



UT9435

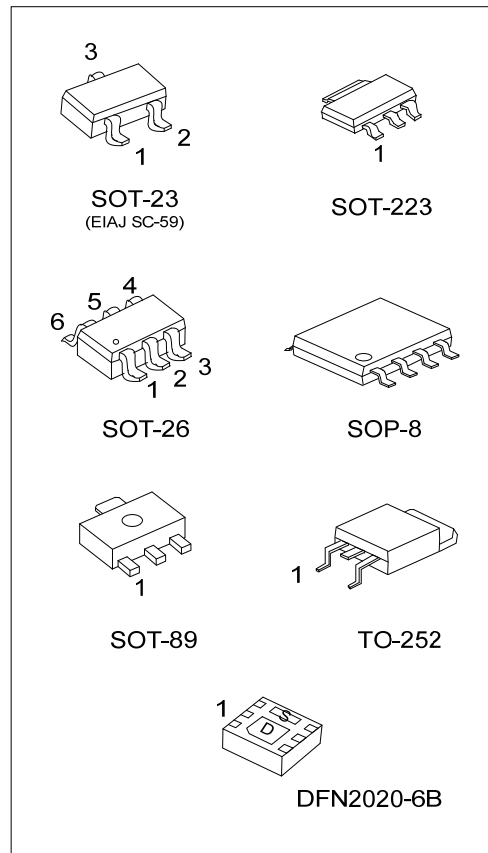
Power MOSFET

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

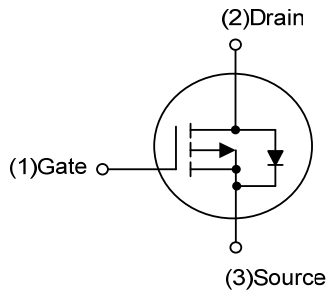
DESCRIPTION

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

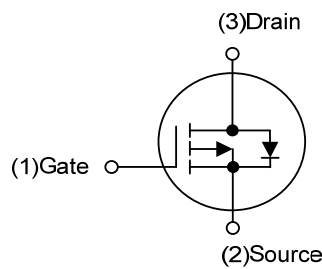
Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.



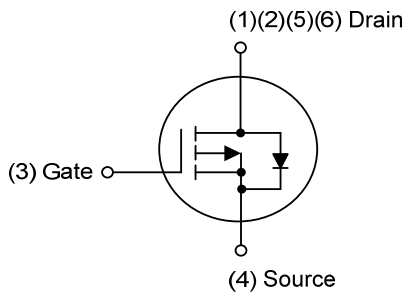
SYMBOL



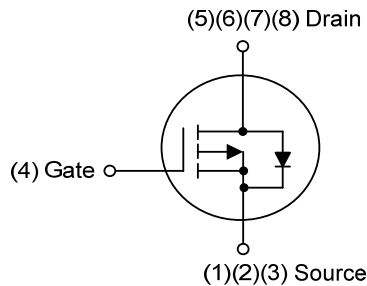
SOT-223/SOT-89/TO-252



SOT-23



SOT-26/DFN2020-6B



SOP-8

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT9435L-AA3-R	UT9435G-AA3-R	SOT-223	G	D	S	-	-	-	-	-	Tape Reel
UT9435L-AE3-R	UT9435G-AE3-R	SOT-23	G	S	D	-	-	-	-	-	Tape Reel
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
UT9435L-K06B-2020-R	UT9435G-K06B-2020-R	DFN2020-6B	D	D	G	S	D	D	-	-	Tape Reel

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

<p>UT9435G-AA3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223, AB3: SOT-89, AE3: SOT-23 AG6: SOT-26 TN3: TO-252, S08: SOP-8 K06B-2020: DFN2020-6B (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

<p>SOT-223</p> <p>UT9435 L: Lead Free G: Halogen Free Date Code</p>	<p>SOT-89</p> <p>Date Code UT9435 L: Lead Free G: Halogen Free</p>
<p>SOT-23</p> <p>435 L: Lead Free G: Halogen Free</p>	<p>SOT-26</p> <p>435 L: Lead Free G: Halogen Free</p>
<p>TO-252</p> <p>UTC UT9435 L: Lead Free G: Halogen Free Date Code Lot Code</p>	<p>SOP-8</p> <p>Date Code UTC UT9435 L: Lead Free G: Halogen Free Lot Code</p>
<p>DFN2020-6B</p> <p>435 L: Lead Free G: Halogen Free Date Code</p>	<p>-</p>

