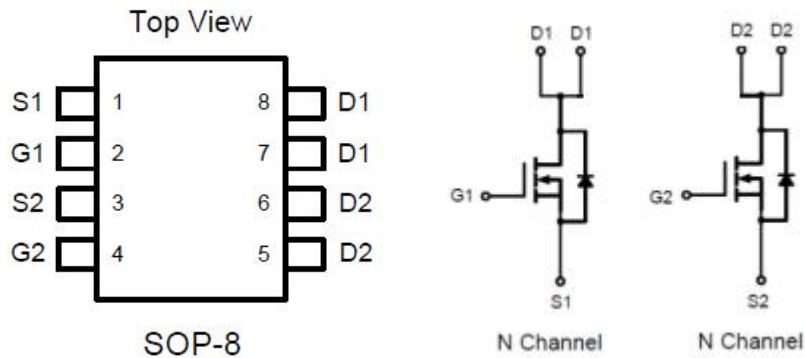




## GENERAL DESCRIPTION

The RZC4822 uses advanced trench technology to provide excellent  $R_{DS(ON)}$  and low gate charge. The complementary MOSFETs may be used to form a level shifted high side switch, and for a host of other applications.

## PIN CONFIGURATION



## FEATURES

- N-Channel  
30V/7A,  
 $R_{DS(ON)}=18m\Omega$  (MAX.) @  $V_{GS}=10V$   
 $R_{DS(ON)}=28m\Omega$  (MAX.) @  $V_{GS}=4.5V$
- Super High Dense Cell Design
- Reliable and Rugged

## APPLICATIONS

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

## ORDERING INFORMATION

Part Number	Package	Top Marking	Packing
RZC4822	SOP-8	S4822	3000PCS/Real

**MAXIMUM RATINGS**( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Units	
Drain to Source Voltage	$V_{DSS}$	30	V	
Gate to Source Voltage	$V_{GSS}$	$\pm 20$	V	
Continuous Drain Current	$I_D$	$25^\circ\text{C}$	7.3	A
		$70^\circ\text{C}$	5.8	A
Pulsed Drain Current	$I_{D(pulse)}$	37	A	
Maximum Power Dissipation	$P_D(25^\circ\text{C})$	1.5	W	
Single Pulse Avalanche Energy	$E_{AS}$	22.1	mJ	
Operating Junction Temperature	$T_J$	+150	$^\circ\text{C}$	
Storage Temperature	$T_{STG}$	-55-+150	$^\circ\text{C}$	
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	$T_L$	260	$^\circ\text{C}$	



**ELECTRICAL CHARACTERISTICS** (TA = 25°C)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX	Units
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>DS</sub> =250uA	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =24V, V <sub>GS</sub> =0V T <sub>J</sub> =25°C			1	uA
		V <sub>DS</sub> =24V, V <sub>GS</sub> =0V T <sub>J</sub> =55°C			5	uA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±100	nA
Gate threshold voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.2		2.5	V
Drain to Source On-state Resistance <sup>(note 2)</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =7A		15	18	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> =4A		25	28	mΩ
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1.2	V
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =0V, f=1MHz		2.5		Ω
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		572		pF
Output Capacitance	C <sub>OSS</sub>			80		
Reverse Transfer Capacitance	C <sub>RSS</sub>			65		
Total Gate Charge (10V)	Q <sub>G</sub>	V <sub>DD</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =7A		6		nC
Gate-Source Charge	Q <sub>GS</sub>			2.5		
Gate-Drain Charge	Q <sub>GD</sub>			2.1		
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>DD</sub> =15V, V <sub>GS</sub> =10V, R <sub>G</sub> =3.3Ω, I <sub>D</sub> =7A		2.4		nS
Rise Time	T <sub>r</sub>			7.8		
Turn-Off Delay Time	T <sub>d(off)</sub>			22		
Fall Time	T <sub>f</sub>			4		

**DIODE CHARACTERISTICS**

Parameter	Symbol	Test Conditions	MIN	TYP	MAX	Units
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1.2	V
Continuous Source Current <sup>1,5</sup>	I <sub>S</sub>	V <sub>G</sub> =V <sub>D</sub> =0V, Force Current			7.3	A



