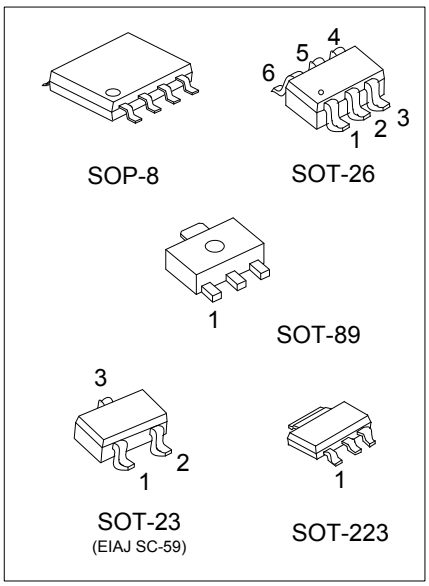
UT9435HZ

Power MOSFET

P-CHANNEL ENHANCEMENT MODE

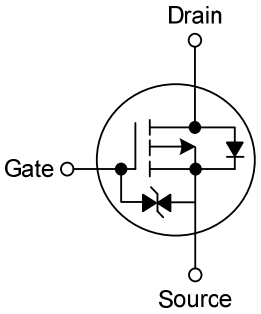


■ DESCRIPTION

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

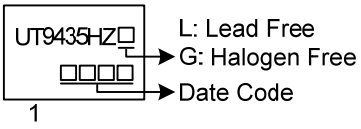
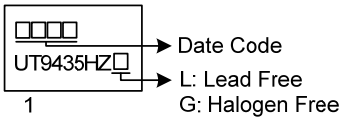
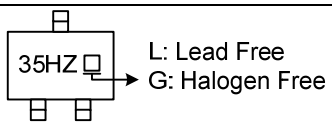
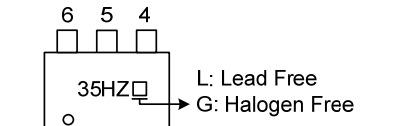
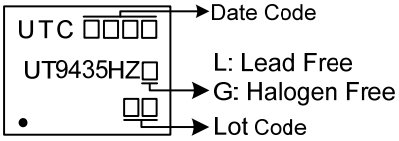
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT9435HZL-AA3-R	UT9435HZG-AA3-R	SOT-223	G	D	S	-	-	-	-	-	Tape Reel
UT9435HZL-AB3-R	UT9435HZG-AB3-R	SOT-89	G	D	S	-	-	-	-	-	Tape Reel
UT9435HZL-AE3-R	UT9435HZG-AE3-R	SOT-23	G	S	D	-	-	-	-	-	Tape Reel
UT9435HZL-AG6-R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

UT9435HZG-AE3-R
- (1) Packing Type
- (2) Package Type
- (3) Green Package

(1) R: Tape Reel
(2) AA3: SOT-223, AB3: SOT-89, AE3: SOT-23, AG6: SOT-26, S08: SOP-8
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

PACKAGE	MARKING
SOT-223	
SOT-89	
SOT-23	
SOP-8	
SOP-8	

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain to Source Voltage		V_{DSS}	-30	V
Gate to Source Voltage		V_{GSS}	±20	V
Continuous Drain Current (Note 3)		I_D	-5.3	A
Pulsed Drain Current (Note 1, 2)		I_{DM}	-20	A
Power Dissipation	SOT-89/SOP-8	P_D	1.2	W
	SOT-23/SOT-26		1.1	W
	SOT-223		1.5	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-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/SOP-8	θ_{JA}	104	°C/W
	SOT-23/SOT-26		113	°C/W
	SOT-223		83	°C/W

Note: Surface mounted on 1 in 2 copper pad of FR4 board, t ≤10s.

