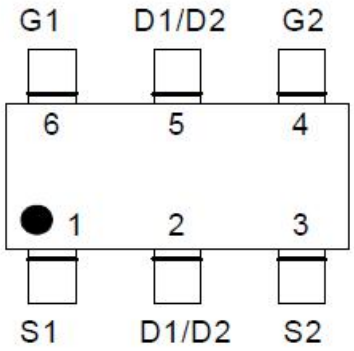
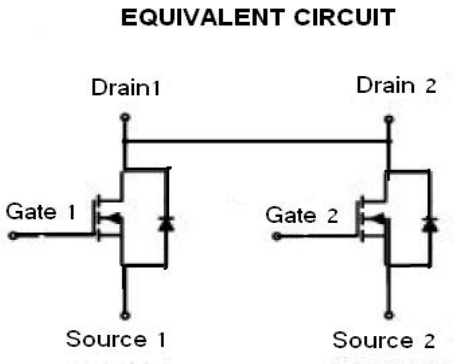
GENERAL DESCRIPTION

The RZC8205S is a dual N-channel MOS Field Effect Transistor which uses advanced trench technology to provide excellent RDS(on) , low gate charge and operation with low gate voltages. This device is suitable for use as a load switch.

PIN CONFIGURATION





FEATURES

- $V_{DS(max)}$ = 20V;
- $I_{D(max)}$= 6.0A;
- Low on-state resistance
  $R_{DS\ (on)}$ =23mΩ TYP. (V_{GS} =4.5V)
  $R_{DS\ (on)}$ =24mΩ TYP.(V_{GS} = 3.8V)
  $R_{DS\ (on)}$ =27mΩ TYP.(V_{GS} = 2.5V)
- Lead free product is acquired;
- Surface Mount Package;

APPLICTIONS

- Battery protection.
- Battery Powered Systems.
- Power Management in Notebook Computer
- Portable Equipment

ORDERING INFORMATION

Part Number	Package	Top Marking	Packing
RZC8205S	SOT-23-6	8205S	3000PCS/Real

MAXIMUM RATINGS (Ta = 25℃)

Parameter	Symbol		Value	Units
Drain to Source Voltage	VDSS		20	V
Gate to Source Voltage	VGSS		±10	V
Continuous Drain Current	25℃	ID	6.0	A
	85℃		4.8	A
Pulsed Drain Current	ID(pulse)		24	A
Maximum Power Dissipation	25℃	PD	1.05	W
Operating Junction Temperature	TJ		+150	℃
Storage Temperature	TSTG		-55--+150	℃
Lead Temperature for Soldering Purposes (1/8″ from case for 10 s)	TL		260	°C

ELECTRICAL CHARACTERISTICS (TA = 25℃)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Units
Drain-Source Breakdown Voltage	BVDSS	V_{GS}=0V, I_{DS}=250uA	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 20V,V_{GS}=0V			1.0	uA
Gate Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V			±100	nA
Gate threshold voltage	$V_{GS(TH)}$	V_{DS}=V_{GS},I_D= 250μA	0.5	0.7	1.0	V
Drain to Source On-state Resistance	$R_{DS(ON)}$	V_{GS}= 4.5V,I_D=3.0A		23	25	mΩ
		V_{GS}= 2.5V,I_D=2.0A		27	35	mΩ
Input Capacitance	Ciss	V_{GS} =0V,V_{DS} =15V, f=1.0MHZ		550		pF
Output Capacitance	Coss			120		pF
Reverse Transfer Capacitance	Crss			80		pF
Turn-on Delay Time	$t_{d(on)}$	V_{DD} =10V, I_{DS} =1.0A, V_{GS} =4.5V, R_G =0.2Ω		8.0	14	nS
Rise Time	t_r			6.0	12	nS
Turn-off Delay Time	$t_{d(off)}$			19	45	nS
Fall Time	t_f			7.0	23	nS
Total Gate Charge	Q_G	V_{DD} =10V, I_D =1.0A, V_{GS}=4.5V,		10	12	nC
Gate to Source Charge	Q_{GS}			3.6		nC
Gate to Drain Charge	Q_{GD}			2.0		nC
Drain-Source Diode Forward Voltage	V_{SD}	Is=2.8A,V_{GS}=0V			1.2	V

TYPICAL CHARACTERISTICS (25℃ unless noted)