### TYPICAL CHARACTERISTICS

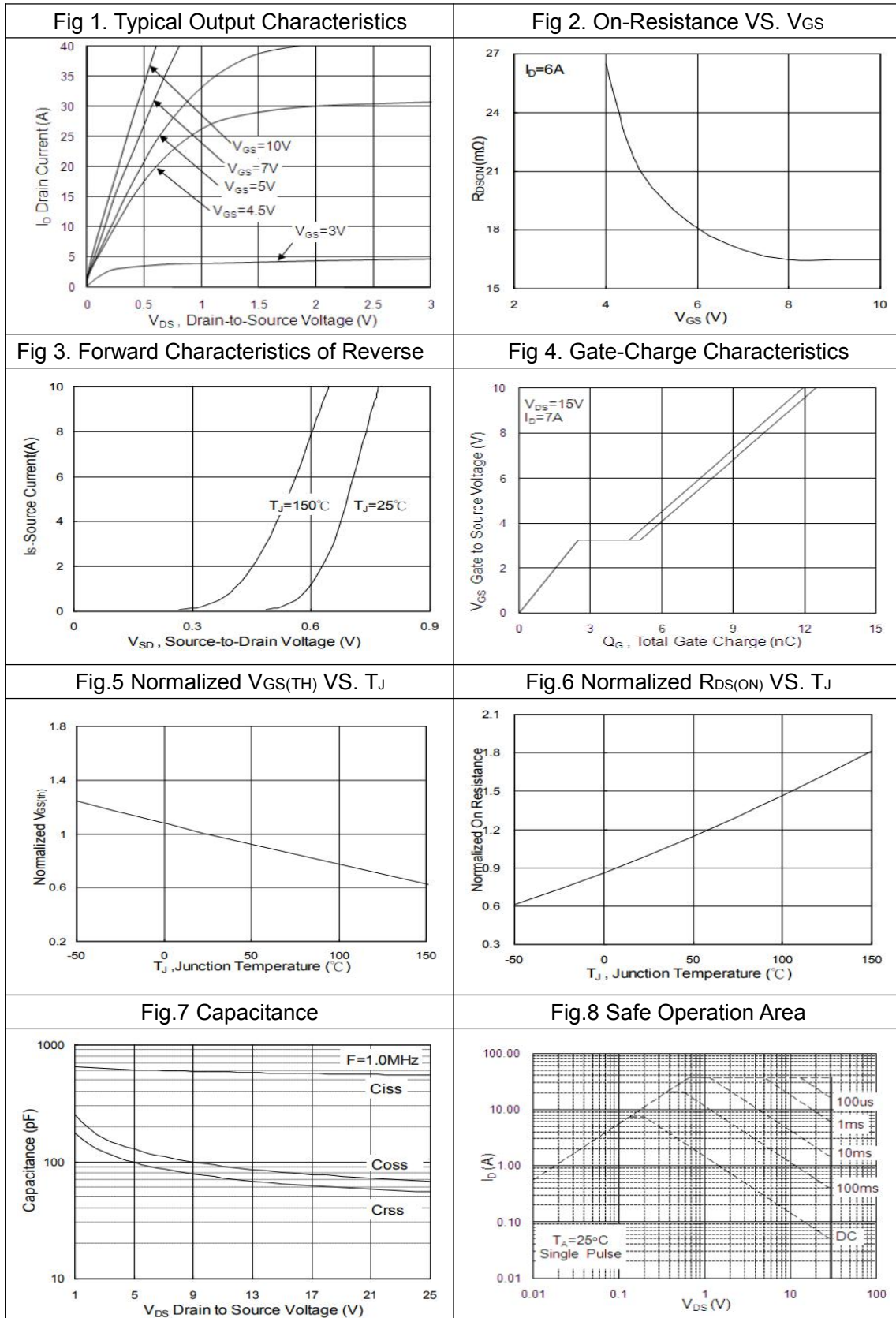
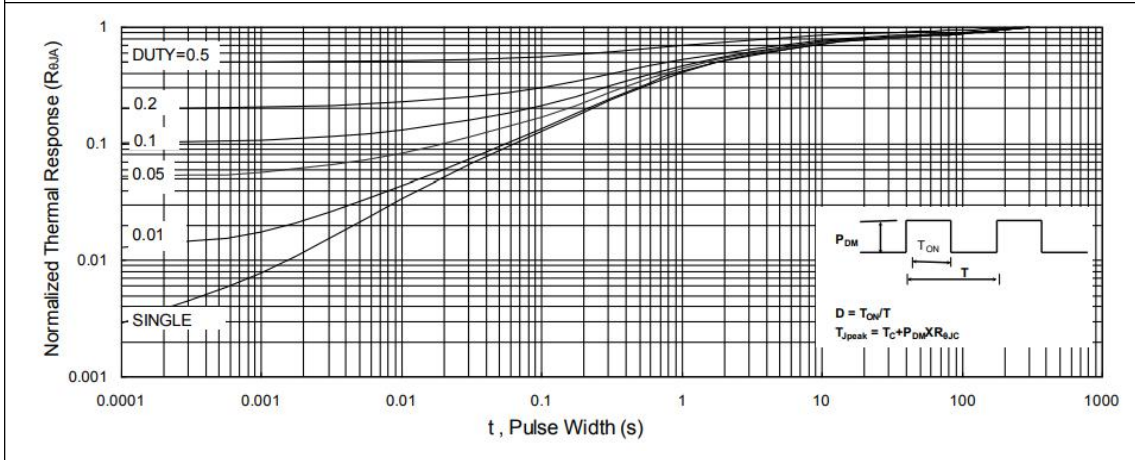
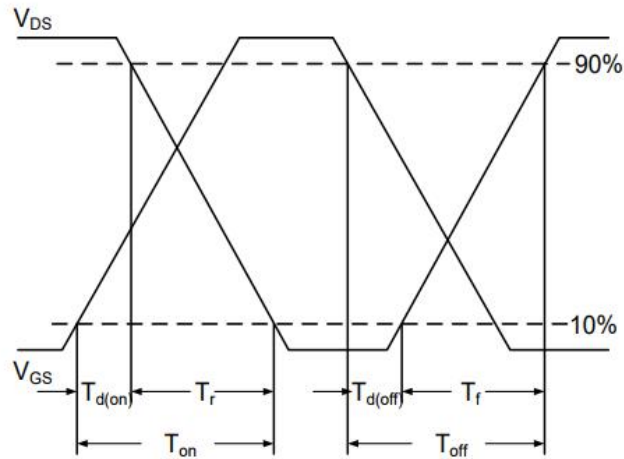