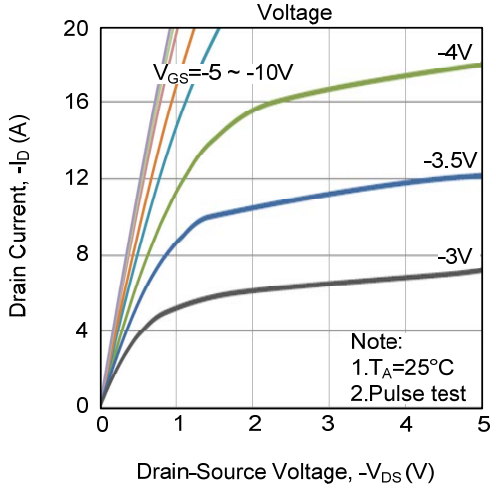
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=-250μA	-30			V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-30V,V_{GS}=0V			-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{DS}=0V ,V_{GS}=±20V			±10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.0		-3.0	V
Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	V_{GS}=-10V,I_D=-5.3A		44	55	mΩ
		V_{GS}=-4.5V, I_D=-4.2A		67	135	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS}=-25V, f=1.0MHz		660		pF
Output Capacitance	C_{OSS}			105		pF
Reverse Transfer Capacitance	C_{RSS}			83		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note 2)	Q_G	V_{DS}=-24V, V_{GS}=-10V, I_D=-5.3A		13		nC
Gate-Source Charge	Q_{GS}			3.3		nC
Gate-Drain Charge	Q_{GD}			2.8		nC
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	V_{DS}=-15V, V_{GS}=-10V, I_D=-5.3A, R_G=3.3Ω,		7		ns
Turn-ON Rise Time	t_R			15		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			18		ns
Turn-OFF Fall Time	t_F			20		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note 2)	V_{SD}	V_{GS}=0V, I_S =-5.3A		-0.84	-1.3	V

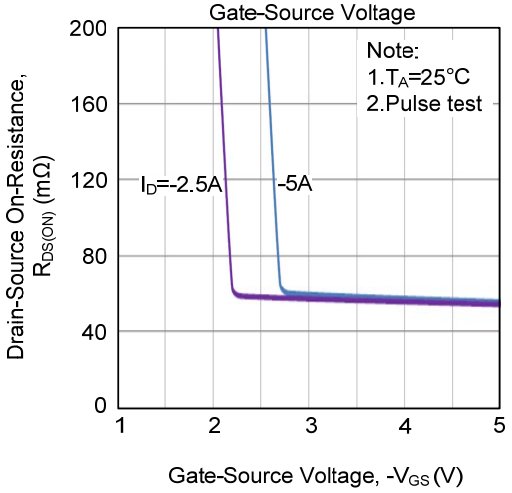
Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Pulse width ≤ 300μs, duty cycle ≤ 2%.
3. Device mounted on FR-4 substrate PC board, 2oz copper, with 1in^2 square copper plate.

■ TYPICAL CHARACTERISTICS

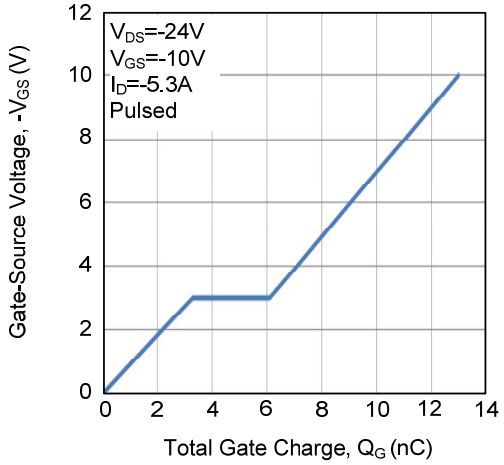
Drain Current vs. Drain-Source Voltage



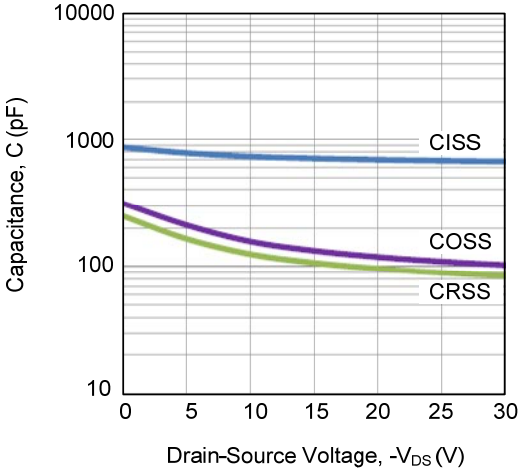
Drain-Source On-Resistance vs. Gate-Source Voltage



