



## UD9926

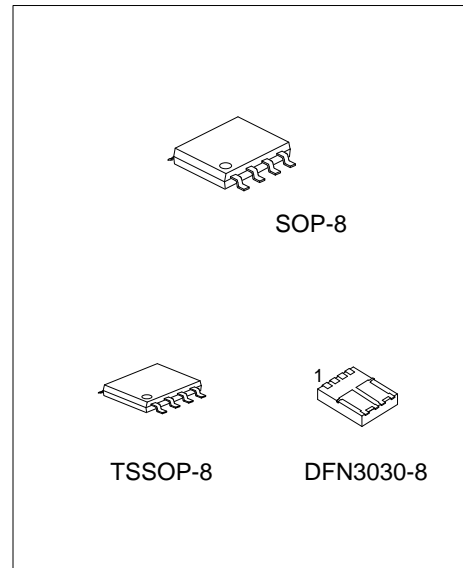
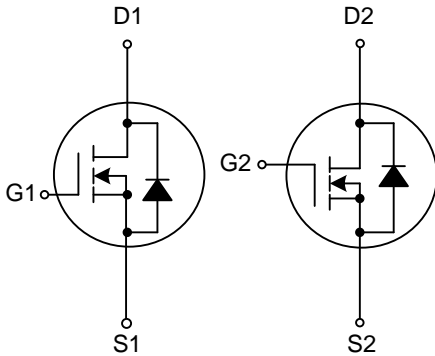
Power MOSFET

### DUAL N-CANNEL ENHANCEMENT MODE

#### ■ FEATURES

- \* 20V/6A
- \* Low  $R_{DS(ON)}$
- \* Reliable and Rugged

#### ■ SYMBOL



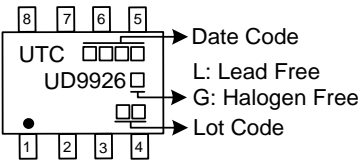
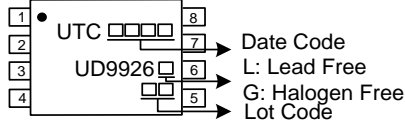
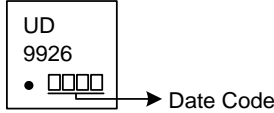
#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UD9926L-S08-R	UD9926G-S08-R	SOP-8	S1	G1	S2	G2	D2	D2	D1	D1	Tape Reel
UD9926L-P08-R	UD9926G-P08-R	TSSOP-8	D1	S1	S1	G1	G2	S2	S2	D2	Tape Reel
UD9926L-K08-3030-R	UD9926G-K08-3030-R	DFN3030-8	S1	G1	S2	G2	D2	D2	D1	D1	Tape Reel

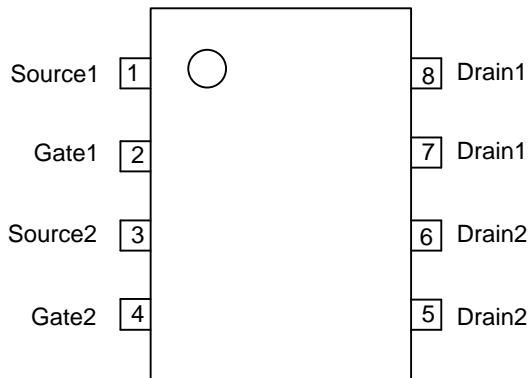
Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UD9926G-S08-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) S08: SOP-8, P08: TSSOP-8, K08-3030: DFN3030-8</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
--	--

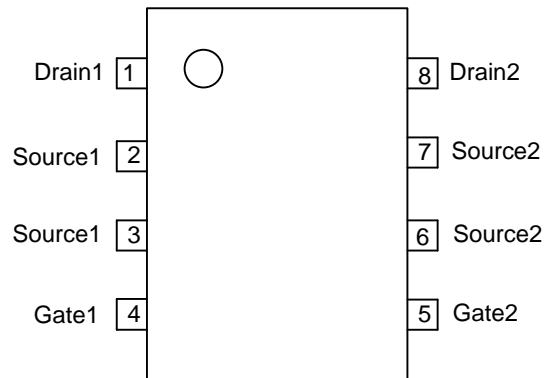
## MARKING

PACKAGE	MARKING
SOP-8	 <p>UTC □□□□ → Date Code          UD9926 □ → L: Lead Free          □ → G: Halogen Free          • □□□□ → Lot Code</p>
TSSOP-8	 <p>UTC □□□□ → Date Code          UD9926 □ → L: Lead Free          □ → G: Halogen Free          • □□□□ → Lot Code</p>
DFN3030-8	 <p>UD          9926          • □□□□ → Date Code</p>

