



## UT9435HZ

Power MOSFET

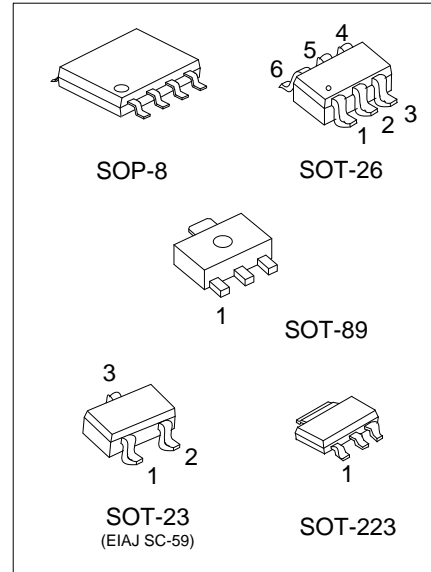
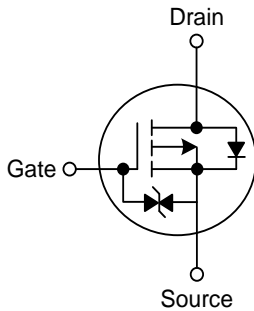
### P-CHANNEL ENHANCEMENT MODE

#### DESCRIPTION

The UTC **UT9435HZ** is a P-channel enhancement power MOSFET. It has low gate charge, fast switching speed and perfect  $R_{DS(ON)}$ .

This device is generally applied in power management applications.

#### SYMBOL



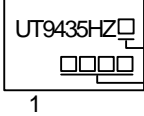

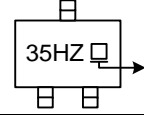
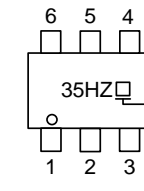
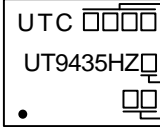
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT9435HZL-AA3-R	UT9435HZG-AA3-R	SOT-223	G	D	S	-	-	-	-	-	Tape Reel
UT9435HZL-AB3-R	UT9435HZG-AB3-R	SOT-89	G	D	S	-	-	-	-	-	Tape Reel
UT9435HZL-AE3-R	UT9435HZG-AE3-R	SOT-23	G	S	D	-	-	-	-	-	Tape Reel
UT9435HZL-AG6-R	UT9435HZG-AG6-R	SOT-26	D	D	G	S	D	D	-	-	Tape Reel
UT9435HZL-S08-R	UT9435HZG-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UT9435HZG-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223, AB3: SOT-89, AE3: SOT-23, AG6: SOT-26, S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

PACKAGE	MARKING
SOT-223	 <p>             L: Lead Free              G: Halogen Free              Date Code         </p>
SOT-89	 <p>             Date Code              L: Lead Free              G: Halogen Free         </p>
SOT-23	 <p>             L: Lead Free              G: Halogen Free         </p>
SOT-26	 <p>             L: Lead Free              G: Halogen Free         </p>
SOP-8	 <p>             Date Code              L: Lead Free              G: Halogen Free              Lot Code         </p>

### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain to Source Voltage	V <sub>DSS</sub>	-30	V
Gate to Source Voltage	V <sub>GSS</sub>	±20	V
Continuous Drain Current (Note 3)	I <sub>D</sub>	-5.3	A
Pulsed Drain Current (Note 1, 2)	I <sub>DM</sub>	-20	A
Power Dissipation	SOT-89	1.31	W
	SOT-23/SOT-26	1.25	W
	SOT-223	1.78	W
	SOP-8	1.38	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

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	RATINGS	UNIT
Junction to Ambient	SOT-89	95	°C/W
	SOT-23/SOT-26	100	°C/W
	SOT-223	70	°C/W
	SOP-8	90	°C/W