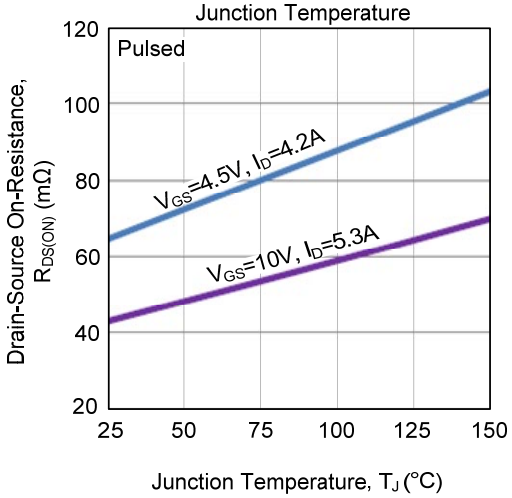
Gate Charge Characteristics



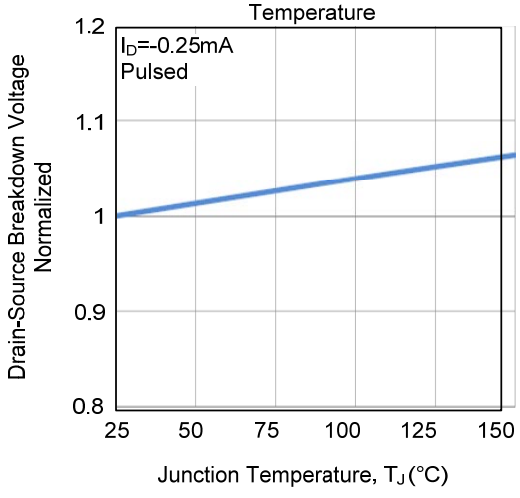
Capacitance Characteristics



Drain-Source On-Resistance vs. Junction Temperature

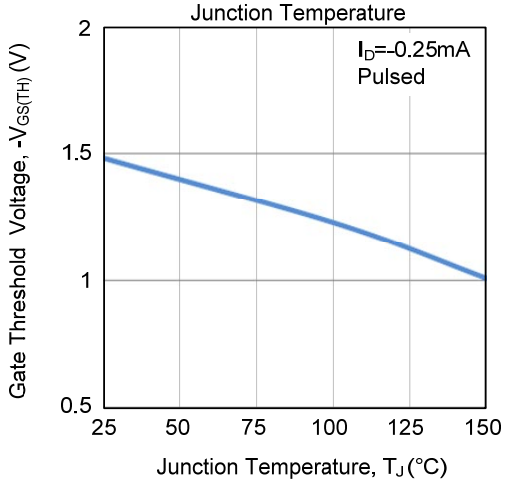


Breakdown Voltage vs. Junction Temperature

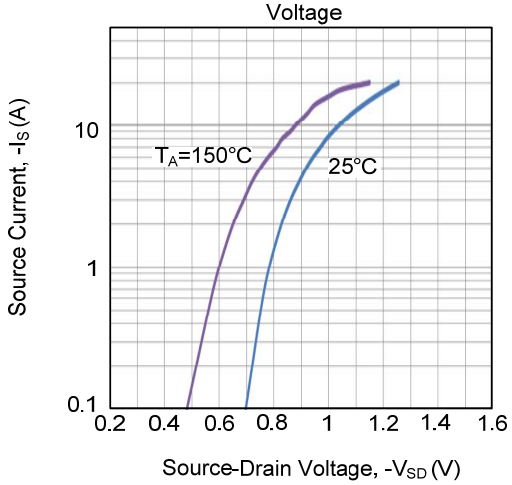


■ TYPICAL CHARACTERISTICS (Cont.)

