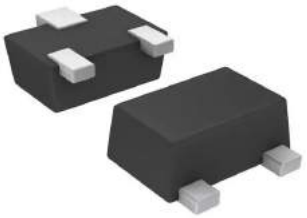
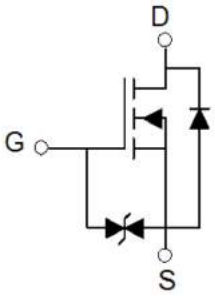
Features

- N-Channel
- ESD protection
- SOT-723 package

V_{DS}	60	V
$R_{DS(on),TYP}$@ V_{GS}=10 V	1.6	Ω
$R_{DS(on),TYP}$@ V_{GS}=4.5 V	1.7	Ω
I_D	0.3	A

SOT-723





Part ID	Package Type	Marking	Packing
ZT7002RK	SOT-723	RK	8000pcs/Reel

Absolute Maximum Ratings T_A =25°C, unless otherwise specified

Symbol	Parameter		Rating	Unit
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{GS}	Gate-Source Voltage		±20	V
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage		60	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_{DM}	Drain Current-Continuous@ Current-Pulsed (Note 1)	T_C =25°C	1.2	A
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	T_C =25°C	0.3	A
		T_C =70°C	0.25	A
P_D	Maximum Power Dissipation		0.15	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		830	°C/W

Electrical Characteristics (T_J=25℃ unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_j=25°C (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	60	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=48V,V_{GS}=0V	--	--	1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V,V_{DS}=0V	--	--	±10	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250μA	1.0	1.6	2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=10V,I_D=0.3A	--	1.6	1.9	Ω
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=4.5V, I_D=0.2A	--	1.7	2.2	Ω
Dynamic Electrical Characteristics @ T_j = 25°C (unless otherwise stated)						
Ciss	Input Capacitance	V_{DS}=30V,V_{GS}=0V, f=1MHz	--	26	--	pF
Coss	OutputCapacitance		--	2.6	--	pF
Crss	ReverseTransferCapacitance		--	1.6	--	pF
Qg	Total Gate Charge	V_{DD}=30V,I_D=1A, V_{GS}=10V	--	1.7	--	nC
Qgs	Gate-SourceCharge		--	0.4	--	nC
Qgd	Gate-DrainCharge		--	0.3	--	nC
Switching Characteristics						
Td(on)	Turn-on Delay Time	V_{DD}=30V, I_D=0.3A, R_G=10Ω, V_{GS}=10V	--	1	--	ns
Tr	Turn-on Rise Time		--	19	--	ns
Td(off)	Turn-Off Delay Time		--	23	--	ns
Tf	Turn-Off Fall Time		--	20	--	ns
Source- Drain Diode Characteristics@ T_j = 25°C (unless otherwise stated)						
I_{SD}	Source-Drain Current (Body Diode)		--	--	0.3	A
V_{SD}	Forward on voltage	I_S=0.15A,V_{GS}=0V	--	--	1.2	V
Trr	Reverse Recovery Time	T_j=25℃,I_F =0.1A, di/dt=100A/μs	--	7.4	--	ns
Qrr	Reverse Recovery Charge		--	2.3	--	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤ 0.5%

Typical performance characteristics (T_A=25°C unless otherwiseSpecified)

