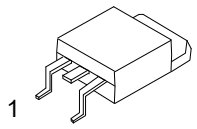
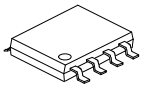
UDF002N170

Power MOSFET

0.02A, 1700V N-CHANNEL DEPLETION-MODE POWER MOSFET



TO-252



SOP-8

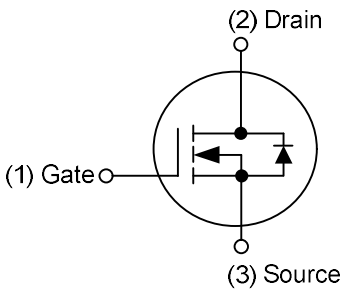
■ DESCRIPTION

The UTC **UDF002N170** is an N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed.

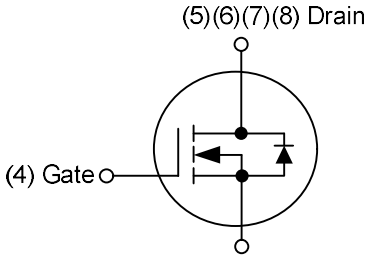
■ FEATURES

* $R_{DS(ON)} \leq 900\ \Omega$ @ V_{GS} = 0V, I_D = 3.0mA
* High Switching Speed
* Green Product

■ SYMBOL



TO-252



SOP-8

■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UDF002N170G-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UDF002N170G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

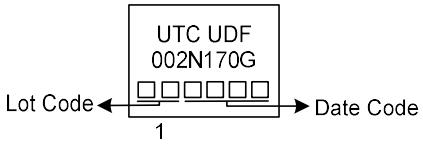
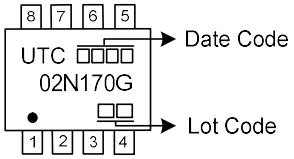
Note: Pin Assignment: G: Gate D: Drain S: Source

UDF002N170G-TN3-R

(1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) TN3: TO-252, S08: SOP-8
(3)Green Package	(3) G: Halogen Free and Lead Free

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■ MARKING

TO-252	SOP-8
	

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		V_{DSS}	1700	V
Drain-Gate Voltage (Note 2)		V_{DGX}	1700	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	0.02	A
	Pulsed	I_{DM}	0.04	A
Power Dissipation	TO-252	P_D	8	W
	SOP-8		1.8	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Notes: 1. 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.
2. T_J=+25°C ~ +150°C

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-252	θ_{JA}	110	°C/W
	SOP-8		190	°C/W

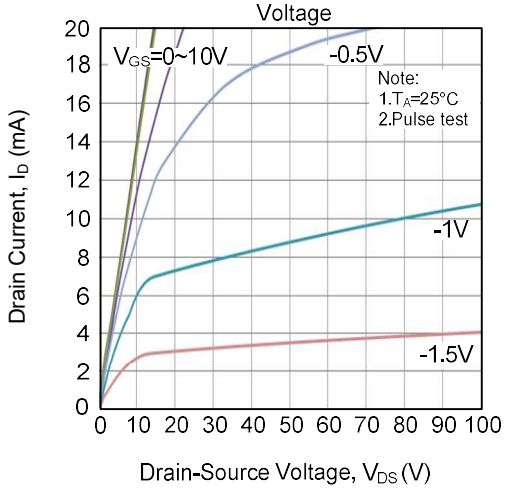
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSX}	I_D=250μA, V_{GS}=-30V	1700			V
Drain-Source Leakage Current		$I_{D(OFF)}$	V_{DS}=1700V, V_{GS}=-30V			10	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS							
Gate to Source Cut Off Voltage		$V_{GS(OFF)}$	V_{DS}=3V, I_D=8.0μA	-2.0		-4.0	V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=25V, V_{GS}=0V	15			mA
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=0V, I_D=3.0mA			900	Ω
DYNAMIC PARAMETERS							
Input Capacitance		C_{ISS}	V_{GS}=-10V, V_{DS}=25V, f=1.0MHz		31		pF
Output Capacitance		C_{OSS}			7		pF
Reverse Transfer Capacitance		C_{RSS}			2		pF
SWITCHING PARAMETERS							
Turn-ON Delay Time		$t_{D(ON)}$	V_{GS}=-10~0V, V_{DD}=100V, I_D=20mA, R_G=25Ω		10		ns
Rise Time		t_R			120		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			20		ns
Fall-Time		t_F			370		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Drain-Source Diode Forward Voltage		V_{SD}	I_{SD}=20mA, V_{GS}=-10V			1.4	V

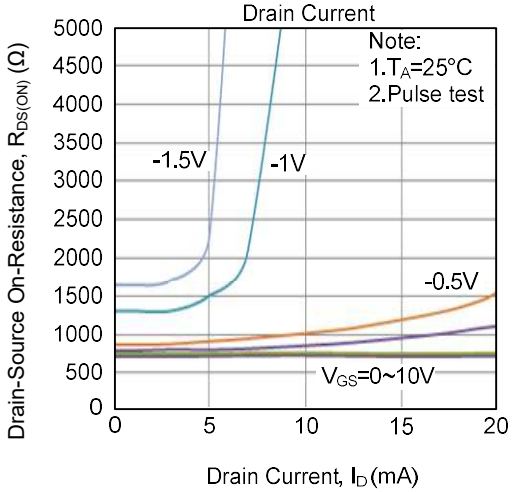
Notes: 1. Repetitive rating, pulse width limited by maximum junction temperature.
2. Pulse width ≤ 380μs; duty cycle ≤ 2%.

