mu\rho} g^{\nu\sigma} + \alpha_3 \cdot g^{\mu\rho} g^{\nu\sigma} + \alpha_2 \cdot g^{\mu\sigma} g^{\nu\rho}$
	$+\alpha_3 \cdot g^{\mu\sigma} g^{\nu\rho})$
$\sim V_{1\mu} \quad \sim V_{1\nu} \quad \sim V_{2\rho} \quad \sim V_{2\sigma}$	$-2g^{\mu\nu} g^{\rho\sigma}(\alpha_2 + \alpha_3)$
$\sim V_{1\mu} \quad \sim V_{1\nu} \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{sv} \cdot g^{\mu\nu}$
$\sim V_{2\mu} \quad \sim V_{2\nu} \quad \sim V_{2\rho} \quad \sim V_{2\sigma}$	$-2(\alpha_2 \cdot g^{\mu\nu} g^{\rho\sigma} + \alpha_3 \cdot g^{\mu\nu} g^{\rho\sigma} + \alpha_2 \cdot g^{\mu\rho} g^{\nu\sigma} + \alpha_3 \cdot g^{\mu\rho} g^{\nu\sigma} + \alpha_2 \cdot g^{\mu\sigma} g^{\nu\rho}$
	$+\alpha_3 \cdot g^{\mu\sigma} g^{\nu\rho})$
$\sim V_{2\mu} \quad \sim V_{2\nu} \quad \sim\sim S \quad \sim\sim S$	$-2\lambda_{sv} \cdot g^{\mu\nu}$
$\sim\sim S \quad \sim\sim S \quad \sim\sim S \quad \sim\sim S$	$-6\lambda_S$