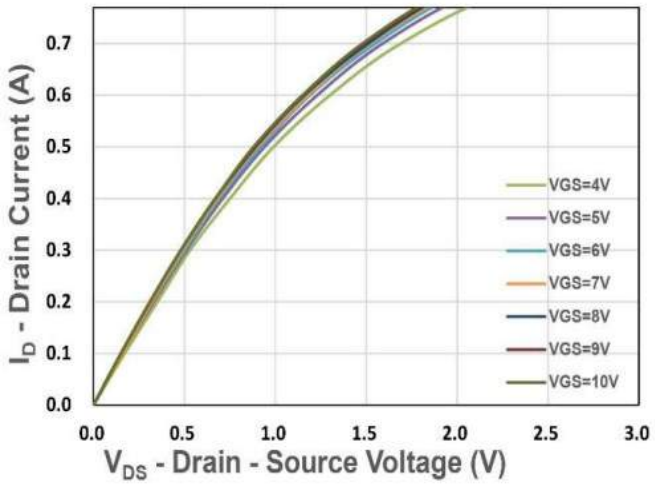


Figure 1. Output Characteristics

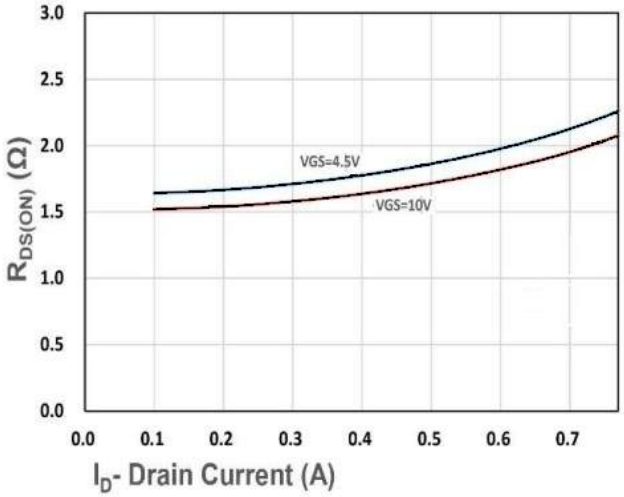


Figure 2. On-Resistance vs. ID

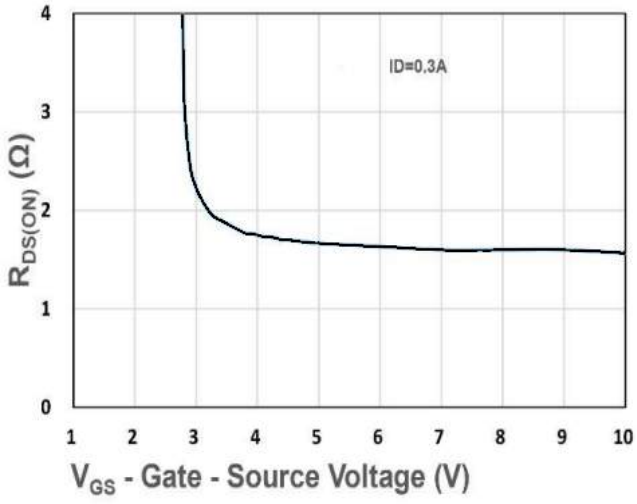


Figure 3. On-Resistance vs. VGS

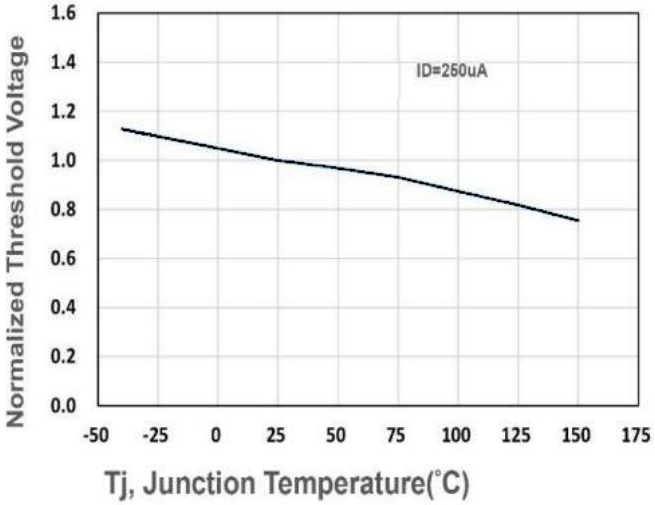


