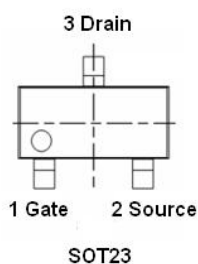




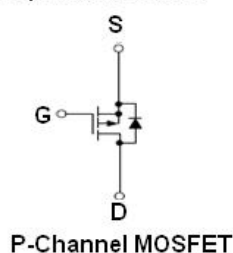
GENERAL DESCRIPTION

The RZC2301P uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for used as a load switch or in Pulse width modulation applications.

PIN CONFIGURATION



Equivalent Circuit



FEATURES

- $V_{DS(max)} = -20V$;
- $I_{D(max)} = -2.8A$
- Low on-state resistance
 $R_{DS(ON)} = 50m\Omega$ TYP. ($V_{GS} = -4.5V$)
 $R_{DS(ON)} = 85m\Omega$ TYP. ($V_{GS} = -2.5V$)

APPLICATIONS

- High Side Load Switch
- Optimized for Power Management Applications for Portable Products, such as Cell Phones, PMP, DSC, GPS, and others.

ORDERING INFORMATION

Part Number	Package	Top Marking	Packing
RZC2301P	SOT-23	2301P	3000PCS/Real

**MAXIMUM RATINGS** (Ta = 25°C)

Parameter	Symbol	Value	Units	
Drain to Source Voltage	V _{DSS}	-20	V	
Gate to Source Voltage	V _{GSS}	±10	V	
Continuous Drain Current	25°C	I _D	-2.8	A
	85°C		-2.0	A
Pulsed Drain Current	I _{D(pulse)}	-8.0	A	
Maximum Power Dissipation	25°C	P _D	1.3	W
Operating Junction Temperature	T _J	+150	°C	
Storage Temperature	T _{STG}	-55-+150	°C	
Lead Temperature for Soldering Purposes (1/8" from case for 10 s)	T _L	260	°C	

