



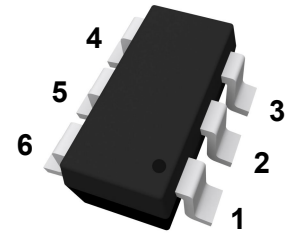
PJ8205

N-Channel Power MOSFET

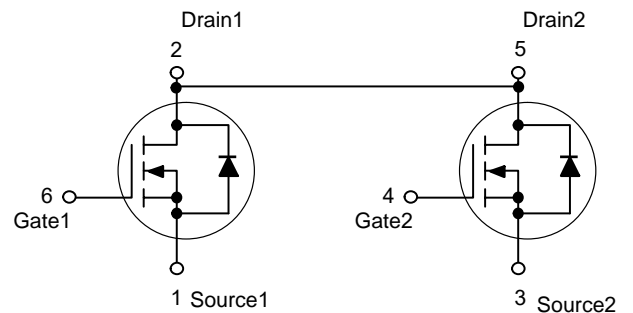
Features

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- High Power and Current handing capability

SOT-23-6



Schematic Diagram



Absolute Maximum Ratings

Ratings at $T_c = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5	A
Pulsed Drain Current ^{Note1}	I_{DM}	25	A
Power Dissipation	P_D	1.25	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	$^\circ\text{C}$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	100	$^\circ\text{C/W}$



Electrical Characteristics

$T_C = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 12\text{V}$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu\text{A}$	0.5	0.7	1.2	V
Static Drain-Source On-Resistance ^{Note3}	$R_{DS(on)}$	$V_{GS}=2.5\text{V}, I_D=4\text{A}$	--	25	32	$\text{m}\Omega$
		$V_{GS}=4.5\text{V}, I_D=5\text{A}$	--	20	25	$\text{m}\Omega$
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5\text{V}, I_D=5\text{A}$	--	10	--	S
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}, V_{DS}=10\text{V}, f=1\text{MHz}$	--	550	--	pF
Output Capacitance	C_{oss}		--	125	--	pF
Reverse Transfer Capacitance	C_{rss}		--	64	--	pF
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=4.5\text{V}, V_{DS}=10\text{V}, I_D=5\text{A}$	--	9.5	--	nC
Gate Source Charge	Q_{gs}		--	2.1	--	nC
Gate Drain Charge	Q_{gd}		--	1.4	--	nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS}=4\text{V}, V_{DD}=10\text{V}, I_D=5\text{A}$ $R_{GEN}=10\Omega$	--	9	--	ns
Turn-On Rise Time	t_r		--	10	--	ns
Turn-Off DelayTime	$t_{D(off)}$		--	32	--	ns
Turn-Off Fall Time	t_f		--	24	--	ns
Source-Drain Diode Parameters						
Body Diode Forward Voltage	V_{SD}	$I_S=5\text{A}, V_{GS}=0\text{V}$	--	0.8	1.2	V
Body Diode Continuous Source Current	I_S		--	--	5	A