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	-5.3	A
Pulsed Drain Current (Note 1, 2)		I _{DM}	-20	A
Power Dissipation (T _A =25°C)	SOT-223	P _D	2	W
	SOT-89		1.4	W
	SOT-23 SOT-26		1.3	W
	SOP-8		1.5	W
	DFN2020-6B		2.3	W
Power Dissipation (T _C =25°C)	TO-252	P _D	48	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 (T _A =25°C)	SOT-223	θ _{JA}	62.5	°C/W
	SOT-89		89	°C/W
	SOT-23 SOT-26		96	°C/W
	TO-252		50	°C/W
	SOP-8		83	°C/W
	DFN2020-6B		54	°C/W
Case to Ambient (T _C =25°C)	TO-252	θ _{JC}	2.6	°C/W

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

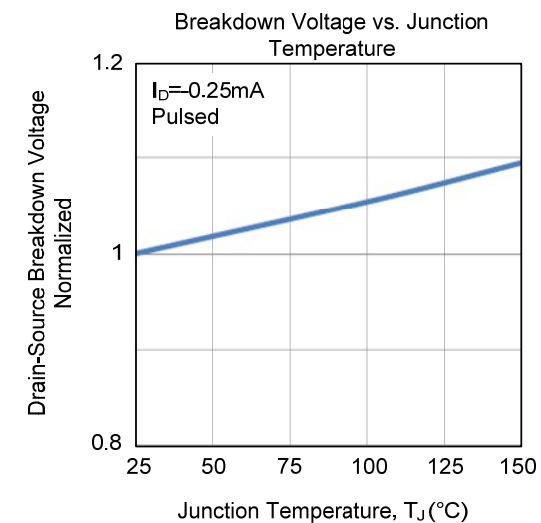
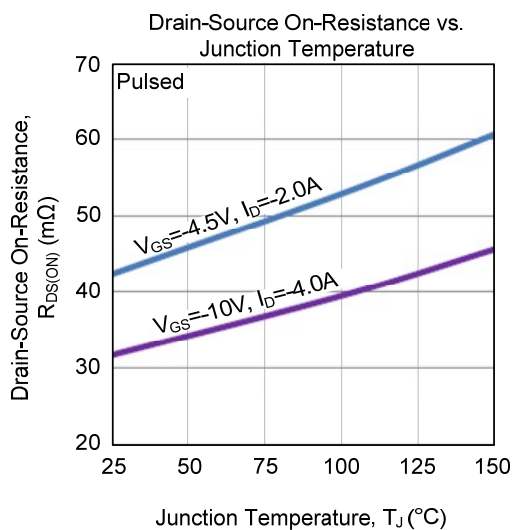
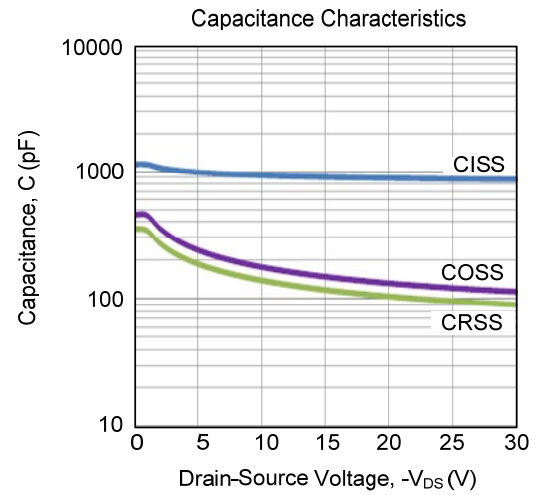
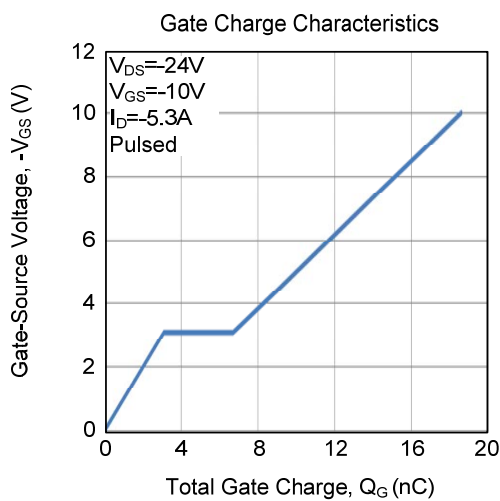
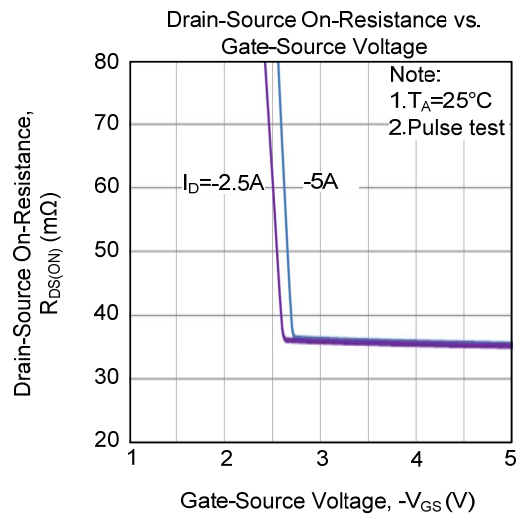
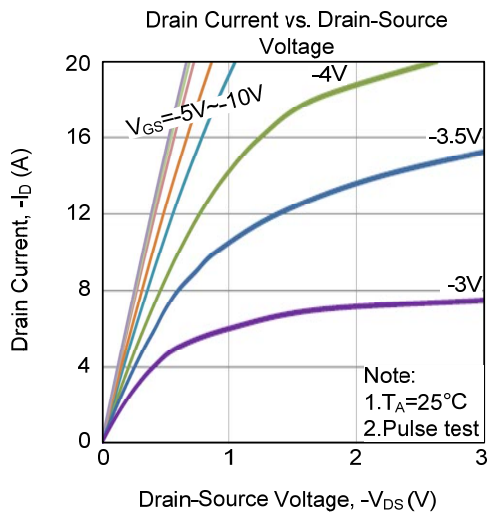
■ ELECTRICAL CHARACTERISTICS (T_J =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _D =-250 uA	-30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250uA	-1.0		-3.0	V
Static Drain-Source On-Resistance (Note 2)	R _{DS(ON)}	V _{GS} =-10V, I _D =-4.0A			50	mΩ
		V _{GS} =-4.5V, I _D =-2.0A			90	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-25V, f=1.0MHz		860		pF
Output Capacitance	C _{OSS}			128		pF
Reverse Transfer Capacitance	C _{RSS}			100		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 2)	Q _G	V _{DS} =-24V, V _{GS} =-10V, I _D =-4.0A		22		nC
Gate-Source Charge	Q _{GS}			3.5		nC
Gate-Drain Charge	Q _{GD}			5		nC
Turn-ON Delay Time (Note 2)	t _{D(ON)}	V _{DS} =-15V, V _{GS} =-10V, I _D =-1.0A, R _G =3.3Ω		6		ns
Turn-ON Rise Time	t _R			17		ns
Turn-OFF Delay Time	t _{D(OFF)}			40		ns
Turn-OFF Fall Time	t _F			29		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =-1.0A, V _{GS} =0V			-1.3	V

