



UT8205A

Power MOSFET

N-CHANNEL ENHANCEMENT MODE

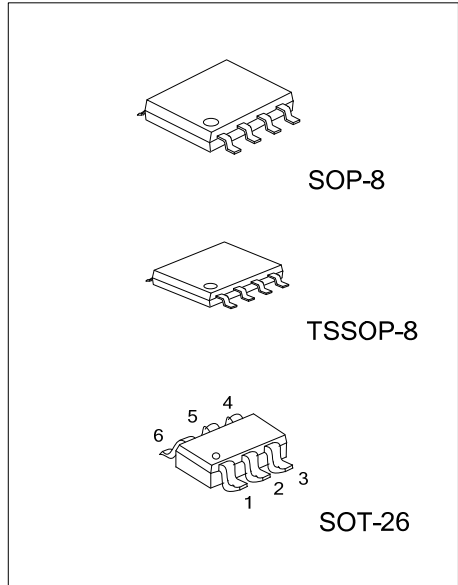
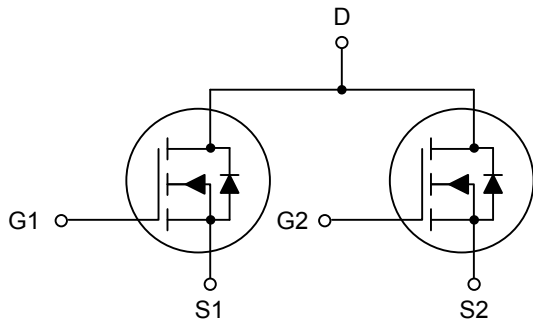
DESCRIPTION

The **UT8205A** uses advanced technology to provide fast switching, low on-resistance and cost-effectiveness. This device is suitable for all commercial-industrial surface mount applications.

FEATURES

- * $R_{DS(ON)} \leq 28 \text{ m}\Omega @ V_{GS}=4.5\text{V}, I_D=6.0\text{A}$
- * Ultra low gate charge (typical 23 nC)
- * Low reverse transfer Capacitance ($C_{RSS} = \text{typical } 150 \text{ pF}$)
- * Fast switching capability
- * Avalanche energy Specified
- * Improved dv/dt capability, high ruggedness

SYMBOL



ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT8205AG-AG6-R	SOT-26	S1	D	S2	G2	D	G1	-	-	Tape Reel
UT8205AG-S08-R	SOP-8	D	S1	S1	G1	G2	S2	S2	D	Tape Reel
UT8205AG-P08-R	TSSOP-8	D	S1	S1	G1	G2	S2	S2	D	Tape Reel

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

<p>UT8205AG-AG6-R</p>	<p>(1) R: Tape Reel (2) AG6: SOT-26, P08: TSSOP-8, S08: SOP-8 (3) G: Halogen Free and Lead Free</p>
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MARKING

SOP-8	TSSOP-8	SOT-26

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	V_{DSS}	20	V	
Gate-Source Voltage	V_{GSS}	± 12	V	
Drain Current (Note 2)	Continuous	I_D	6	A
	Pulsed	I_{DM}	20	A
Power Dissipation ($T_a=25^\circ\text{C}$) (Note 3)	SOT-26	P_D	1.14	W
	SOP-8/TSSOP-8		1	W
Junction Temperature	T_J	+150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$	

Notes: 1. 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.

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

3. Pulse width limited by $T_{J(MAX)}$

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT	
Junction to Ambient (Note)	θ_{JA}	SOT-26	110	$^\circ\text{C/W}$
		SOP-8	78	$^\circ\text{C/W}$
		TSSOP-8	125	$^\circ\text{C/W}$