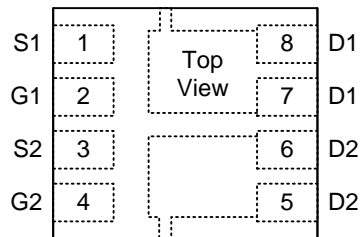
## PIN CONFIGURATION



SOP-8



TSSOP-8



DFN3030-8

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain Source Voltage		$V_{DSS}$	20	V
Gate Source Voltage		$V_{GSS}$	$\pm 10$	V
Drain Current	Continuous(Note 2)	$I_D$	6	A
	Pulsed (Note 3)	$I_{DM}$	20	A
Power Dissipation	SOP-8	$P_D$	1.6	W
	DFN3030-8		15	W
	TSSOP-8		1.0	W
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

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. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. Surface Mounted on  $1\text{in}^2$  pad area,  $t \leq 10\text{sec}$ .

■ **THERMAL DATA**

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOP-8/TSSOP-8	$\theta_{JA}$	80	$^\circ\text{C/W}$
	DFN3030-8		8.33	$^\circ\text{C/W}$

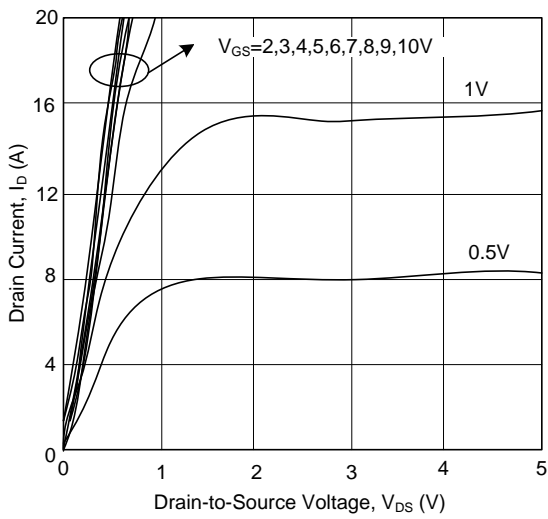
■ **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu\text{A}$	20			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=16V, V_{GS}=0V$			1	$\mu\text{A}$
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 8V$			$\pm 100$	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.5	0.7	1.5	V
Drain-Source On-State Resistance (Note2)	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6A$		28	32	m $\Omega$
		$V_{GS}=2.5V, I_D=5.2A$		38	45	m $\Omega$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{ISS}$	$V_{GS}=0V, V_{DS}=15V, f=1.0\text{MHz}$		360		pF
Output Capacitance	$C_{OSS}$			95		pF
Reverse Transfer Capacitance	$C_{RSS}$			90		pF
<b>SWITCHING CHARACTERISTICS</b>						
Total Gate Charge (Note)	$Q_G$	$V_{DS}=10V, V_{GS}=4.5V, I_D=6A$		8		nC
Gate-Source Charge	$Q_{GS}$			1.2		nC
Gate-Drain Charge	$Q_{GD}$			2.6		nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{DD}=10V, V_{GS}=4.5V, I_D=6A, R_G=3.3\Omega$		7		ns
Turn-ON Rise Time	$t_R$			16		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			42		ns
Turn-OFF Fall Time	$t_F$			28		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Maximum Continuous Drain-Source Diode Forward Current	$I_S$				2.5	A
Drain-Source Diode Forward Voltage(Note2)	$V_{SD}$	$I_S=1.7A, V_{GS}=0V$	0.6		1.3	V

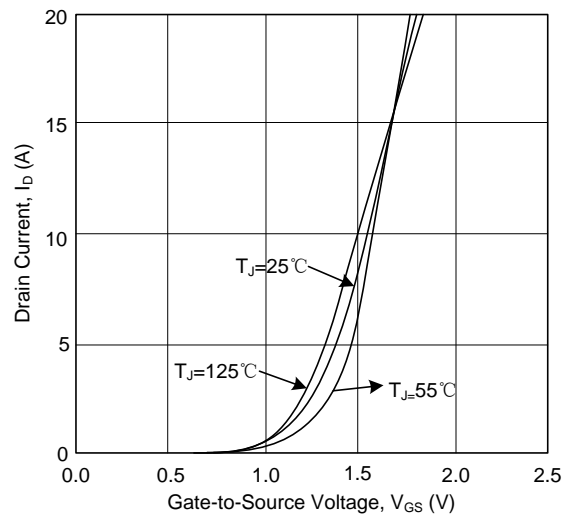
Note: Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$ .