Figure 1 Output Characteristics

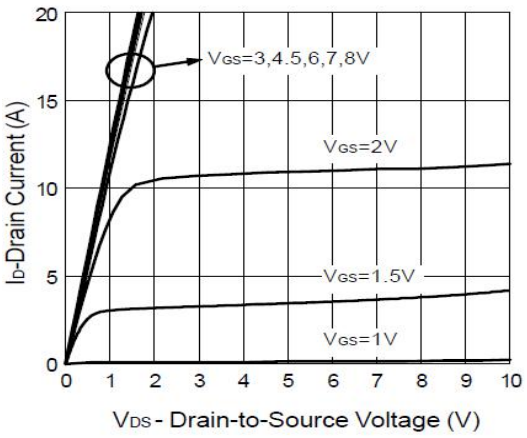


Figure 2 Transfer Characteristics

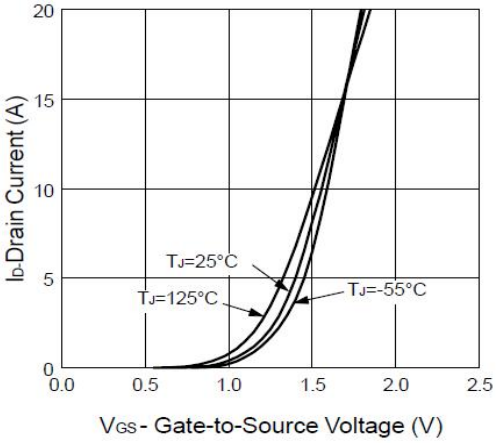


Figure3 Threshold Voltage VS. Junction Temperature

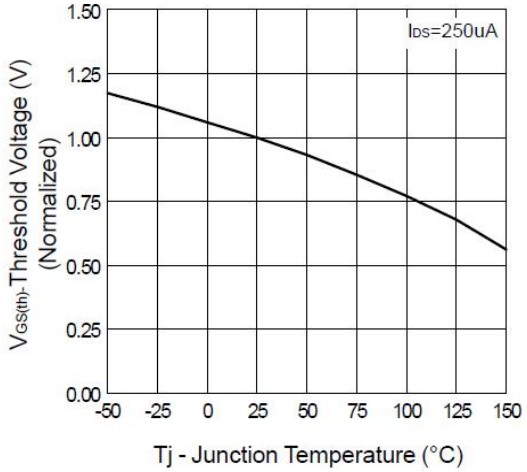


Figure4 On-Resistance vs. Drain Current

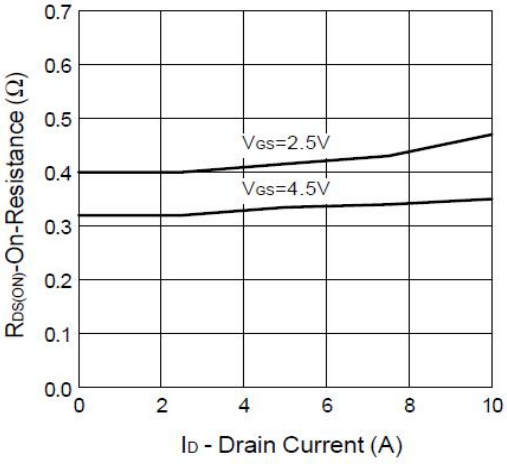


Figure 5 On-Resistance vs. Gate-to-Source Voltage

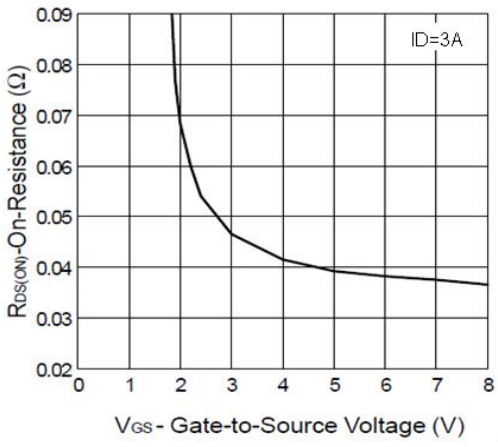