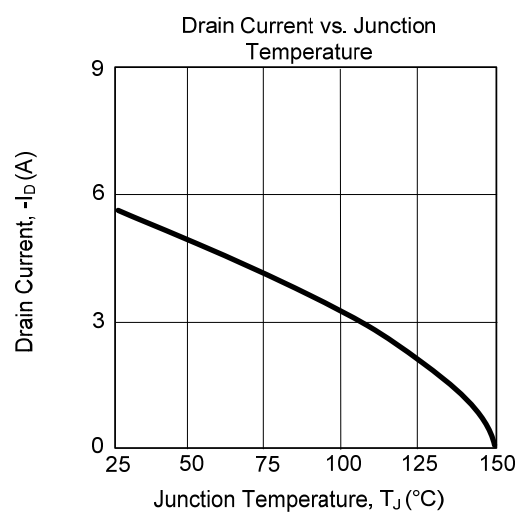
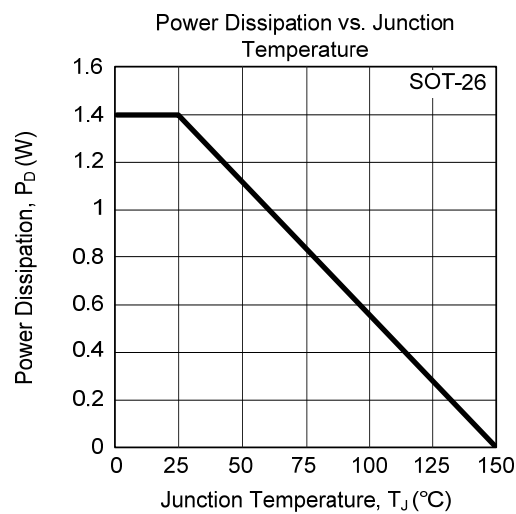
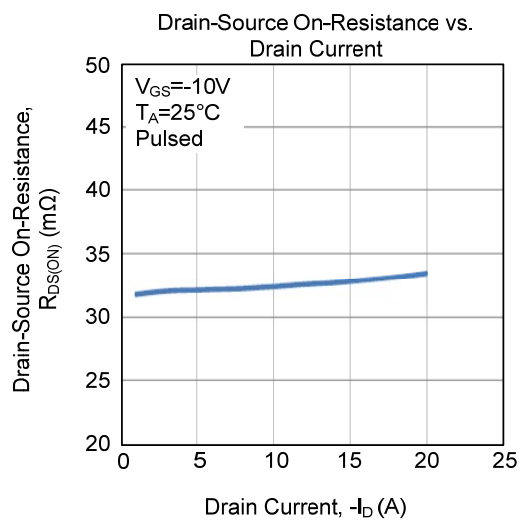
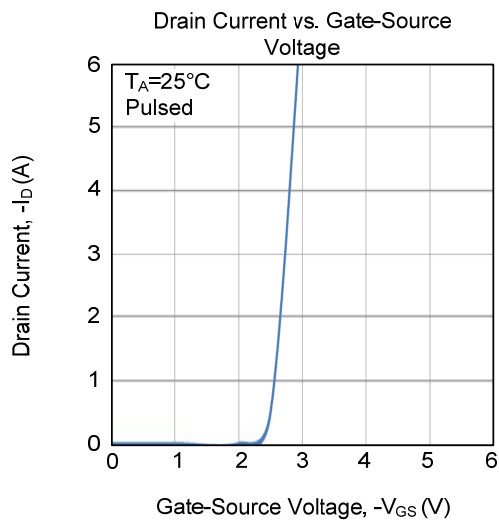
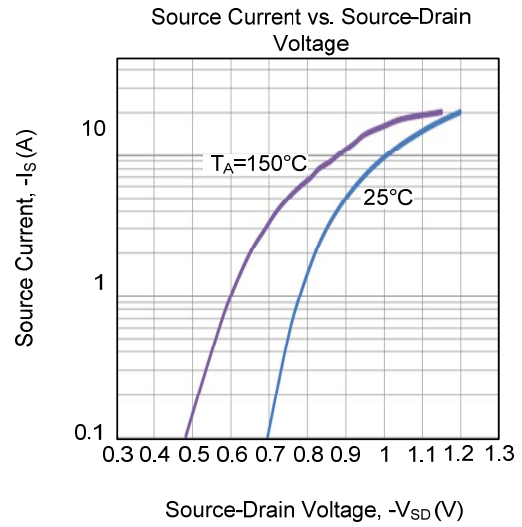
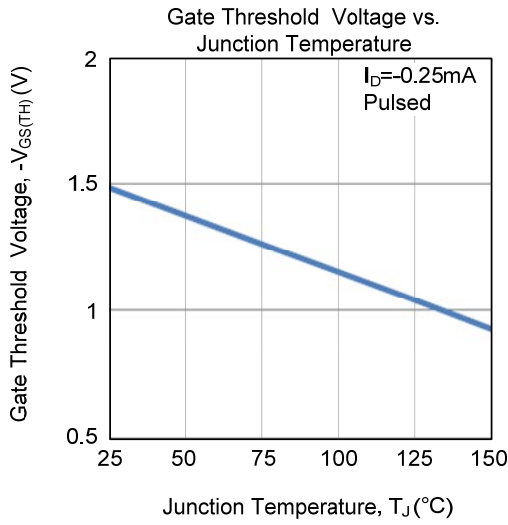
Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

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

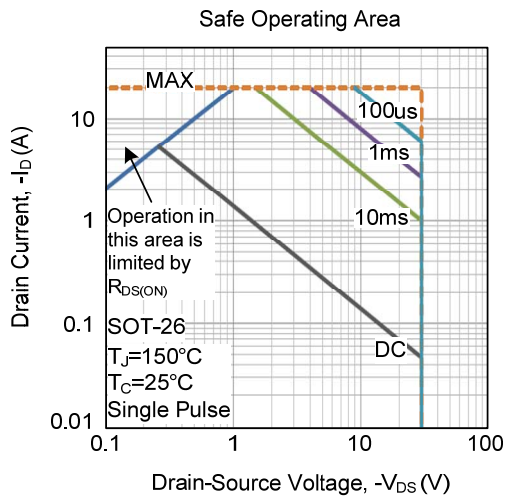
TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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