## TYPICAL CHARACTERISTICS

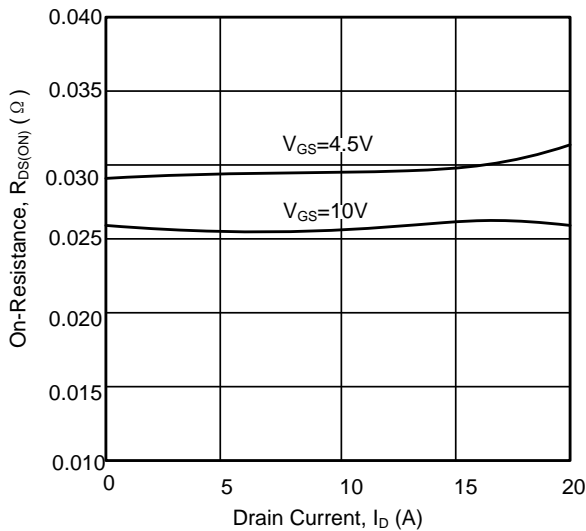
Output Characteristics



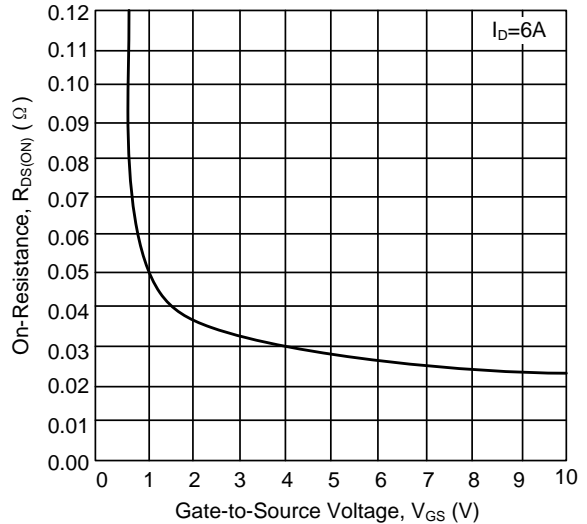
Transfer Characteristics



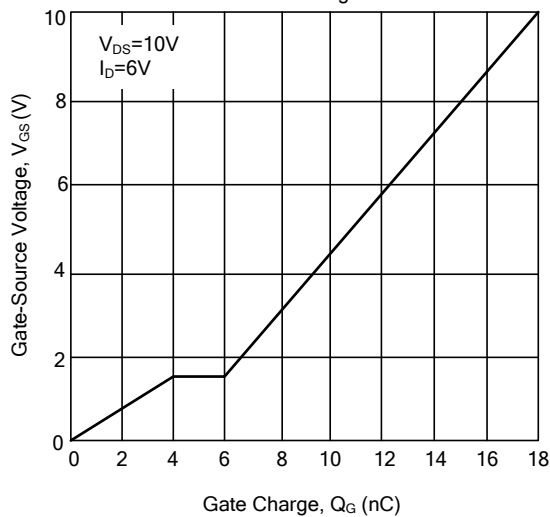
On-Resistance vs. Drain Current



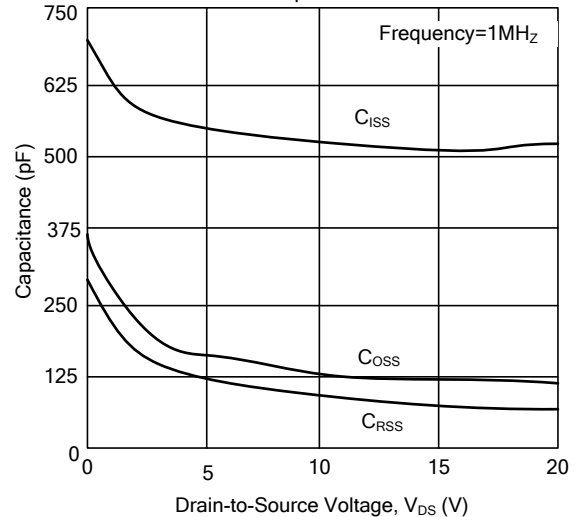
On-Resistance vs. Gate-to-Source Voltage



