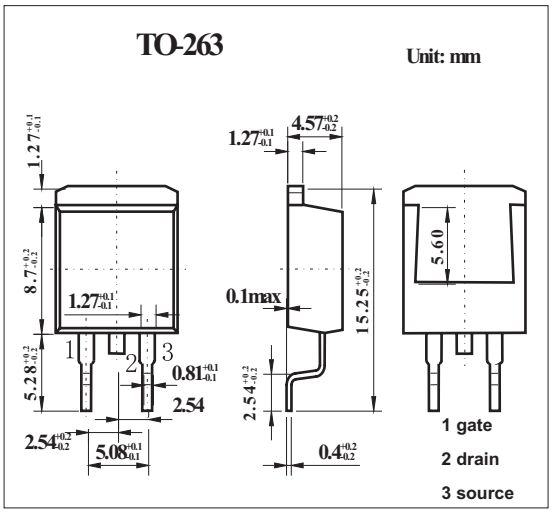
TrenchMOS™ transistor Standard level FET

KUK7605-30A



■ Features

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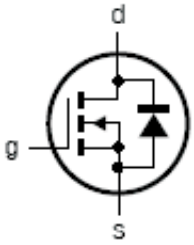

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	30	V
Drain-gate voltage R_{GS} = 20 KΩ	V_{DGR}	30	V
Gate-source voltage	±V_{GS}	20	V
Drain current (DC) T_{mb} = 25℃	I_D	75	A
Drain current (DC) T_{mb} = 100℃	I_D	75	A
Drain current (pulse peak value) T_{mb} = 25℃	I_{DM}	400	A
Total power dissipation T_{mb} = 25℃	P_{tot}	230	W
Storage & operating temperature	T_{stg}, T_j	-55 to 175	℃
Thermal resistance junction to mounting base	$R_{th\ j\text{-}mb}$	0.65	K/W
Thermal resistance junction to ambient	$R_{th\ j\text{-}a}$	50	K/W

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
drain-source breakdown voltage	$V_{(BR)DSS}$	I_D = 0.25 mA; V_{GS} = 0 V;T_j = 25℃	30			V
		I_D = 0.25 mA; V_{GS} = 0 V;T_j = -55℃	27			V
gate-source threshold voltage	$V_{GS(th)}$	I_D = 1 mA; V_{DS} = V_{GS};T_j = 25℃	2	3	4	V
		I_D = 1 mA; V_{DS} = V_{GS};T_j = 175℃	1			V
		I_D = 1 mA; V_{DS} = V_{GS};T_j = -55℃			4.4	V
Zero gate voltage drain current	I_{DSS}	V_{DS} = 30 V; V_{GS} = 0 V;T_j = 25℃		0.05	10	μA
		V_{DS} = 30 V; V_{GS} = 0 V;T_j = 175℃			500	μA
gate-source leakage current	I_{GSS}	V_{GS} = ±20 V; V_{DS} = 0 V		2	100	nA
drain-source on-state resistance	R_{DSon}	V_{GS} = 10 V; I_D = 25 A;T_j = 25℃		4.3	5	mΩ
		V_{GS} = 10 V; I_D = 25 A;T_j = 175℃			9.3	mΩ
input capacitance	C_{iss}	V_{GS} = 0 V; V_{DS} = 25 V;f = 1 MHz		4500	6000	pF
output capacitance	C_{oss}			1500	1800	pF
reverse transfer capacitance	C_{rss}			960	1300	pF
turn-on delay time	$t_{d(on)}$	V_{DD} = 30 V; R_L = 1.2Ω;V_{GS} = 10 V; R_G = 10Ω		35	55	ns
rise time	t_r			130	200	ns
turn-off delay time	$t_{d(off)}$			155	230	ns
fall time	t_f			150	220	ns
internal drain inductance	L_d	from drain lead 6 mm from package to centre of die		2.5		nH
internal source inductance	L_s	Measured from source lead soldering point to source bond pad		7.5		nH
Continuous reverse drain current	I_{DR}				75	A
Pulsed reverse drain current	I_{DRM}				240	A
source-drain (diode forward) voltage	V_{SD}	I_F = 25 A; V_{GS} = 0 V		0.85	1.2	V
		I = 75 A; V = 0 V		1.1		V
reverse recovery time	t_{rr}	I_S = 75 A; -dI_F/dt = 100 A/μs;		400		ns
recovered charge	Q_r	V_{GS} = -10 V; V_{DS} = 30 V		1.0		μC
Drain-source non-repetitive unclamped inductive turn-off energy	W_{DSS}	I_D=75A;V_{DD}≤25V;V_{GS}=10V;R_{GS}=50Ω;T_{mb}=25℃			500	mJ