



## UT9435HZ

Power MOSFET

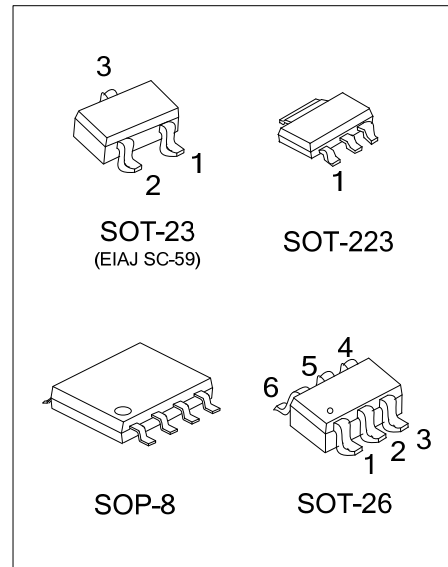
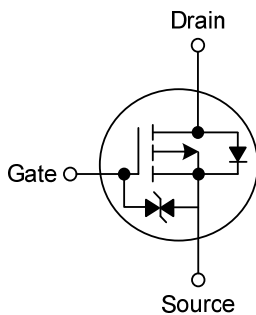
### P-CHANNEL ENHANCEMENT MODE

#### 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



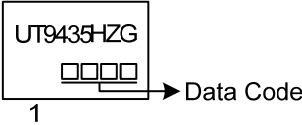
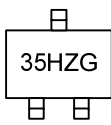
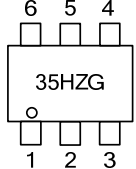
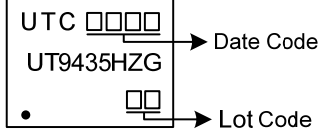
#### ORDERING INFORMATION

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

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

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

<p style="text-align: center;">SOT-223</p> 	<p style="text-align: center;">SOT-23</p> 
<p style="text-align: center;">SOT-26</p> 	<p style="text-align: center;">SOP-8</p> 

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain to Source Voltage	$V_{DSS}$	-30	V
Gate to Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current (Note 3)	$I_D$	$\pm 5.3$	A
Pulsed Drain Current (Note 1, 2)	$I_{DM}$	$\pm 20$	A
Power Dissipation	SOT-223	2.5	W
	SOT-23/ SOT-26	0.38	W
	SOP-8	2.5	W
Junction Temperature	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

