



UTL1426

Power MOSFET

N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

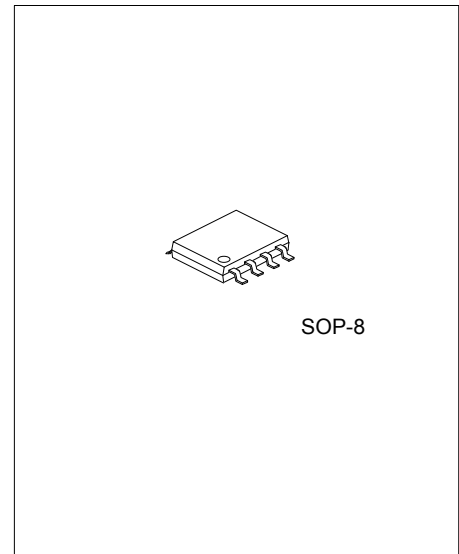
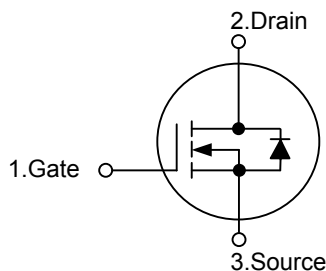
DESCRIPTION

The **UTL1426** uses UTC's advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} < 10.5 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$
 $R_{DS(ON)} < 12.5 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



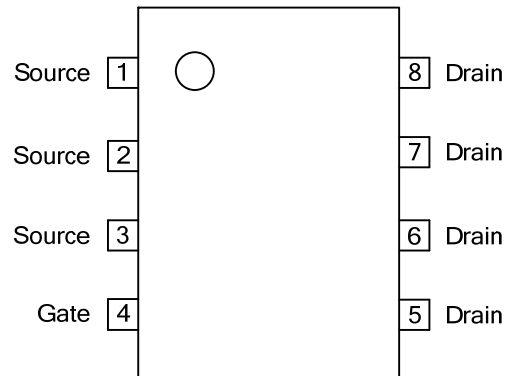
Lead-free: UTL1426L
Halogen-free: UTL1426G

ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free Plating	Halogen Free		
UTL1426-S08-R	UTL1426L-S08-R	UTL1426G-S08-R	SOP-8	Tape Reel

UTL1426L-S08-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) S08: SOP-8
	(3)Lead Plating	(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	46	A
Pulsed Drain Current	I_{DM}	120	A
Avalanche Current	I_{AR}	35	A
Repetitive avalanche energy $L=0.3\text{mH}$	E_{AR}	184	mJ
Power Dissipation	$T_C=25^{\circ}\text{C}$ P_D	43	W
Junction Temperature	T_J	+175	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +175	$^{\circ}\text{C}$

