



UTN3055

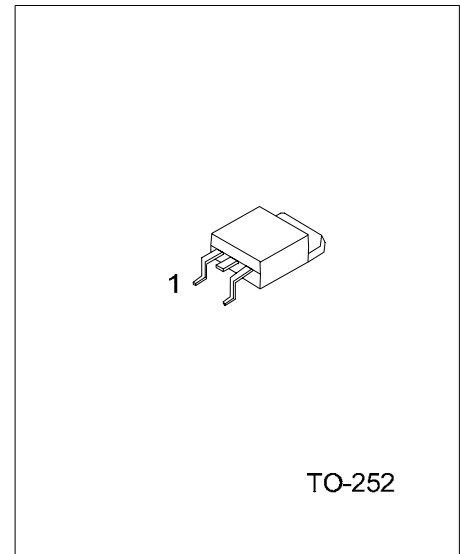
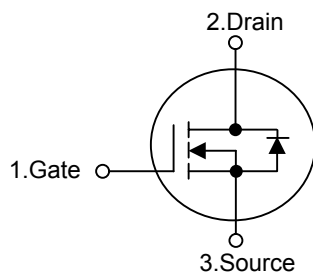
Power MOSFET

N-CHANNEL ENHANCEMENT MODE

■ DESCRIPTION

The UTC **UTN3055** is N-channel logic level enhancement mode field effect transistor.

■ SYMBOL



*Pb-free plating product number: UTN3055L

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UTN3055-TN3-R	UTN3055L-TN3-R	TO-252	G	D	S	Tape Reel
UTN3055-TN3-T	UTN3055L-TN3-T	TO-252	G	D	S	Tube

UTN3055L-TN3-R		(1)Packing Type	(1) R: Tape Reel, T: Tube
		(2)Package Type	(2) TN3: TO-252
		(3)Lead Plating	(3) L: Lead Free Plating, Blank: Pb/Sn

■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	± 25	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	12	A
Pulsed Drain Current (Note 1)	I_{DM}	45	
Repetitive Avalanche Energy ($L=0.05\text{mH}$, Duty Cycle 1%)	E_{AR}	3	mJ
Power Dissipation	P_D	43	W
Junction Temperature	T_J	+150	
Storage Temperature	T_{STG}	-55 ~ +150	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}			60	/W
Junction-to-Case	θ_{JC}			2.6	/W