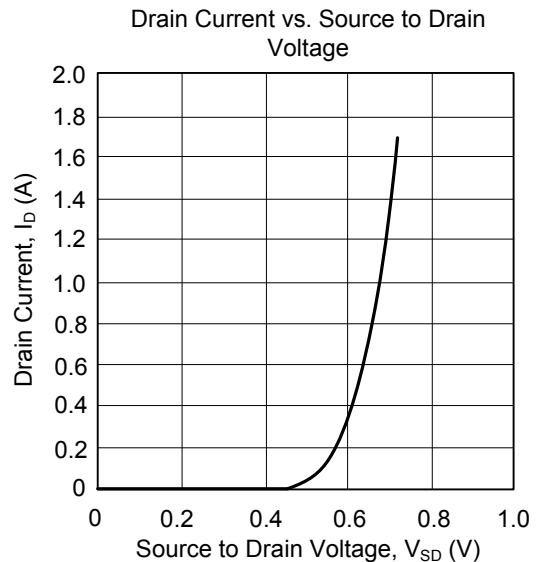
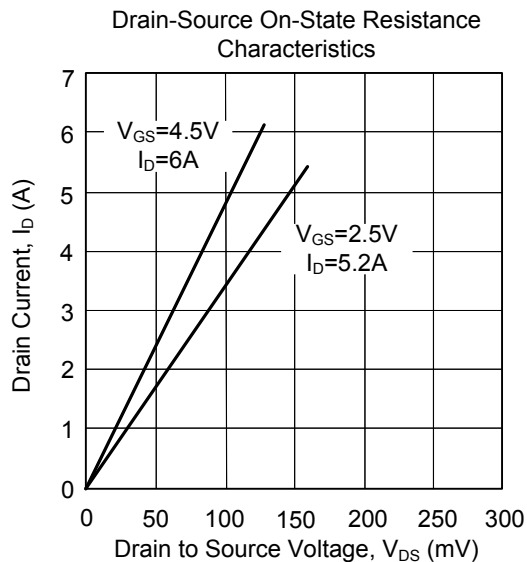
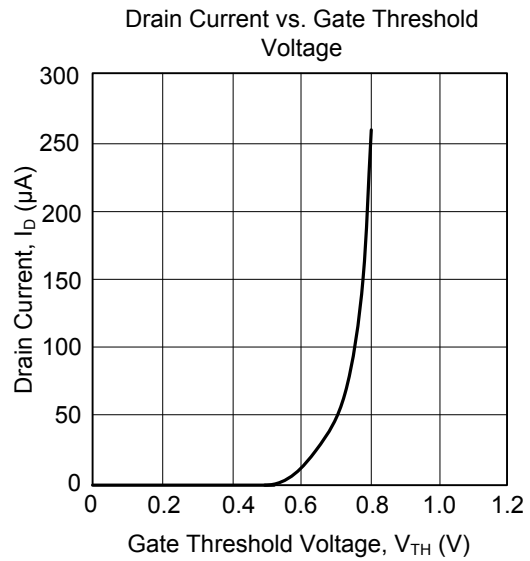
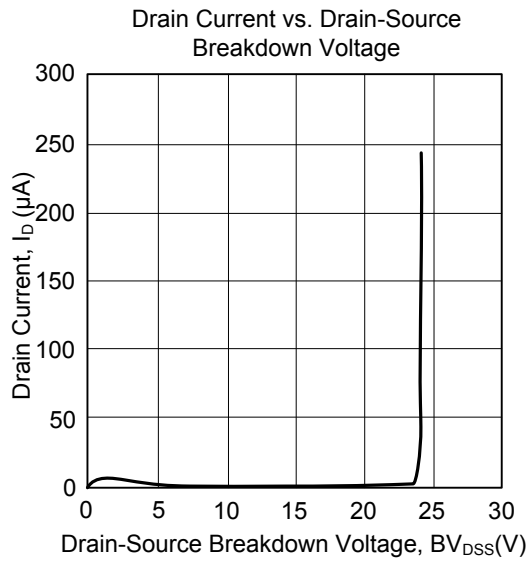
Note: Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

■ 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}	$V_{GS}=0V, I_D=250\mu\text{A}$	20			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	$I_D=1\text{mA}$, Reference to 25°C		0.03		$\text{V}/^\circ\text{C}$
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V,$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	0.5		1.5	V
Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6.0A$			28	m Ω
		$V_{GS}=2.5V, I_D=5.2A$			38	m Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS}=20V, V_{GS}=0V, f=1.0\text{MHz}$		1035		pF
Output Capacitance	C_{OSS}			320		pF
Reverse Transfer Capacitance	C_{RSS}			150		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{GS}=5V, V_{DS}=10V, R_D=10\Omega, R_G=6\Omega, I_D=1A$		30		ns
Turn-ON Rise Time	t_R			70		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			40		ns
Turn-OFF Fall-Time	t_F			65		ns
Total Gate Charge(Note)	Q_G	$V_{DS}=20V, V_{GS}=5V, I_D=6.0A$		23		nC
Gate Source Charge	Q_{GS}			4.5		nC
Gate Drain Charge	Q_{GD}			7		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V_{SD}	$I_S=1.7A, V_{GS}=0V$			1.2	V
Diode Continuous Forward Current	I_S	$V_D=V_G, V_S=1.3V$			1.54	A

Note: Surface mounted on 1 in² copper pad of FR4 board; 208 $^\circ\text{C/W}$ when mounted on min.

■ TYPICAL CHARACTERISTICS



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