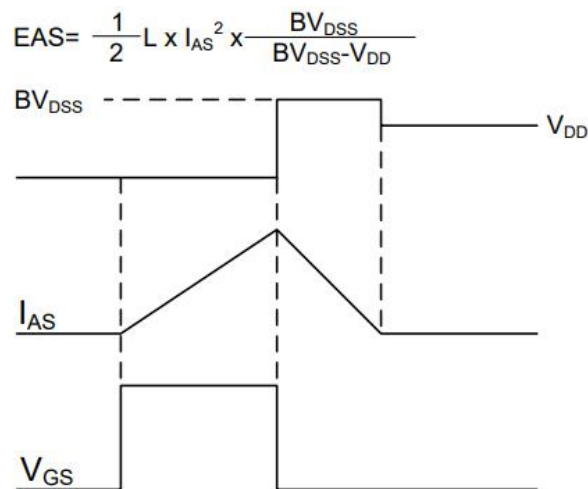
Fig.9 Normalized Maximum Transient Thermal Impedance



Switching Time Waveform



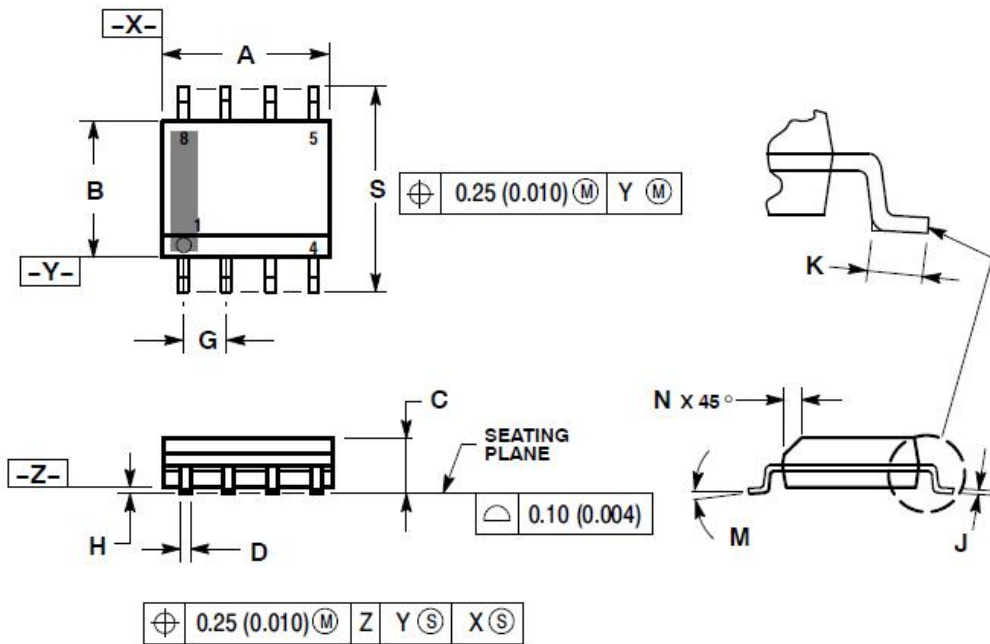
Unclamped Inductive Switching Waveform



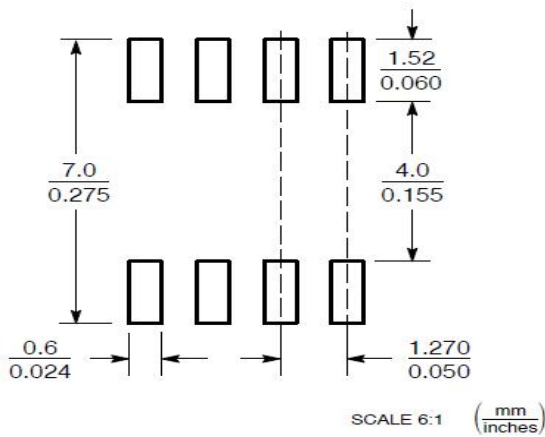


PACKAGE DIMENSIONS

SOP-8



SOLDERING FOOTPRINT\*



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.053	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0°	8°	0°	8°
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244