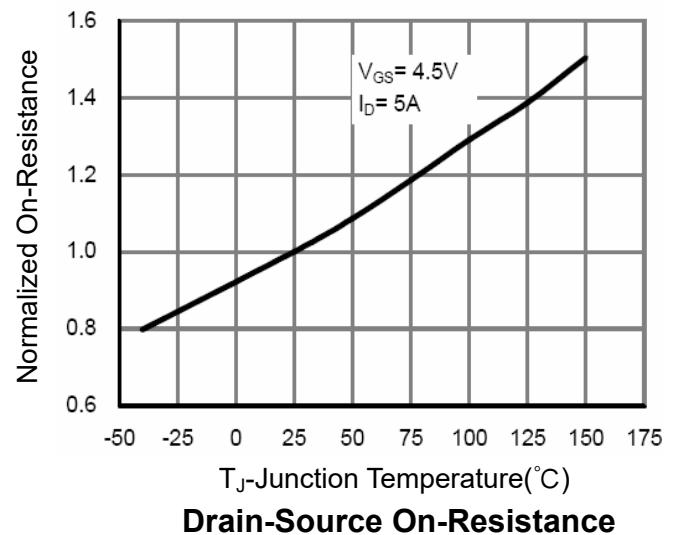
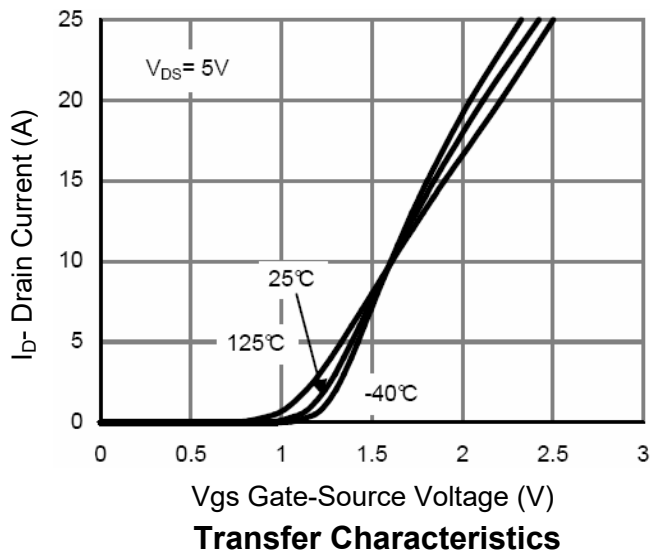
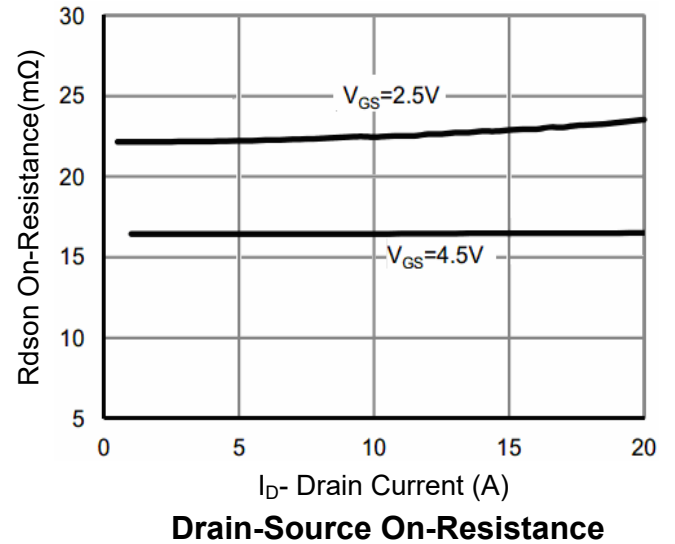
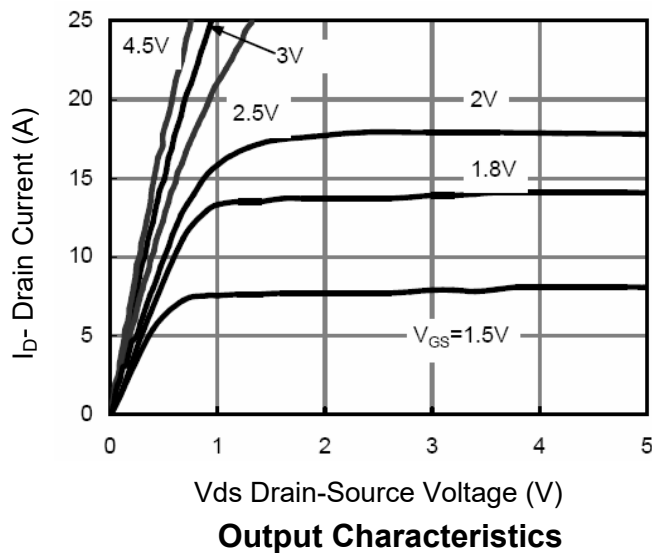
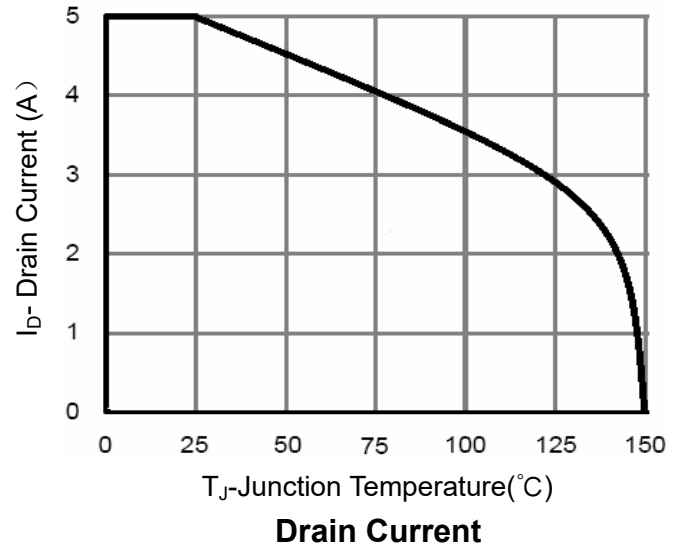
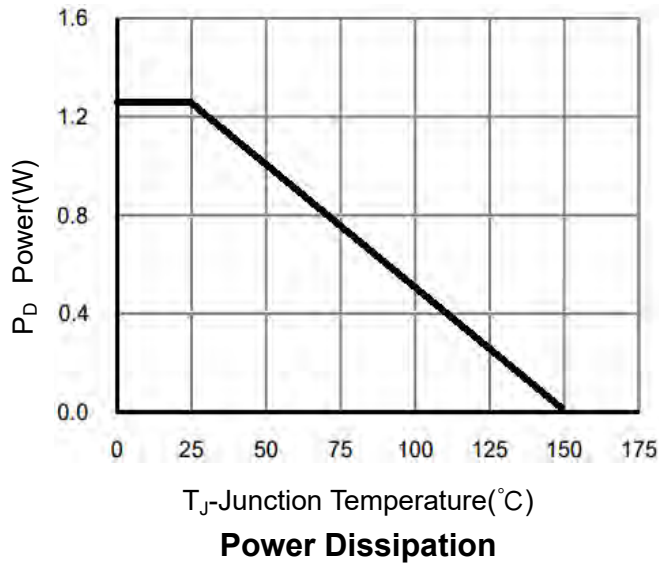
Notes: 1. Repetitive rating: pulsed width limited by maximum junction temperature.