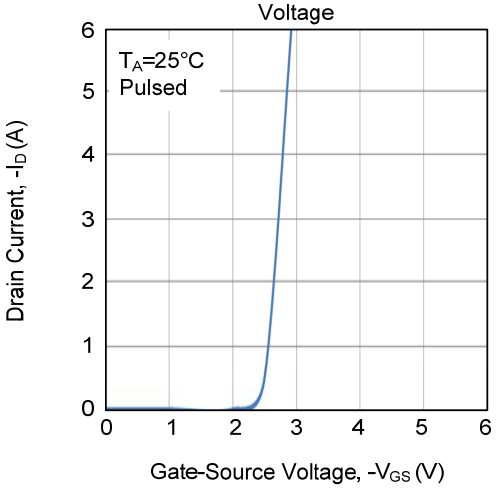
Gate Threshold Voltage vs. Junction Temperature



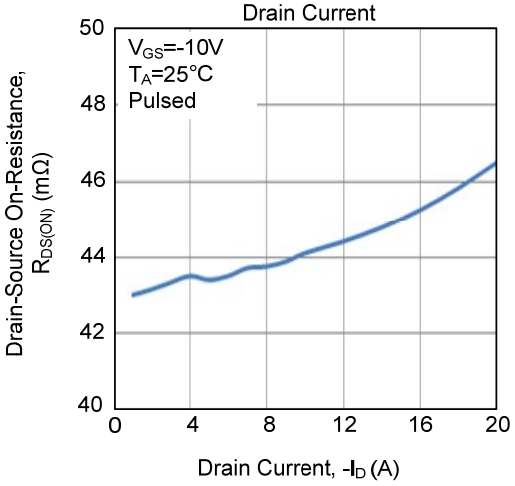
Source Current vs. Source-Drain Voltage



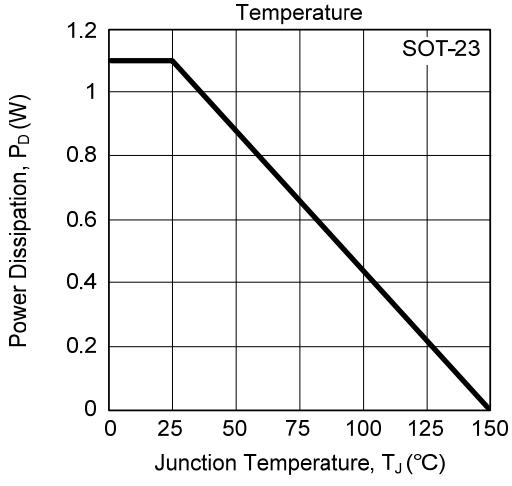
Drain Current vs. Gate-Source Voltage



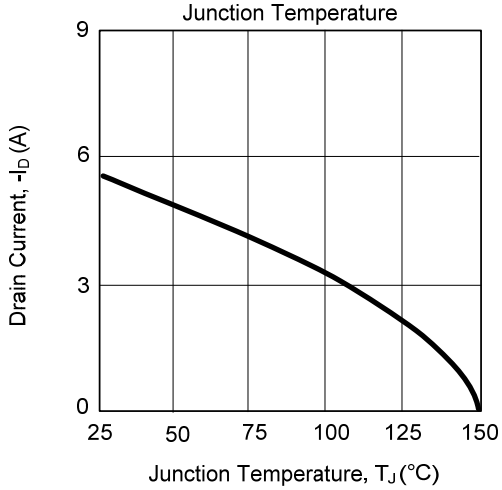
Drain-Source On-Resistance vs. Drain Current



Power Dissipation vs. Junction Temperature



Drain Current vs. Junction Temperature



■ TYPICAL CHARACTERISTICS (Cont.)