■ TYPICAL CHARACTERISTICS

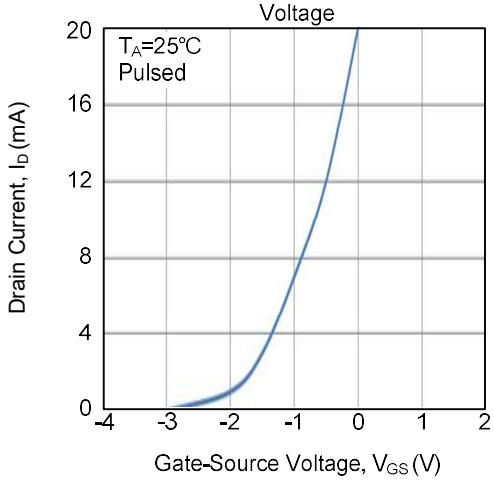
Drain Current vs. Drain-Source Voltage



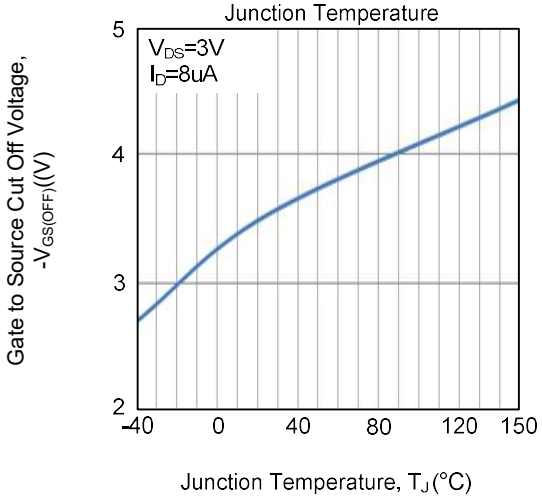
Drain-Source On-Resistance vs. Drain Current



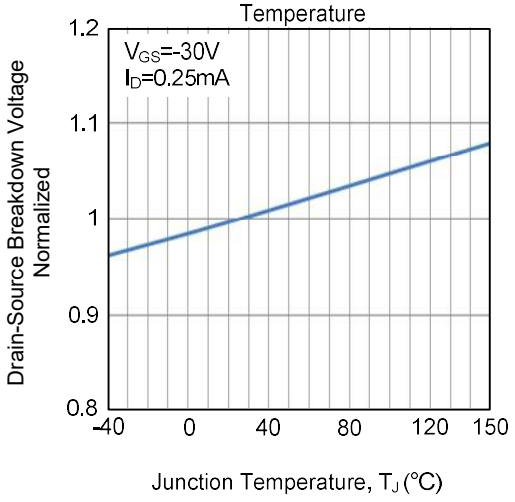
Drain Current vs. Gate-Source Voltage



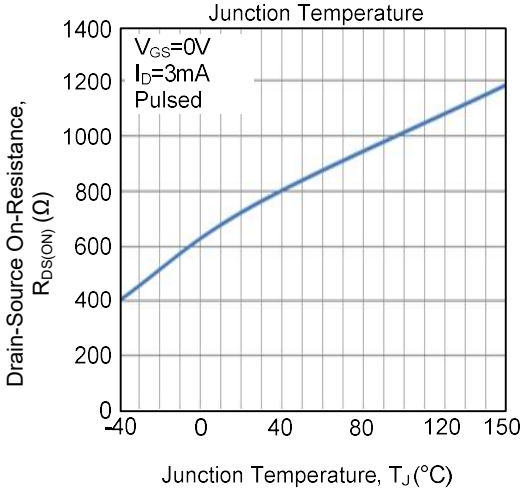
Gate to Source Cut Off Voltage vs. Junction Temperature



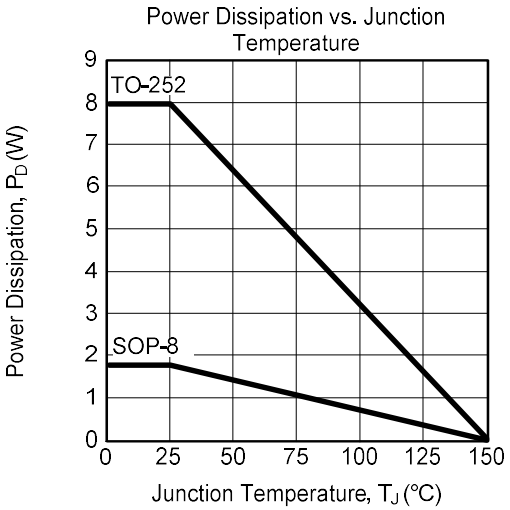
Breakdown Voltage vs Junction Temperature



Drain-Source On-Resistance vs. Junction Temperature



■ TYPICAL CHARACTERISTICS (Cont.)



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