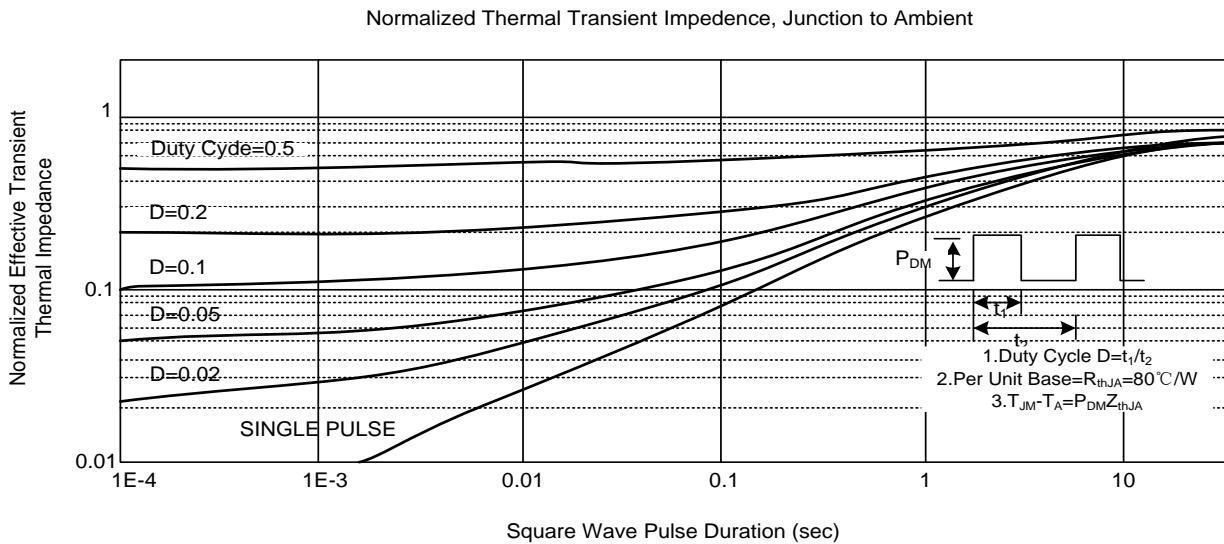
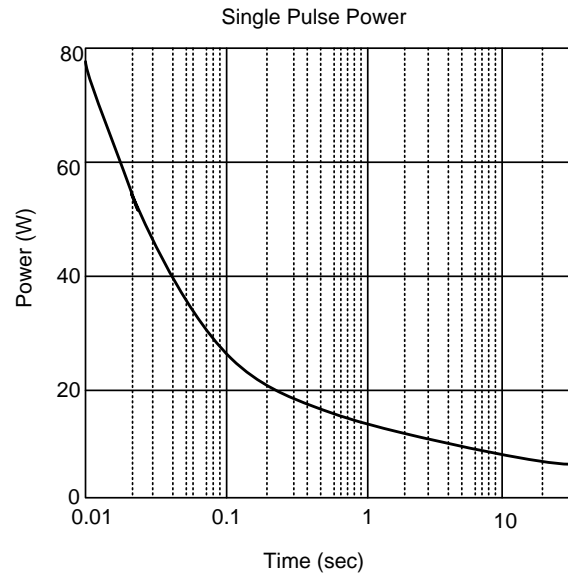
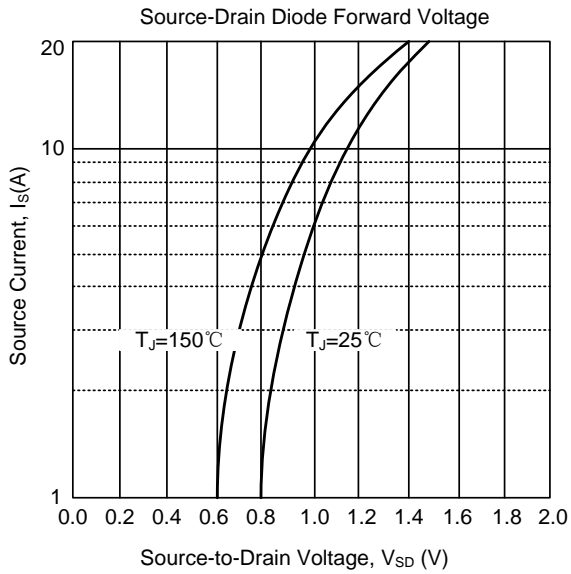
Gate Charge



Capacitance



## ■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.