



UT8205A

Power MOSFET

N-CHANNEL ENHANCEMENT MODE

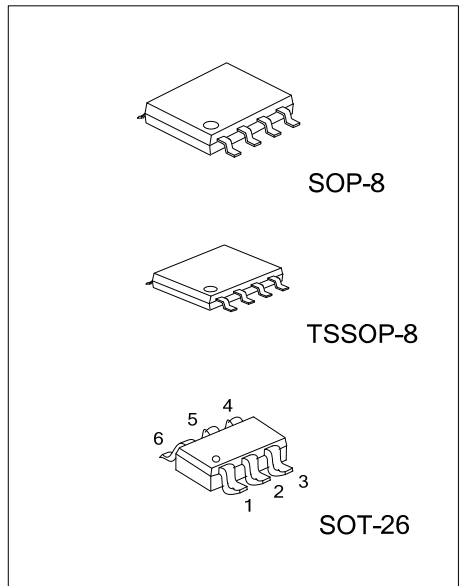
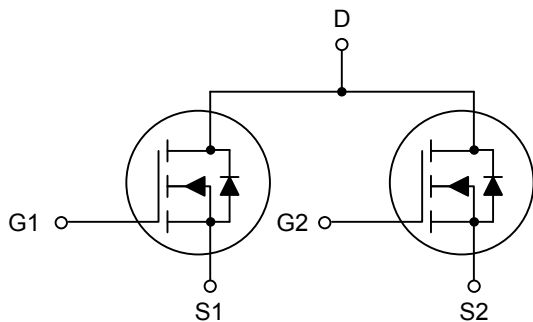
DESCRIPTION

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

- * $R_{DS(ON)} \leq 28m\Omega @ V_{GS}=4.5V, I_D=6.0A$
- * Fast switching capability
- * Avalanche energy Specified
- * Improved dv/dt capability, high ruggedness

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT8205AL-AL6-R	UT8205AG-AG6-R	SOT-26	S1	D	S2	G2	D	G1	-	-	Tape Reel
UT8205AL-S08-R	UT8205AG-S08-R	SOP-8	D	S1	S1	G1	G2	S2	S2	D	Tape Reel
UT8205AL-P08-R	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) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AG6: SOT-26, P08: TSSOP-8, S08: SOP-8</p> <p>(3) G: Halogen Free and Lead Free, L: 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}	± 8	V
Drain Current (Note 3)	Continuous	I_D	6	A
	Pulsed	I_{DM}	20	A
Power Dissipation ($T_A=25^\circ\text{C}$) (Note 2)	SOT-26	P_D	1.14	W
	SOP-8		1.6	W
	TSSOP-8		1.5	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. Repetitive Rating: Pulse width limited by maximum junction temperature.

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

■ THERMAL DATA (Note)

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-26	θ_{JA}	110	$^\circ\text{C/W}$
	SOP-8		78	$^\circ\text{C/W}$
	TSSOP-8		83	$^\circ\text{C/W}$

