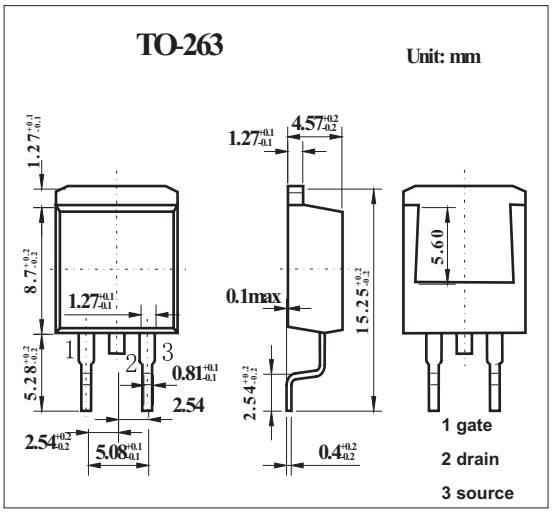
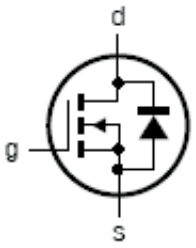
TrenchMOS™ standard level FET

KUK7575-100A



■ Features

- TrenchMOS™ technology
- Q101 compliant
- 175℃ rated
- Standard level compatible.



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
drain-source voltage (DC)	V_{DS}	100	V
drain-gate voltage (DC) R_{GS} = 20 kΩ	V_{DGR}	100	V
gate-source voltage (DC)	V_{GS}	±20	V
drain current (DC) T_{mb} = 25℃; V_{GS} = 10 V	I_D	23	A
drain current (DC) T_{mb} = 100℃; V_{GS} = 10 V		16.2	A
peak drain current *1	I_{DM}	92	A
total power dissipation T_{mb} = 25 ℃	P_{tot}	99	W
storage temperature	T_{stg}	-55 to 175	℃
operating junction temperature	T_j	-55 to 175	℃
reverse drain current (DC) T_{mb} = 25℃	I_{DR}	23	A
pulsed reverse drain current *2	I_{DRM}	92	A
non-repetitive avalanche energy	W_{DSS}	100	mJ
thermal resistance from junction to ambient	$R_{th(j-a)}$	50	K/W
thermal resistance from junction to mounting base	$R_{th(j-mb)}$	1.5	K/W

*1 T_{mb} = 25℃; pulsed; $t_p \leqslant$ 10 μs;

*2 unclamped inductive load; I_D = 14 A;$V_{DS} \leqslant$ 100 V; V_{GS} = 10 V; R_{GS} = 50Ω,starting T_{mb}= 25℃

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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℃	100			V
		I_D = 0.25 mA; V_{GS} = 0 V;T_j = -55℃	89			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
drain-source leakage current	I_{DSS}	V_{DS} = 100 V; V_{GS} = 0 V;T_j = 25℃		0.05	10	mA
		V_{DS} = 100 V; V_{GS} = 0 V;T_j = 175℃			500	mA
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 = 13 A;T_j = 25℃		64	75	mΩ
		V_{GS} = 10 V; I_D = 13 A;T_j = 175℃			187	mΩ
input capacitance	C_{iss}	V_{GS} = 0 V; V_{DS} = 25 V;f = 1 MHz		907		pF
output capacitance	C_{oss}			127		pF
reverse transfer capacitance	C_{rss}			78		pF
turn-on delay time	$t_{d(on)}$	V_{DD} = 30 V; R_L = 2.2Ω;V_{GS} = 10 V; R_G = 5.6Ω		8		ns
rise time	t_r			39		ns
turn-off delay time	$t_{d(off)}$			26		ns
fall time	t_f			24		ns
internal drain inductance	L_d	from drain lead 6 mm from package to centre of die		4.5		nH
				2.5		nH
internal source inductance	L_s	from source lead to source bond pad		7.5		nH
source-drain (diode forward) voltage	V_{SD}	I_S = 25 A; V_{GS} = 0 V;		0.85	1.2	V
reverse recovery time	t_{rr}	I_S = 13 A;dI_S/dt = -100 A/μs		64		ns
recovered charge	Q_r	V_{GS} = -10 V; V_{DS} = 30 V		120		nC