



UT9435

Power MOSFET

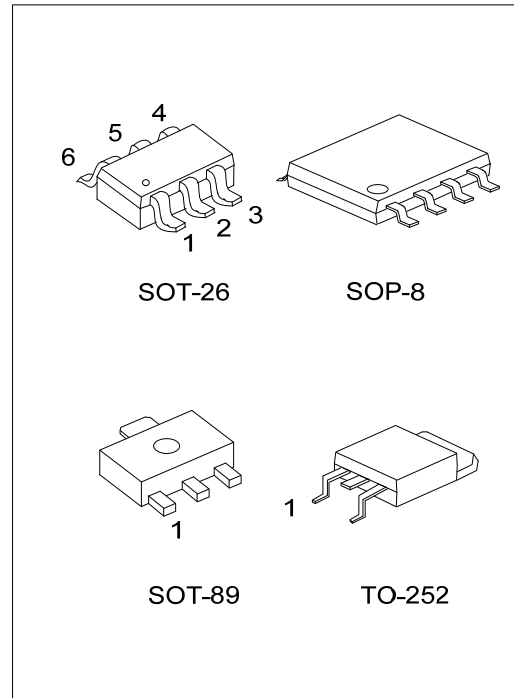
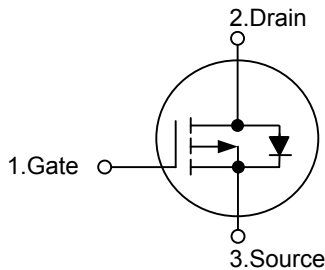
P-CHANNEL ENHANCEMENT MODE

■ DESCRIPTION

The **UT9435** is P-Channel Power MOSFET, designed with high density cell with fast switching speed, ultra low on-resistance, and excellent thermal and electrical capabilities.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT9435L-AB3-R	UT9435G-AB3-R	SOT-89	G	D	S	-	-	-	-	-	Tape Reel
UT9435L-AG6-R	UT9435G-AG6-R	SOT-26	D	D	G	S	D	D	-	-	Tape Reel
UT9435L-TN3-R	UT9435G-TN3-R	TO-252	G	D	S	-	-	-	-	-	Tape Reel
UT9435L-S08-R	UT9435G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

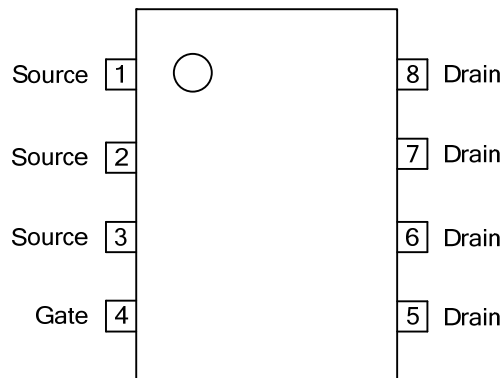
Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UT9435G-AB3-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) AB3: SOT-89, AG6: SOT-26, TN3: TO-252, S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

PACKAGE	MARKING
SOT-89	
SOT-26	
SOP-8	
TO-252	

■ PIN CONFIGURATION (For SOP-8)



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

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage		V_{DSS}	-30	V	
Gate-Source Voltage		V_{GSS}	± 20	V	
Continuous Drain Current		I_D	-4.2	A	
Pulsed Drain Current (Note 1, 2)		I_{DM}	-20	A	
Power Dissipation ($T_A = 25^\circ\text{C}$)	SOT-89	P_D	0.69	W	
	SOT-26		0.5		
	SOP-8		2.5		
Power Dissipation ($T_C = 25^\circ\text{C}$)		TO-252	P_D	12.5	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	SOT-89	θ_{JA}	180	$^\circ\text{C/W}$
	SOT-26		245	
	TO-252		110	
	SOP-8		50	

Note: Surface mounted on 1 in² copper pad of FR4 board, $t \leq 10s$.