### ■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

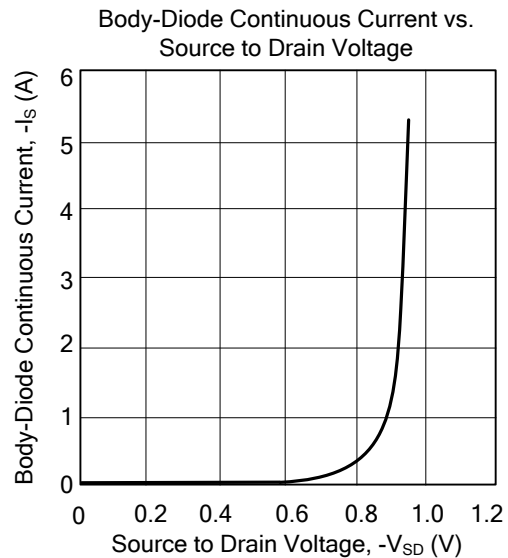
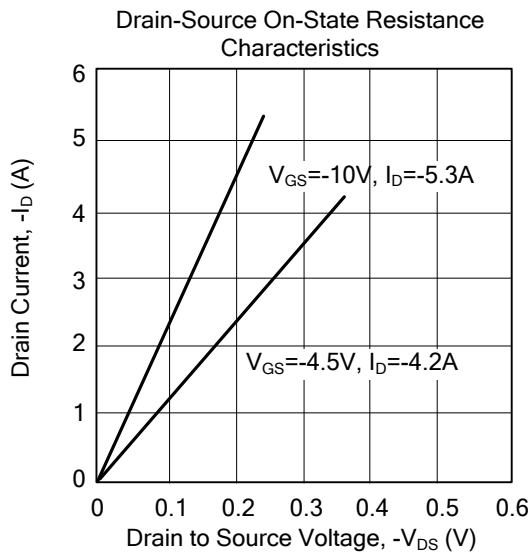
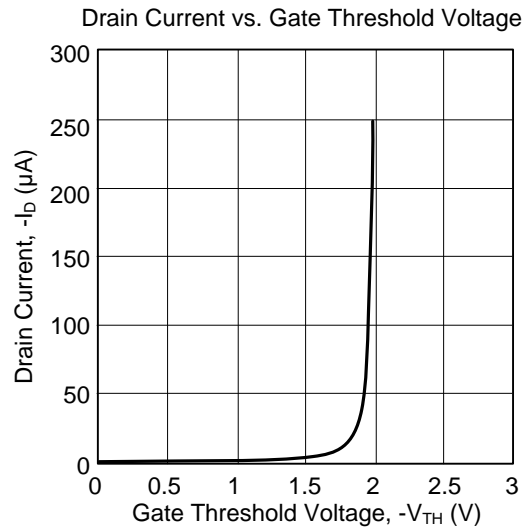
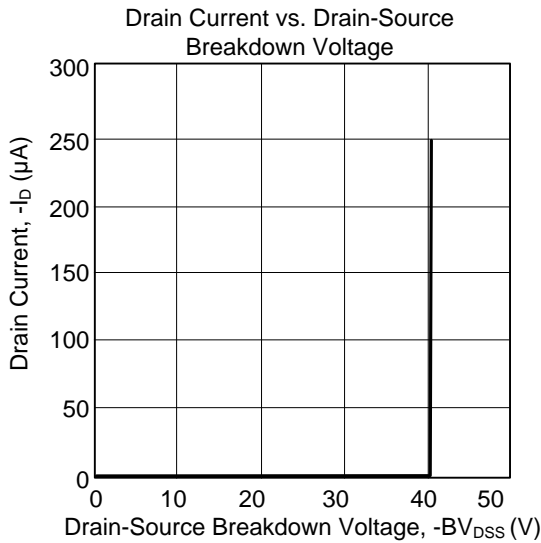
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±5	μA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1		-3	V
Drain-Source On-State Resistance (Note 2)	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-5.3A		44	55	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4.2A		74	135	mΩ
On State Drain Current	I <sub>D(ON)</sub>	V <sub>DS</sub> =-5V, V <sub>GS</sub> =-10V	-20			V
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1.0MHz		600		pF
Output Capacitance	C <sub>OSS</sub>			95		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			85		pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge (Note 2)	Q <sub>G</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-5.3A		50	55	nC
Gate-Source Charge	Q <sub>GS</sub>			5		nC
Gate-Drain Charge	Q <sub>GD</sub>			5		nC
Turn-ON Delay Time (Note 2)	t <sub>D(ON)</sub>	V <sub>DD</sub> =-15V, I <sub>D</sub> =-1A, V <sub>GEN</sub> =-10V, R <sub>G</sub> =6Ω,		33	40	ns
Turn-ON Rise Time	t <sub>R</sub>			31	45	ns
Turn-OFF Delay Time	t <sub>D(OFF)</sub>			122	130	ns
Turn-OFF Fall Time	t <sub>F</sub>			70	90	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source Diode Forward Voltage (Note 2)	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-5.3A		-0.84	-1.3	V

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Pulse width ≤ 300μs, duty cycle ≤ 2%.

3. Device mounted on FR-4 substrate PC board, 2oz copper, with 1in<sup>2</sup> square copper plate.

## ■ TYPICAL CHARACTERISTICS



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