Figure 4. Gate Threshold Voltage

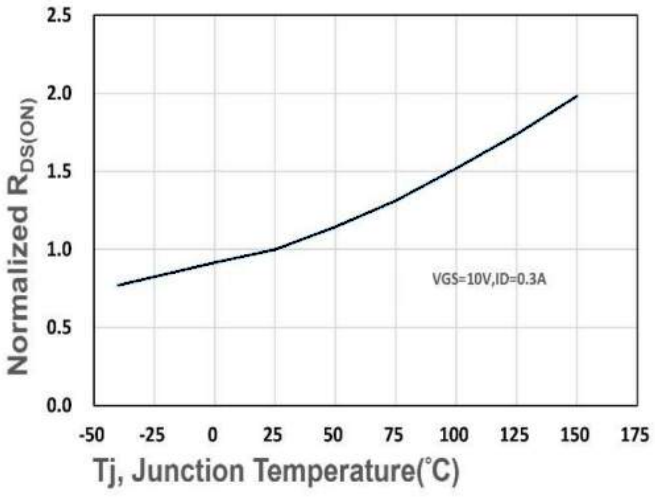


Figure 5. Drain-Source On Resistance

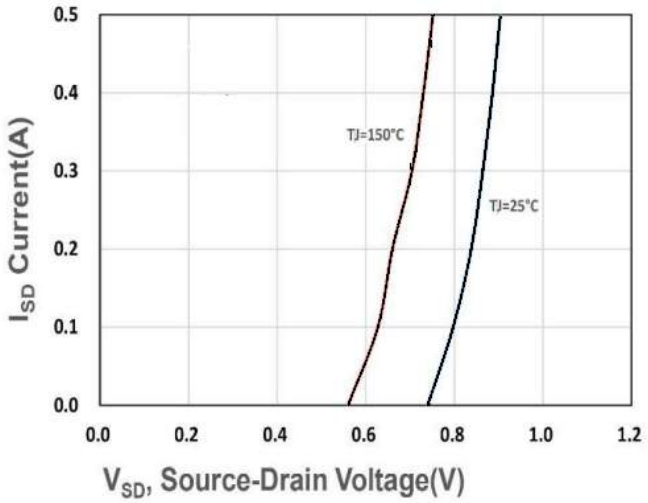


Figure 6. Source-Drain Diode Forward

Typical performance characteristics (T_A=25°C unless otherwiseSpecified)