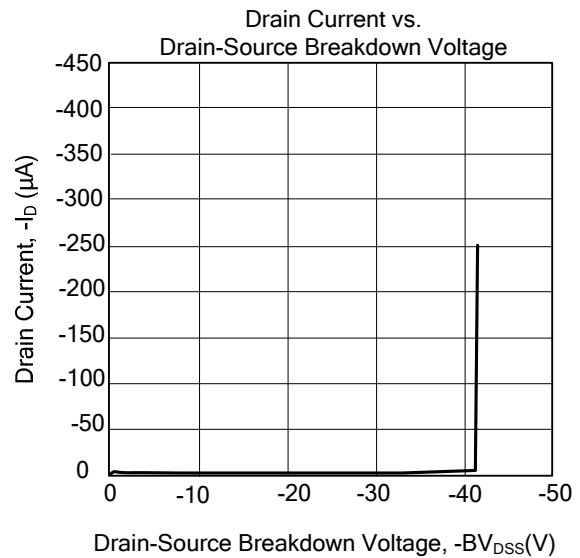
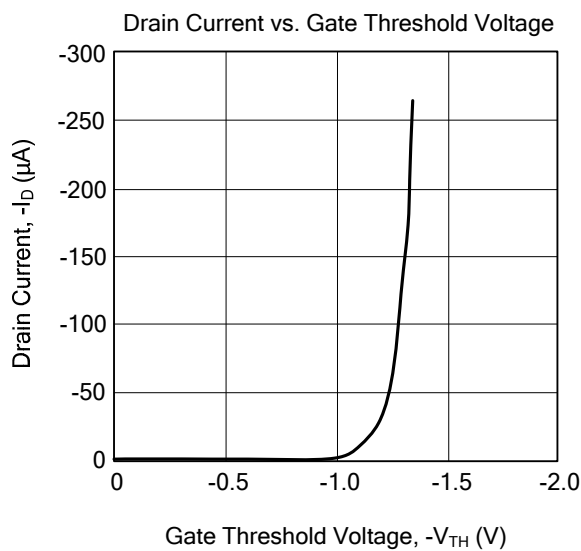
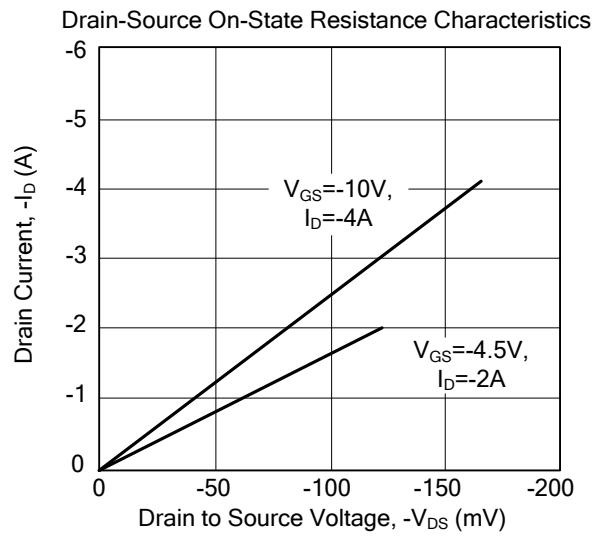
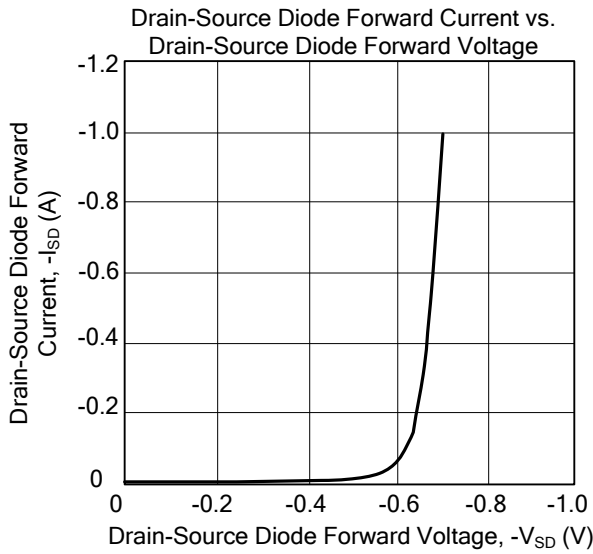
■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{V}, I_D = -250\text{uA}$	-30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -30\text{V}, V_{GS} = 0\text{V}$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 20\text{V}$			± 100	nA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to $25^\circ\text{C}, I_D = -1\text{mA}$		-0.1		$\text{V}/^\circ\text{C}$
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = -250\text{uA}$	-1		-3	V
Static Drain-Source On-Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS} = -10\text{V}, I_D = -4\text{A}$			50	$\text{m}\Omega$
		$V_{GS} = -4.5\text{V}, I_D = -2\text{A}$			90	$\text{m}\Omega$
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{GS} = 0\text{V}, V_{DS} = -25\text{V}, f = 1.0\text{MHz}$		520	830	pF
Output Capacitance	C_{OSS}		180			pF
Reverse Transfer Capacitance	C_{RSS}		130			pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 2)	Q_G	$V_{DS} = -25\text{V}, V_{GS} = -4.5\text{V}, I_D = -4\text{A}$		10	16	nC
Gate-Source Charge	Q_{GS}		2			nC
Gate-Drain Charge	Q_{GD}		6			nC
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	$V_{DS} = -15\text{V}, I_D = -1\text{A}, R_G = 3.3\Omega, V_{GS} = -10\text{V}, R_D = 15\Omega$		10	48	ns
Turn-ON Rise Time	t_R		7	40	ns	
Turn-OFF Delay Time	$t_{D(OFF)}$		26	292	ns	
Turn-OFF Fall Time	t_F		14	112	ns	
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S = -1\text{A}, V_{GS} = 0\text{V}$			-1.3	V
Reverse Recovery Time	t_{rr}	$I_S = -4\text{A}, V_{GS} = 0\text{V},$		30		ns
Reverse Recovery Charge	Q_{rr}	$di/dt = -100\text{A}/\mu\text{s}$		24		nC

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

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

■ TYPICAL CHARACTERISTICS



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