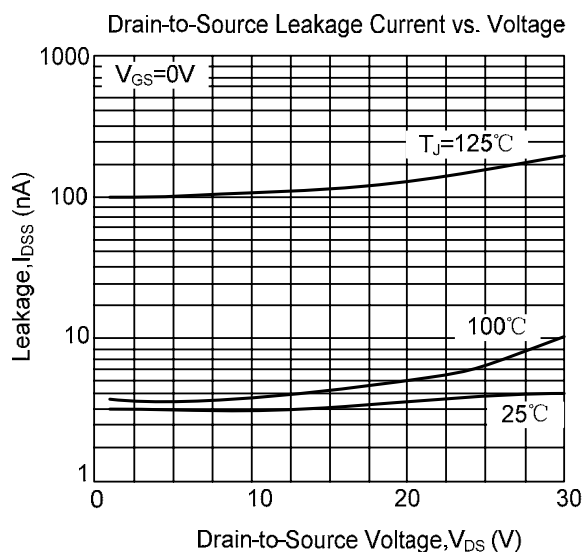
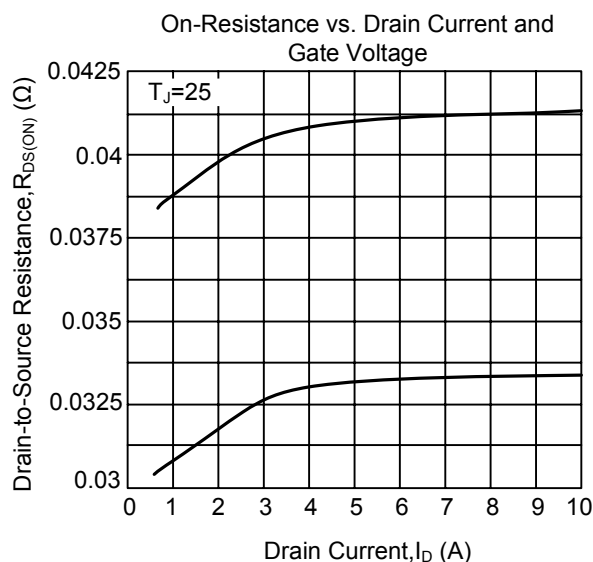
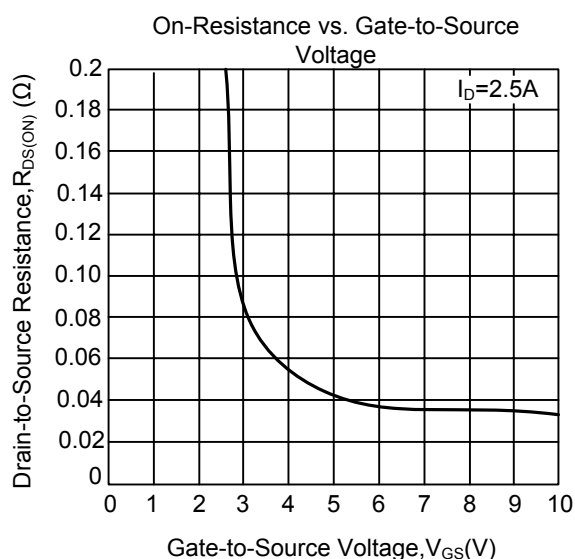
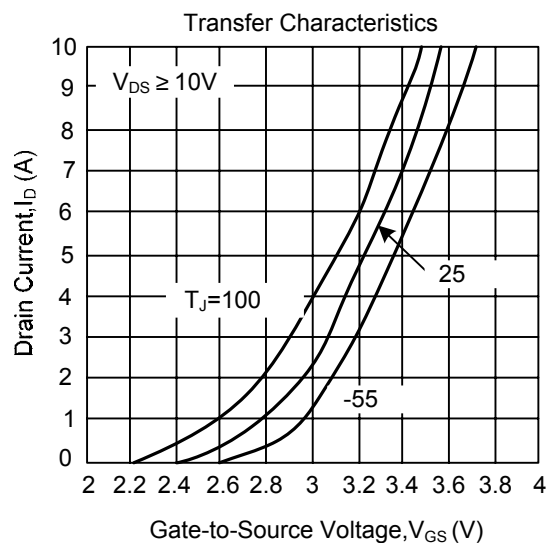
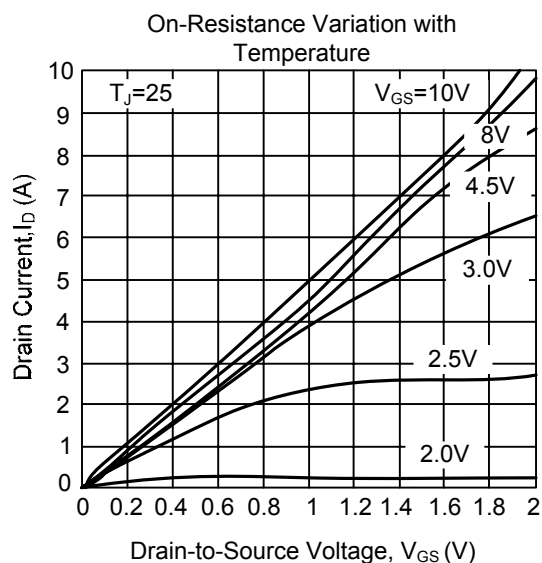
■ ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	25			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			25	uA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±250	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250uA	0.8	1.2	2.5	V
On-State Drain Current (Note 2)	I _{D(ON)}	V _{DS} =10V, V _{GS} =10V	12			A
Drain-Source On-State Resistance (Note 2)	R _{DS(ON)}	V _{GS} =10V, I _D =12A		50	90	mΩ
		V _{GS} =5V, I _D =12A		70	120	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =15V, f=1.0MHz		450		pF
Output Capacitance	C _{OSS}			200		pF
Reverse Transfer Capacitance	C _{RSS}			60		pF
SWITCHING CHARACTERISTICS (Note 2)						
Turn-ON Delay Time	t _{D(ON)}	V _{DS} =15V, V _{GS} =10V, I _D 12A, R _G =2.5Ω, R _L =1Ω		6.0		ns
Turn-ON Rise Time	t _R			6.0		ns
Turn-OFF Delay Time	t _{D(OFF)}			20		ns
Turn-OFF Fall Time	t _F			5.0		ns
Total Gate Charge	Q _G	V _{DS} =0.5V, V _{GS} =10V, I _D =6A		15		nC
Gate-Source Charge	Q _{GS}			2.0		nC
Gate-Drain Charge	Q _{GD}			7.0		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	I _F =I _S , V _{GS} =0V			1.5	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				12	A
Maximum Pulsed Drain-Source Diode Forward Current (Note 1)	I _{SM}				20	A
Peak Reverse Recovery Current	I _{RM(REC)}	I _F = I _S , dI _F /dt = 100A / μS		15		A
Reverse Recovery Time	t _{RR}			30		nS
Reverse Recovery Charge	Q _{RR}			0.043		uC

Notes: 1. Pulse width limited by $T_{J(MAX)}$

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS



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