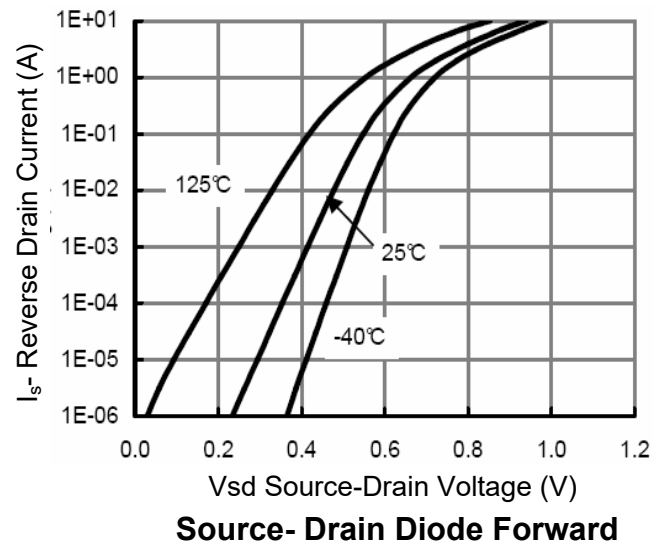
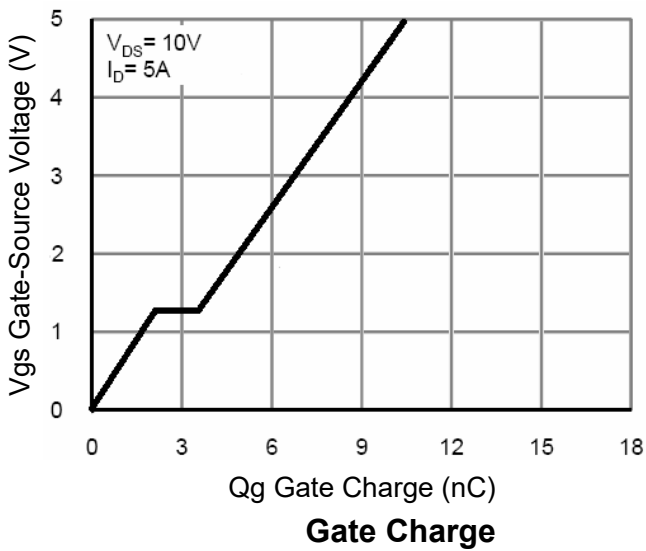
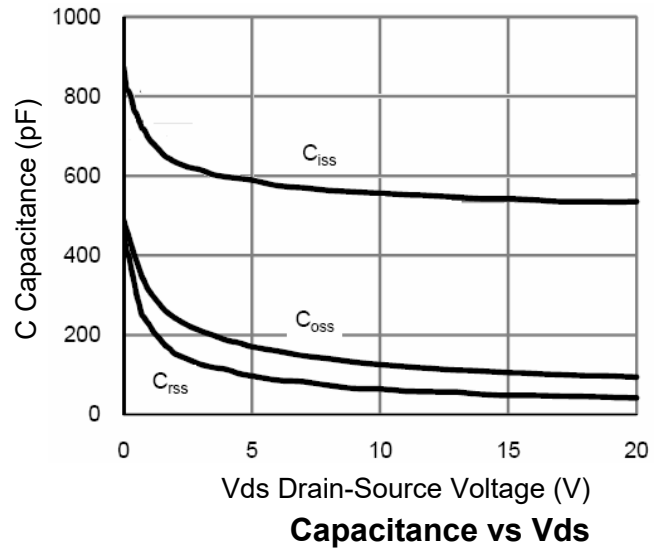
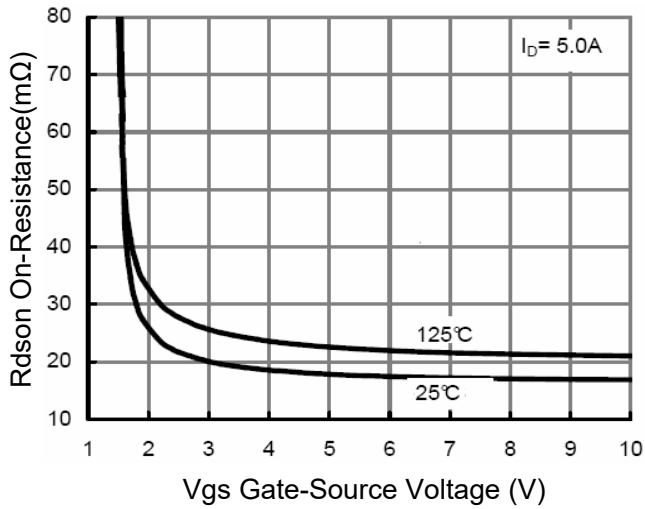
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