Figure 6 On-Resistance vs. Junction Temperature

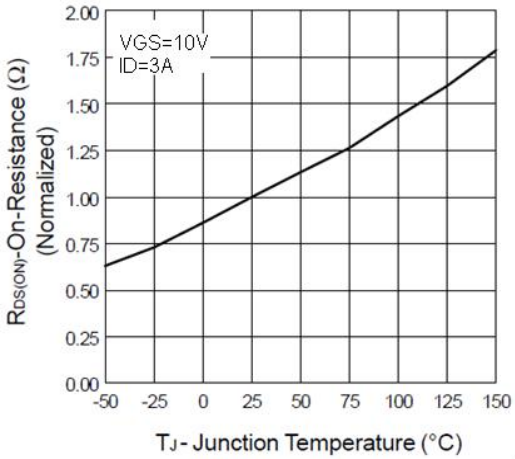


Figure 7 Gate Charge

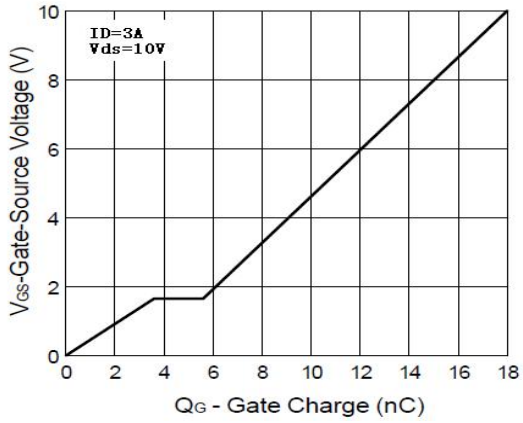


Figure 8 Capacitance

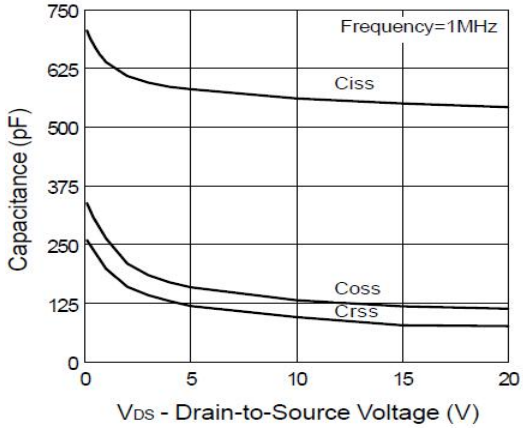


Figure 9 Source-Drain Diode Forward Voltage

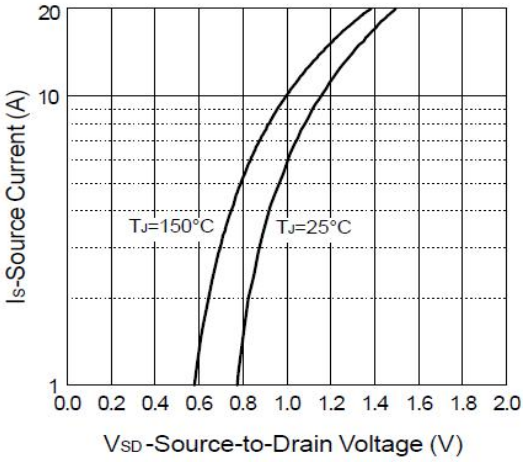


Figure 10 Single Pulse Power

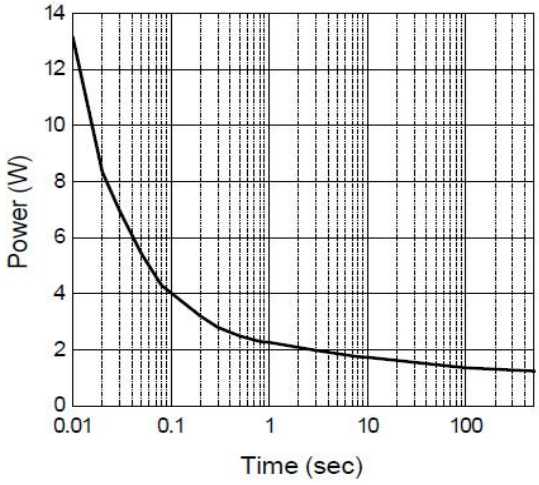
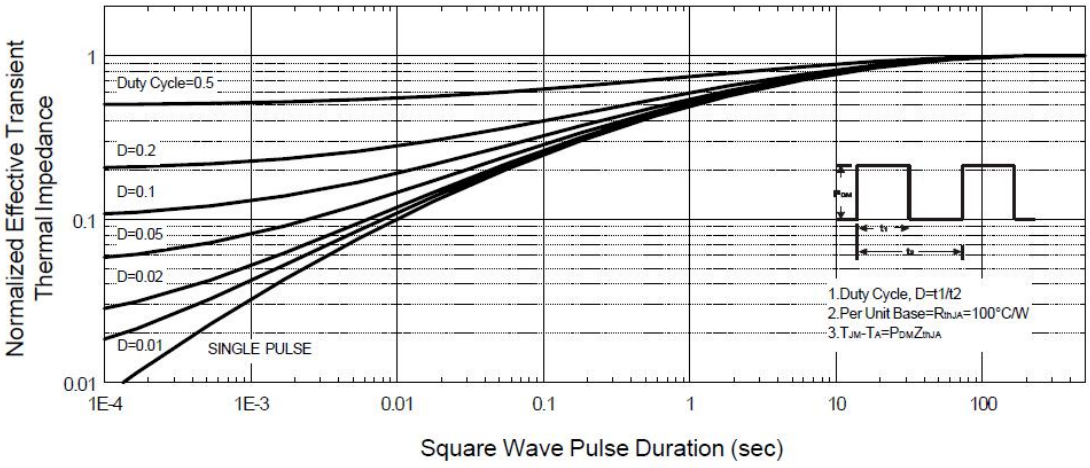
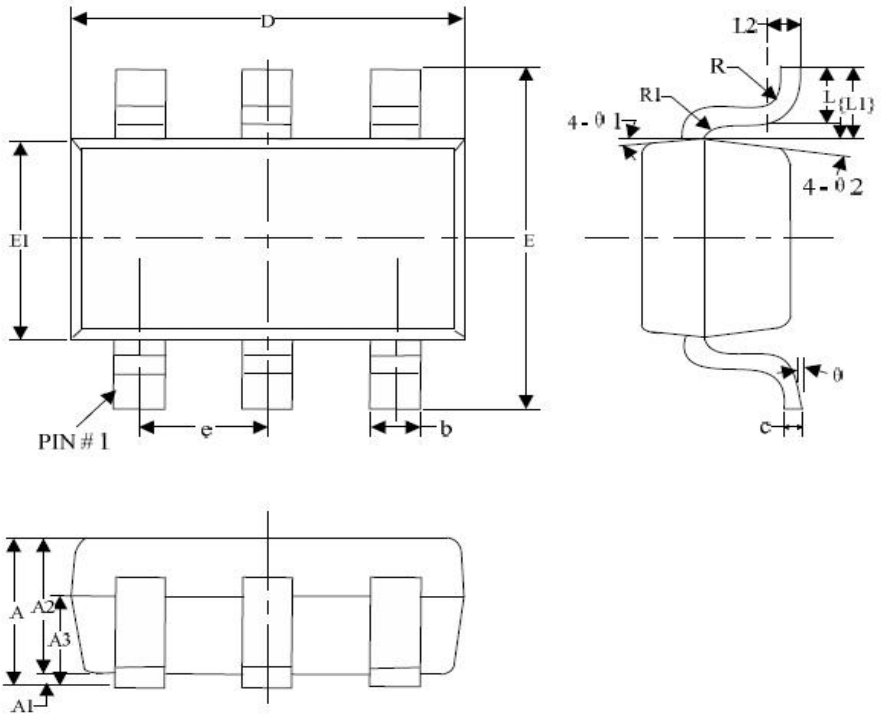


Figure 11 Normalized Thermal Transient Impedence, Junction to Ambient



PACKAGE DIMENSIONS

SOT23-6



Dimensions（unit：mm）

SYMBOL	MIN	NOM	MAX		SYMBOL	MIN	NOM	MAX
A	-	-	1.30		e	0.85	0.95	1.05
A1	0	-	0.15		L	0.35	0.45	0.60
A2	0.90	1.10	1.30		L1		0.59REF	
A3	0.60	0.65	0.70		L2		0.25BSC	
b	0.39	-	0.49		R	0.05	-	-
c	0.12	-	0.19		R1	0.05	-	0.02
D	2.85	2.95	3.15		θ	0°	-	8°
E	2.60	2.80	3.00		θ1	3°	5°	7°
E1	1.55	1.65	1.75		θ2	6°	8°	10°