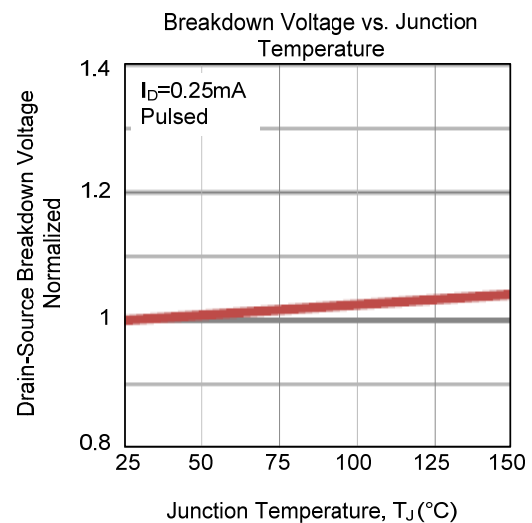
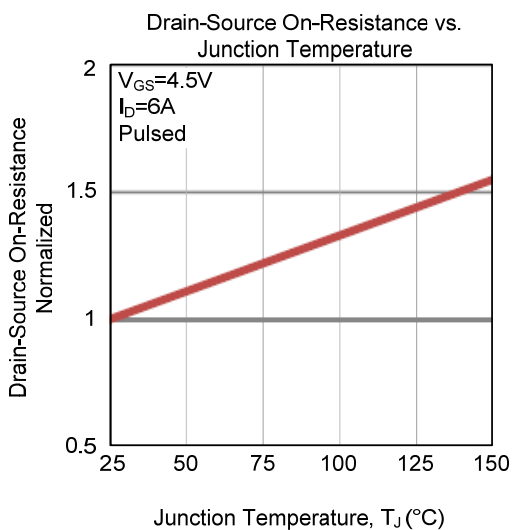
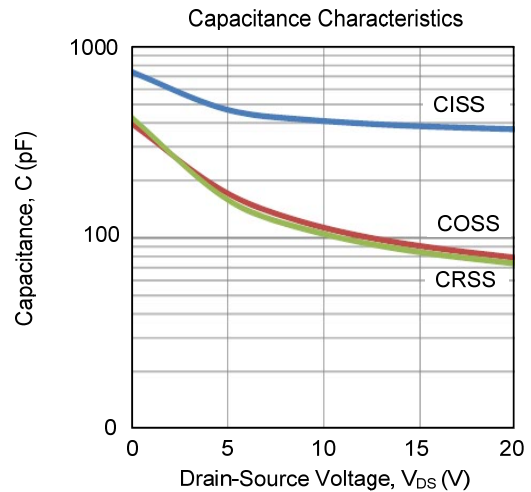
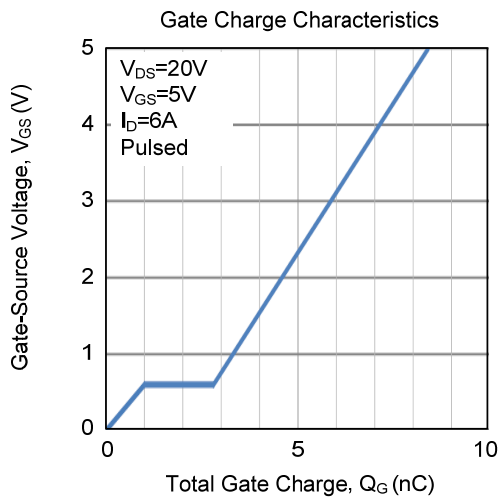
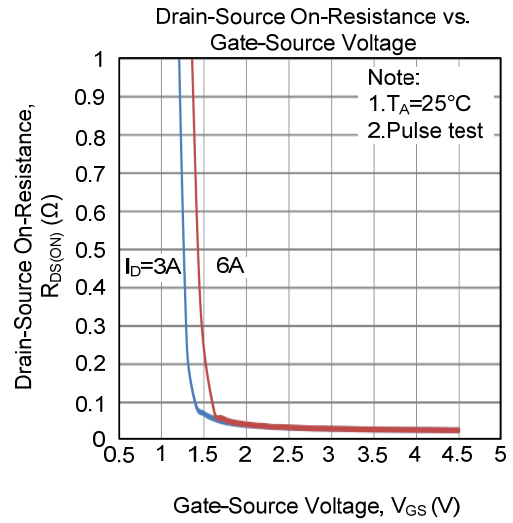
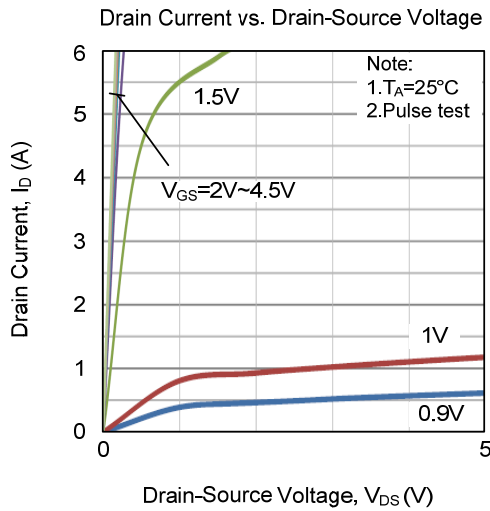
Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