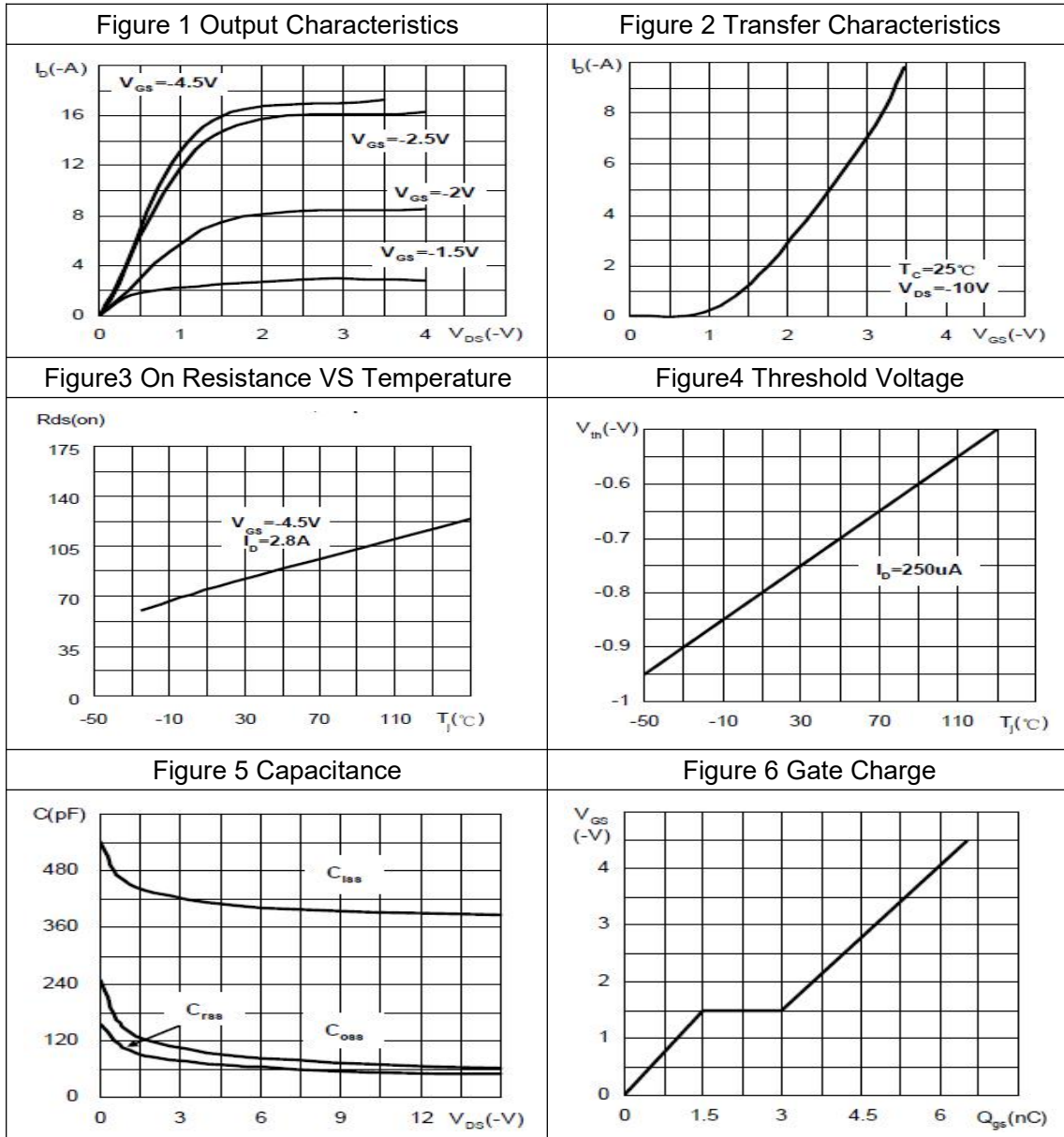


ELECTRICAL CHARACTERISTICS (TA = 25°C)

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	uA
Gate Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V			±100	nA
Gate threshold voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-0.45		-0.95	V
Forward Transconductance	G _{FS}	V _{DS} = -5V, I _D =-2.8A		6.5		S
Drain to Source On-state Resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2.0A		50	75	mΩ
		V _{GS} = -2.5V, I _D = -2.0A		85	100	mΩ
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1.0MHZ		386		pF
Output Capacitance	C _{oss}			63		pF
Reverse Transfer Capacitance	C _{rss}			50		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, I _D =1.4A, V _{GS} =-4.5V, R _G =4.7Ω		21		nS
Rise Time	t _r			5.6		nS
Turn-off Delay Time	t _{d(off)}			40		nS
Fall Time	t _f			7.5		nS
Total Gate Charge	Q _G	V _{DD} =-10V, I _D =1.4A, V _{GS} =-4.5V, R _G =10Ω		6.5		nC
Gate to Source Charge	Q _{GS}			1.5		nC
Gate to Drain Charge	Q _{GD}			1.5		nC
Drain-Source Diode Forward Voltage	V _{SD}	I _S =2.8A, V _{GS} =0V			-1.2	V



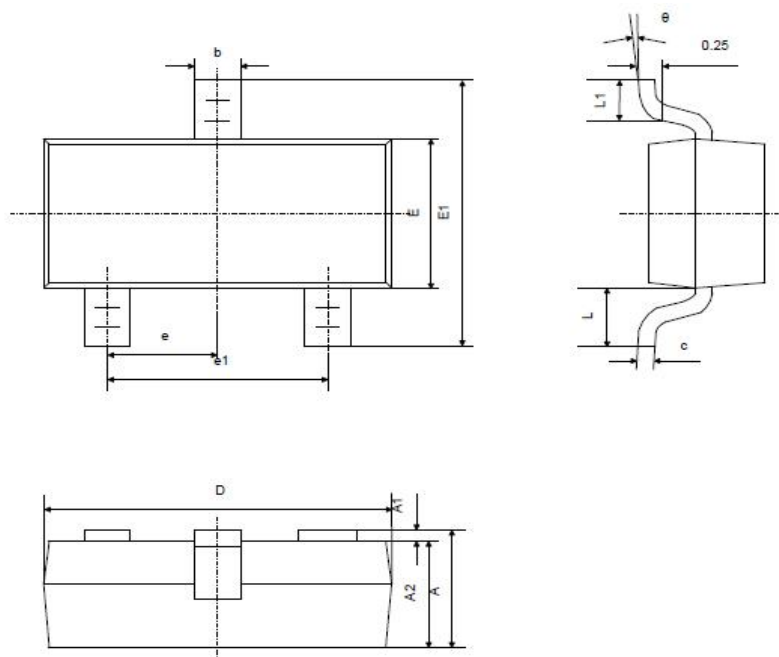
TYPICAL CHARACTERISTICS





PACKAGE DIMENSIONS

SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.889	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

Note:

1. Dimension D does not include mold flash, protrusions or gate burrs. mold flash, protrusions or gate burrs shall not exceed 0.10mm per side.
2. Dimension E1 does not include inter-lead flash or protrusion. Inter-lead flash or protrusion shall not exceed 0.1mm per side.