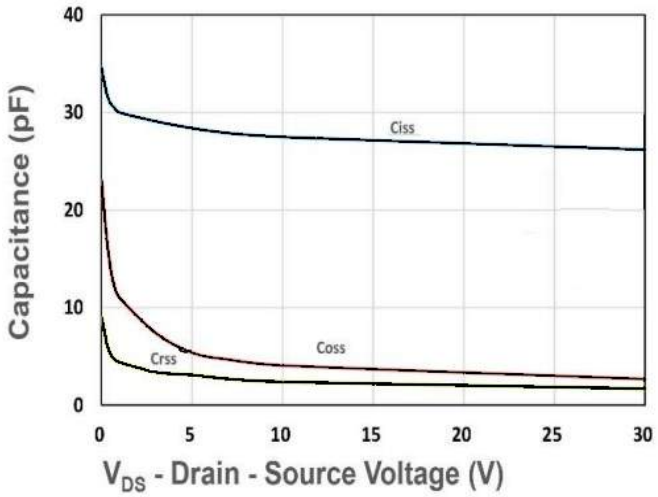


Figure 7. Capacitance

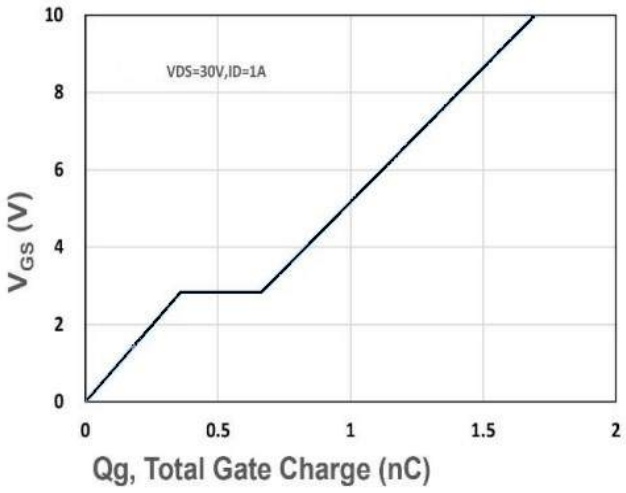


Figure 8. Gate Charge Characteristics

Test Circuit

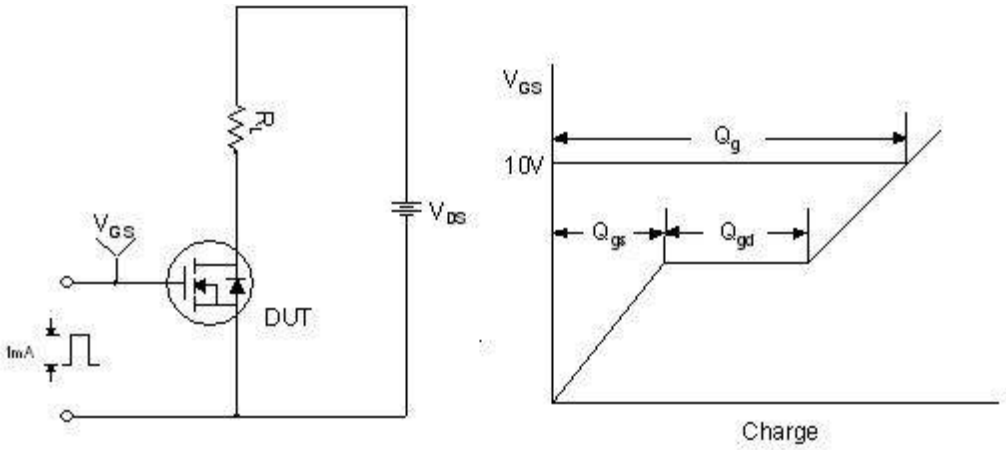


Figure 1. Gate Charge Test Circuit & Waveform

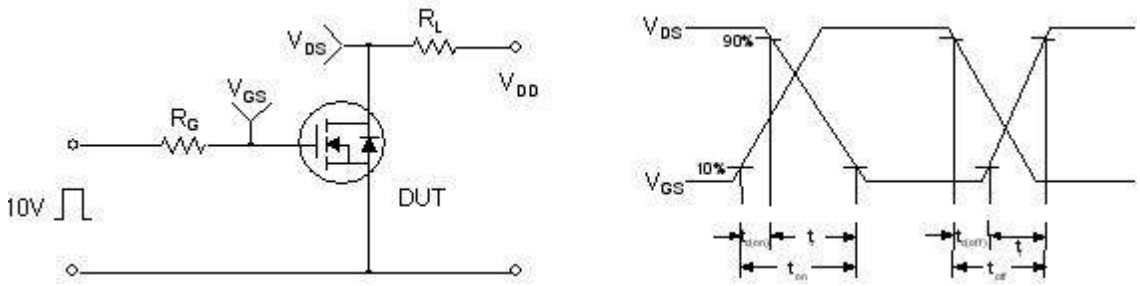


Figure 2. Resistive Switching Test Circuit & Waveforms

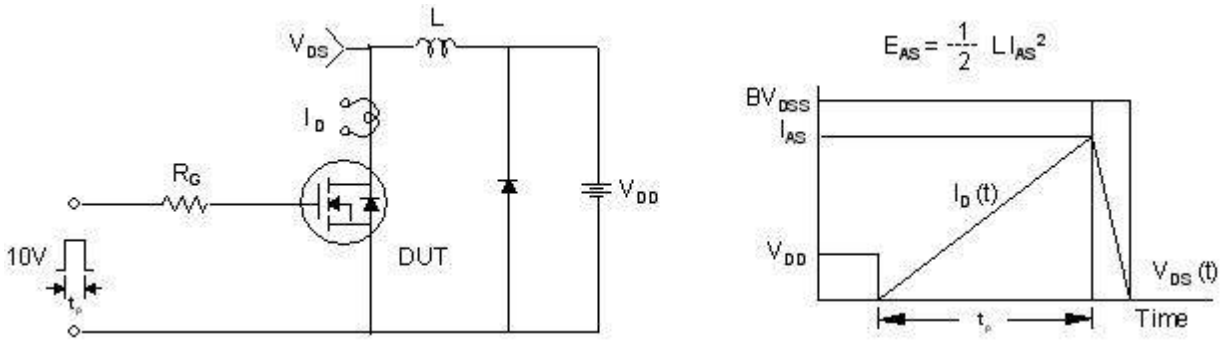
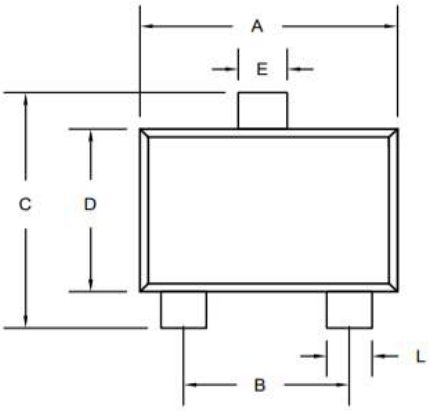
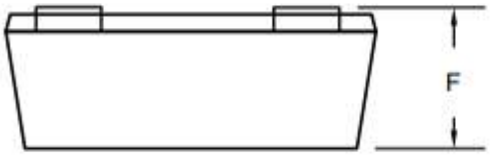


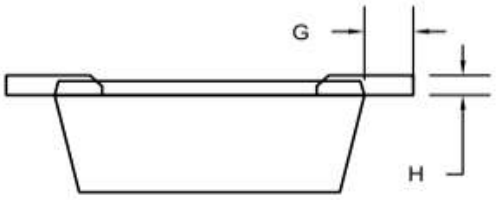
Figure 3. Unclamped Inductive Switching Test Circuit & Waveforms

SOT-723 Package Information

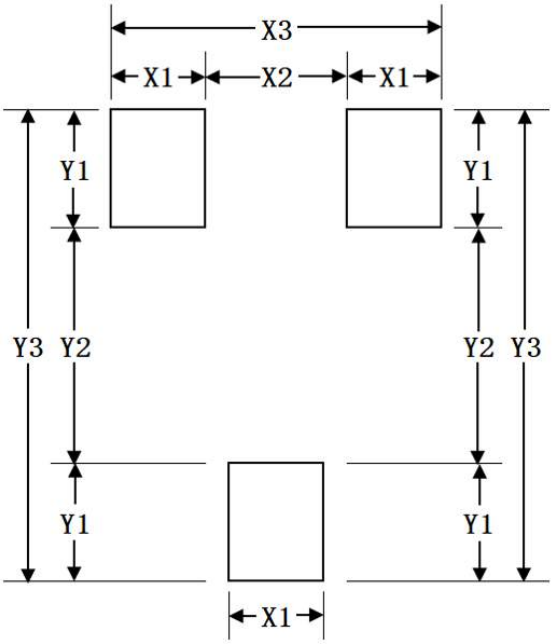


SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	1.10	1.20	1.30	0.0433	0.0472	0.0512
B	0.80 typ			0.0315 typ		
C	1.10	1.20	1.30	0.0433	0.0472	0.0512
D	0.70	0.80	0.90	0.0276	0.0315	0.0354
E	0.20	0.25	0.30	0.0079	0.0098	0.0118
F	0.40	0.45	0.50	0.0157	0.0177	0.0197
G	0.15	0.20	0.25	0.0059	0.0079	0.0098
H	0.06	0.11	0.16	0.0024	0.0043	0.0063
L	0.15	0.20	0.25	0.0059	0.0079	0.0098





Suggested Pad Layout



SYM	DIMENSIONS	
	MILLIMETER	INCHES
X1	0.40	0.016
X2	0.55	0.022
X3	1.10	0.043
Y1	0.50	0.020
Y2	0.60	0.024
Y3	1.60	0.063

Customer Service

Sales and Service:

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