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

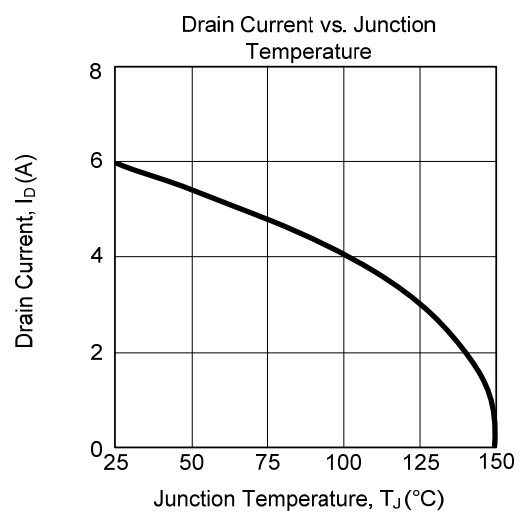
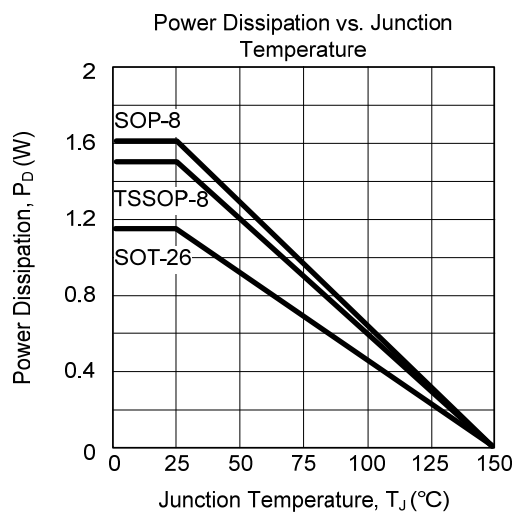
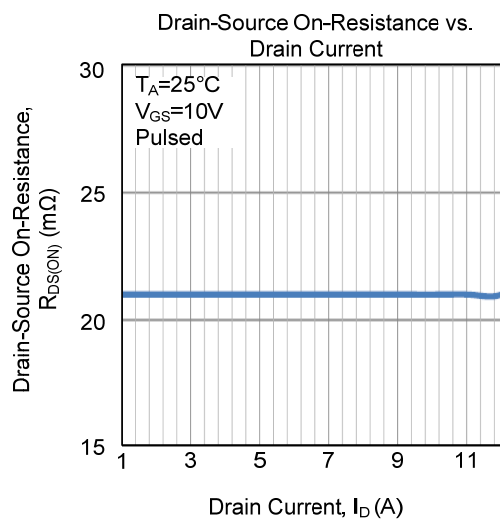
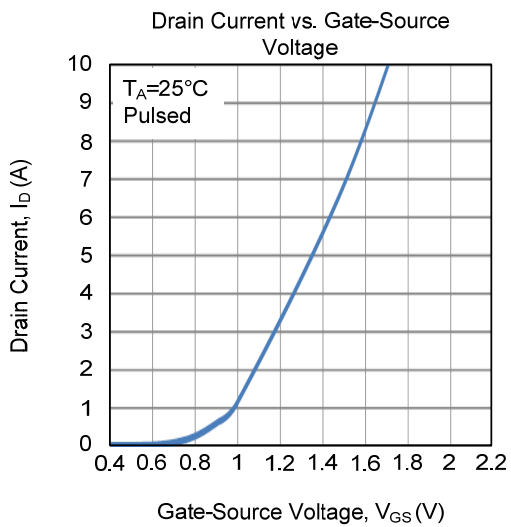
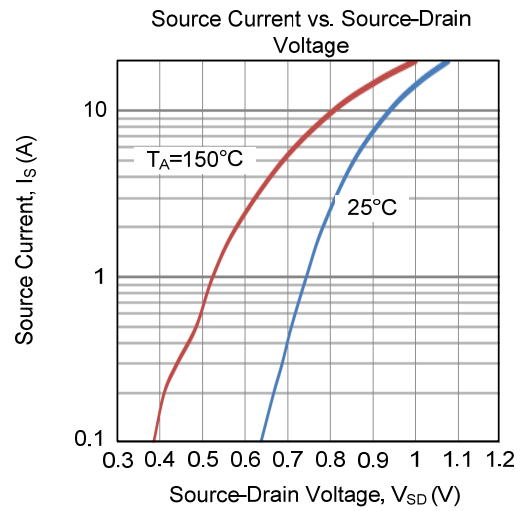
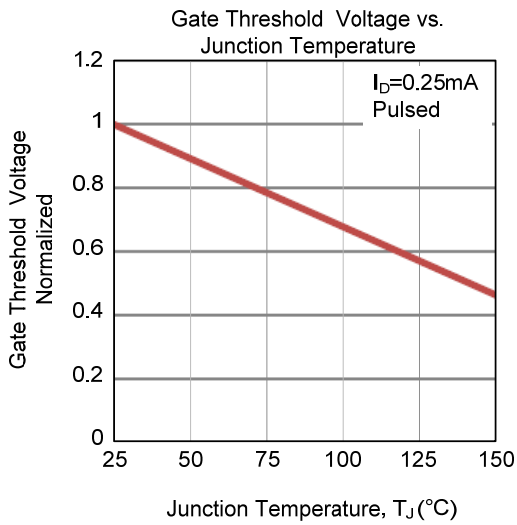
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu\text{A}$	20			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	$I_D=1\text{mA}$, Reference to 25°C		0.03		$V/^\circ\text{C}$
Drain-Source 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	$\text{m}\Omega$
		$V_{GS}=2.5V, I_D=5.2A$			38	$\text{m}\Omega$
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{DS}=20V, V_{GS}=0V, f=1.0\text{MHz}$		370		pF
Output Capacitance	C_{OSS}			78		pF
Reverse Transfer Capacitance	C_{RSS}			73		pF
SWITCHING PARAMETERS						
Total Gate Charge(Note)	Q_G	$V_{DS}=20V, V_{GS}=5V, I_D=6.0A$		8.4		nC
Gate Source Charge	Q_{GS}			1		nC
Gate Drain Charge	Q_{GD}			1.8		nC
Turn-ON Delay Time (Note)	$t_{D(ON)}$	$V_{GS}=5V, V_{DS}=10V, R_D=10\Omega,$ $R_G=6\Omega, I_D=6A$		3.6		ns
Turn-ON Rise Time	t_R			2.7		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			19		ns
Turn-OFF Fall-Time	t_F			7.6		ns
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: Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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