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

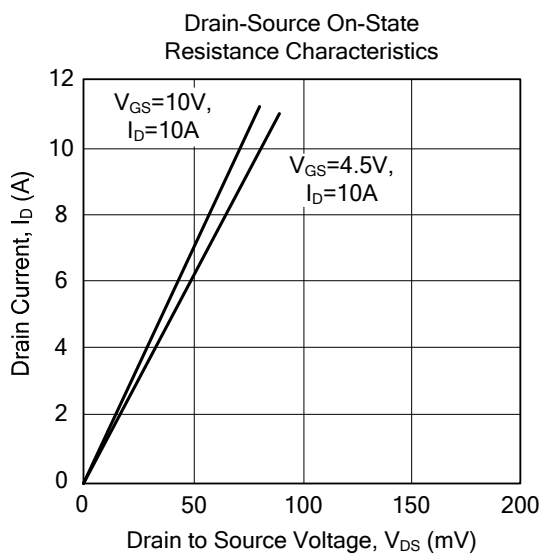
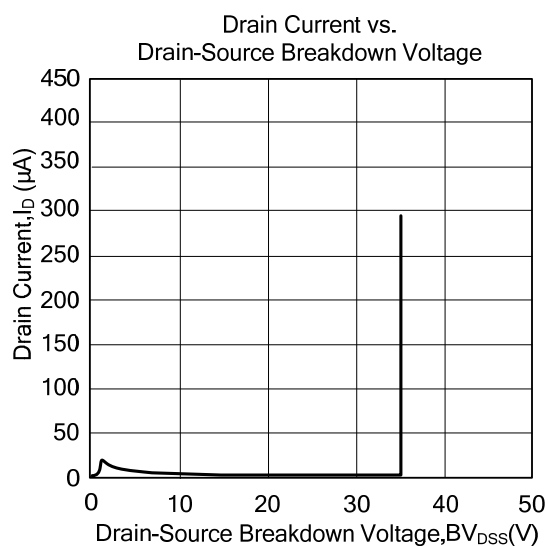
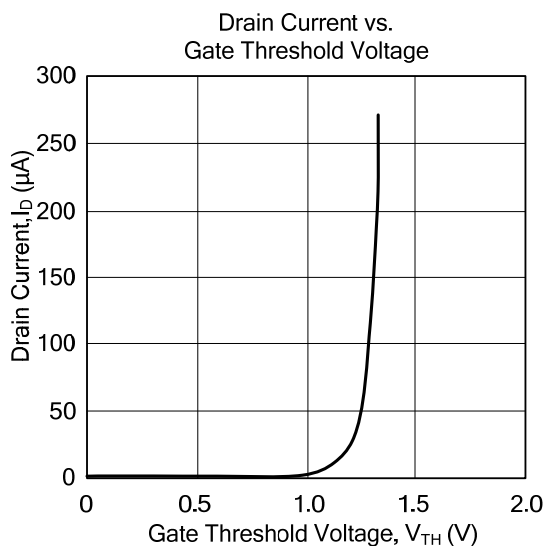
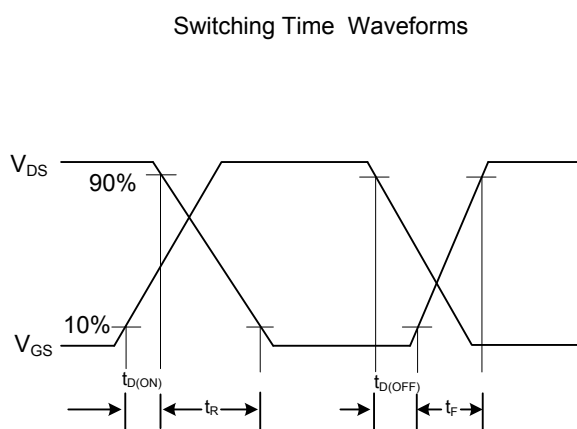
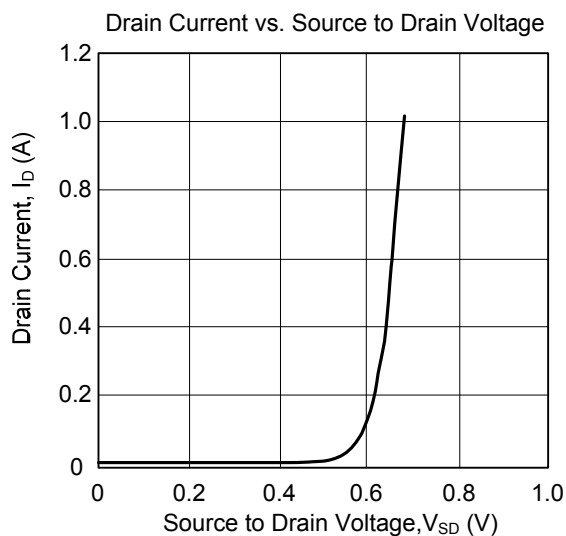
■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ_{JA}		53	64	$^{\circ}\text{C/W}$
Junction-to-Case	θ_{JC}		2.4	3.5	

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current		I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Body Leakage Current		I _{GSS}	V _{DS} =0V, V _{GS} =±12V			0.1	μA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1	1.55	2.5	V
On State Drain Current		I _{D(ON)}	V _{DS} =5V, V _{GS} =10V	120			A
Static Drain-Source On-Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =20A		8.5	10.5	mΩ
			V _{GS} =4.5V, I _D =20A		10.2	12.5	
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{DS} =15V, V _{GS} =0V, f=1MHz		1210	1452	pF
Output Capacitance		C _{OSS}			330		pF
Reverse Transfer Capacitance		C _{RSS}			85		pF
SWITCHING PARAMETERS							
Turn-ON Delay Time		t _{D(ON)}	V _{GS} =10V, V _{DS} =15V, R _L =0.75Ω, R _{GEN} =3Ω		10		ns
Turn-ON Rise Time		t _R			6.3		ns
Turn-OFF Delay Time		t _{D(OFF)}			21		ns
Turn-OFF Fall-Time		t _F			2.8		ns
Total Gate Charge	10V	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =20A		22	28	nC
	4.5V				10		nC
Gate Source Charge		Q _{GS}			3.7		nC
Gate Drain Charge		Q _{GD}			2.7		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Diode Forward Voltage		V _{SD}	I _S =1A, V _{GS} =0V		0.73	1.0	V
Maximum Body-Diode Continuous Current		I _S				46	A
Body Diode Reverse Recovery Time		t _{RR}	I _F =20A, dI/dt=100A/μs		36	45	ns
Body Diode Reverse Recovery Charge		Q _{RR}			47		nC

TYPICAL CHARACTERISTICS



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