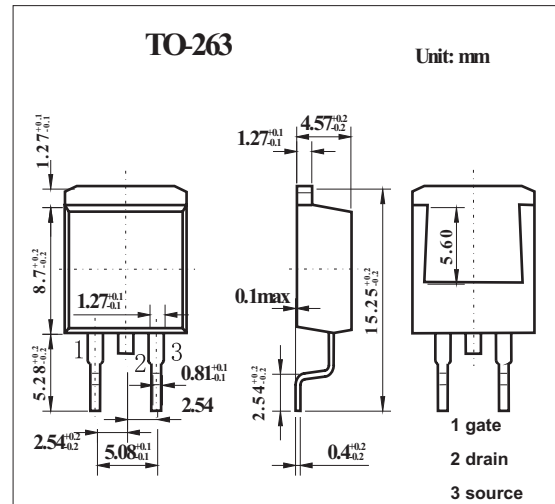
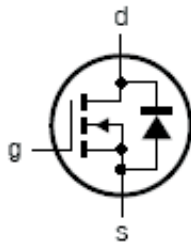


TrenchMOS™ standard level FET

KUK7575-100A

■ Features

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

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
drain-source voltage (DC)	V_{DS}	100	V
drain-gate voltage (DC) $R_{GS} = 20\text{ k}\Omega$	V_{DGR}	100	V
gate-source voltage (DC)	V_{GS}	± 20	V
drain current (DC) $T_{mb} = 25^\circ\text{C}; V_{GS} = 10\text{ V}$	I_D	23	A
drain current (DC) $T_{mb} = 100^\circ\text{C}; V_{GS} = 10\text{ V}$		16.2	A
peak drain current *1	I_{DM}	92	A
total power dissipation $T_{mb} = 25^\circ\text{C}$	P_{tot}	99	W
storage temperature	T_{stg}	-55 to 175	$^\circ\text{C}$
operating junction temperature	T_j	-55 to 175	$^\circ\text{C}$
reverse drain current (DC) $T_{mb} = 25^\circ\text{C}$	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 $T_{mb} = 25^\circ\text{C}$; pulsed; $t_p \leq 10\ \mu\text{s}$;

*2 unclamped inductive load; $I_D = 14\text{ A}; V_{DS} \leq 100\text{ V}; V_{GS} = 10\text{ V}; R_{GS} = 50\ \Omega$, starting $T_{mb} = 25^\circ\text{C}$

KUK7575-100A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 0.25 \text{ mA}; V_{GS} = 0 \text{ V}; T_j = 25^\circ\text{C}$	100			V
		$I_D = 0.25 \text{ mA}; V_{GS} = 0 \text{ V}; T_j = -55^\circ\text{C}$	89			V
gate-source threshold voltage	$V_{GS(th)}$	$I_D = 1 \text{ mA}; V_{DS} = V_{GS}; T_j = 25^\circ\text{C}$	2	3	4	V
		$I_D = 1 \text{ mA}; V_{DS} = V_{GS}; T_j = 175^\circ\text{C}$	1			V
		$I_D = 1 \text{ mA}; V_{DS} = V_{GS}; T_j = -55^\circ\text{C}$			4.4	V
drain-source leakage current	I_{DSS}	$V_{DS} = 100 \text{ V}; V_{GS} = 0 \text{ V}; T_j = 25^\circ\text{C}$		0.05	10	mA
		$V_{DS} = 100 \text{ V}; V_{GS} = 0 \text{ V}; T_j = 175^\circ\text{C}$			500	mA
gate-source leakage current	I_{GSS}	$V_{GS} = \pm 20 \text{ V}; V_{DS} = 0 \text{ V}$		2	100	nA
drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10 \text{ V}; I_D = 13 \text{ A}; T_j = 25^\circ\text{C}$		64	75	m Ω
		$V_{GS} = 10 \text{ V}; I_D = 13 \text{ A}; T_j = 175^\circ\text{C}$			187	m Ω
input capacitance	C_{iss}	$V_{GS} = 0 \text{ V}; V_{DS} = 25 \text{ V}; f = 1 \text{ MHz}$		907		pF
output capacitance	C_{oss}			127		pF
reverse transfer capacitance	C_{rss}			78		pF
turn-on delay time	$t_{d(on)}$			8		ns
rise time	t_r	$V_{DD} = 30 \text{ V}; R_L = 2.2\Omega; V_{GS} = 10 \text{ V}; R_G = 5.6\Omega$		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}	$I_s = 25 \text{ A}; V_{GS} = 0 \text{ V};$		0.85	1.2	V
reverse recovery time	t_{rr}	$I_s = 13 \text{ A}; di_s/dt = -100 \text{ A}/\mu\text{s}$		64		ns
recovered charge	Q_r	$V_{GS} = -10 \text{ V}; V_{DS} = 30 \text{ V}$		120		nC