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

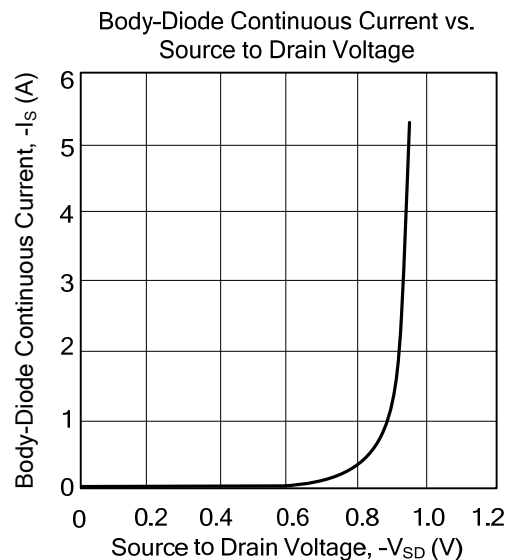
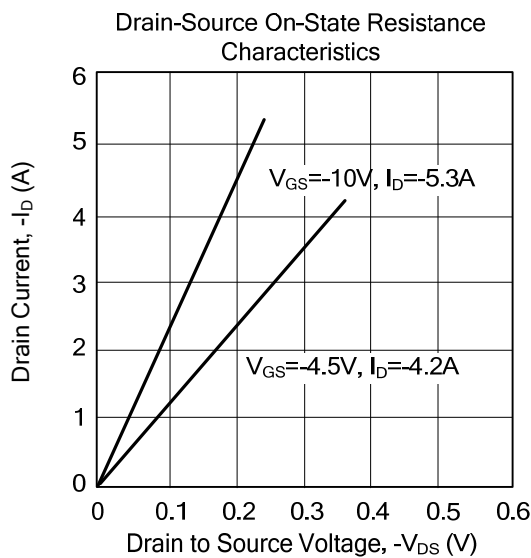
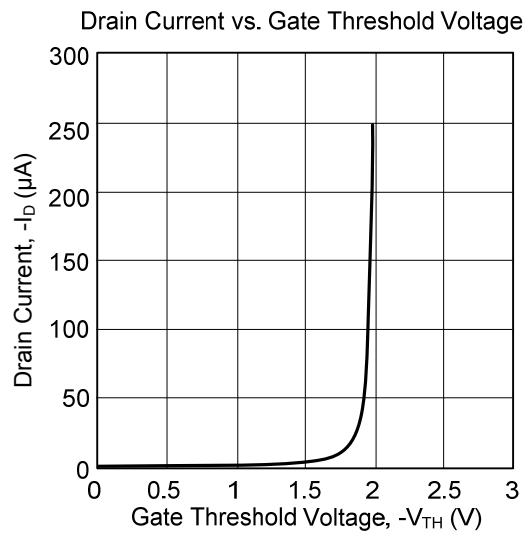
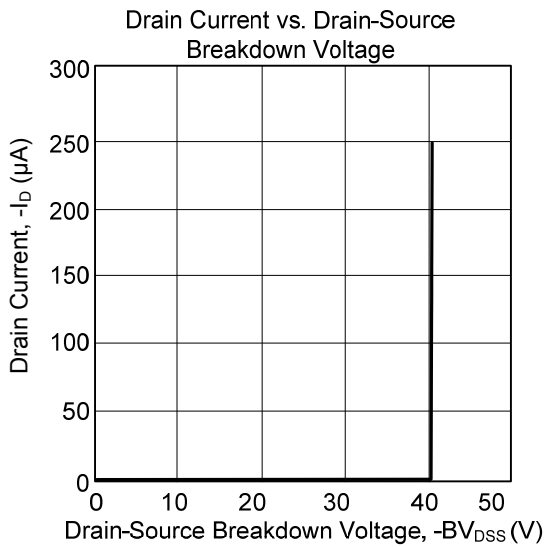
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	SOT-23/SOT-26	325
		SOT-223/SOP-8	50 (Note 3)
			$^{\circ}\text{C/W}$

■ 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	$BV_{DSS}$	$V_{GS}=0\text{V}, I_D=-250\mu\text{A}$	-30			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=-30\text{V}, V_{GS}=0\text{V}$			-1	$\mu\text{A}$
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			$\pm 5$	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-1		-3	V
Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=-10\text{V}, I_D=-5.3\text{A}$		44	55	m $\Omega$
		$V_{GS}=-4.5\text{V}, I_D=-4.2\text{A}$		74	135	m $\Omega$
On State Drain Current	$I_{D(ON)}$	$V_{DS}=-5\text{V}, V_{GS}=-10\text{V}$	-20			V
<b>DYNAMIC PARAMETERS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS}=-15\text{V}, V_{GS}=0\text{V}, f=1.0\text{MHz}$		600		pF
Output Capacitance	$C_{OSS}$			95		pF
Reverse Transfer Capacitance	$C_{RSS}$			85		pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge (Note 2)	$Q_G$	$V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-5.3\text{A}$		50	55	nC
Gate-Source Charge	$Q_{GS}$			5		nC
Gate-Drain Charge	$Q_{GD}$			5		nC
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	$V_{DD}=-15\text{V}, I_D=-1\text{A}, V_{GEN}=-10\text{V}, R_G=6\Omega,$		33	40	ns
Turn-ON Rise Time	$t_R$			31	45	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			122	130	ns
Turn-OFF Fall Time	$t_F$			70	90	ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Drain-Source Diode Forward Voltage (Note 2)	$V_{SD}$	$V_{GS}=0\text{V}, I_S=-5.3\text{A}$		-0.84	-1.3	V

Notes: 1. Pulse width limited by  $T_{J(MAX)}$   
2. Pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2\%$   
3. Surface Mounted on  $1\text{in}^2$  copper pad of FR4 board

### ■ TYPICAL CHARACTERISTICS



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