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



Electrical Characteristics Curves



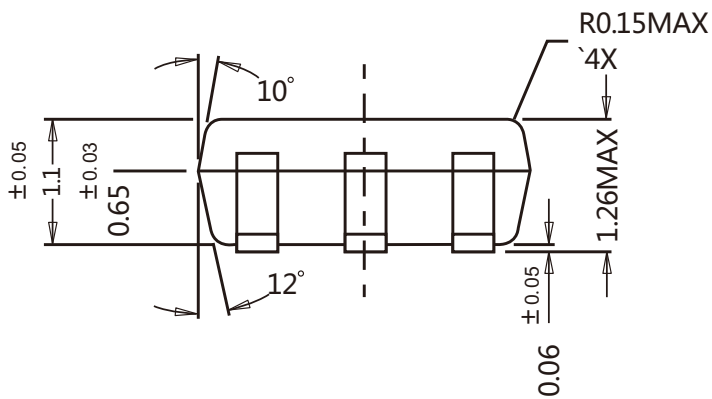
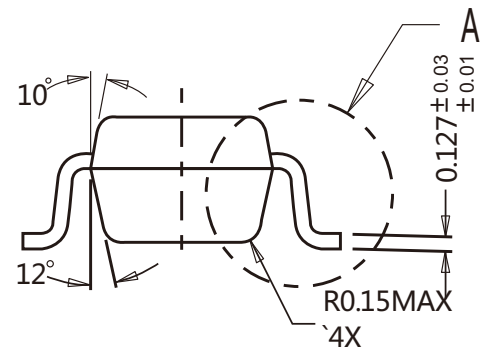
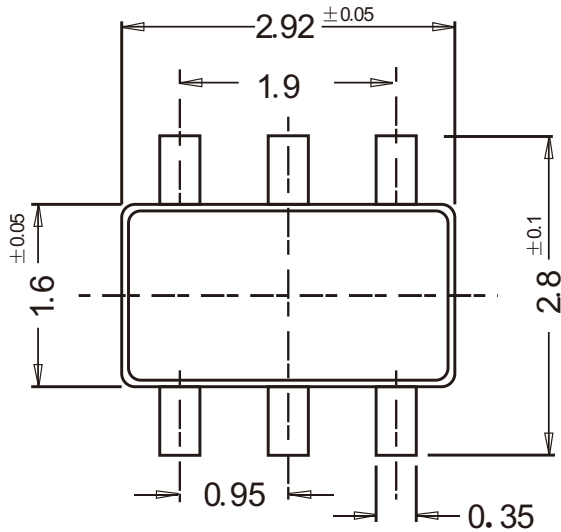




Package Outline

SOT-23-6

Dimensions in mm



Ordering Information

Device	Package	Shipping
PJ8205	SOT-23-6	3000/Reel&Tape(7inch)

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