Features

- V_{DS}=60V, I_D=0.2A $R_{DS(ON)}$<2.1Ω @ V_{GS} = 10V
  $R_{DS(ON)}$ <2.7Ω @ V_{GS} = 4.5V
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead free product is acquired
- ESD Protected: 2KV

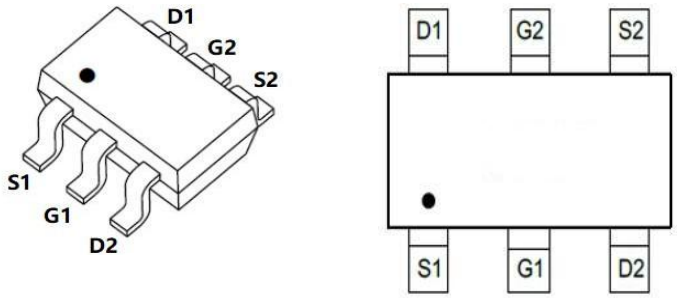
Application

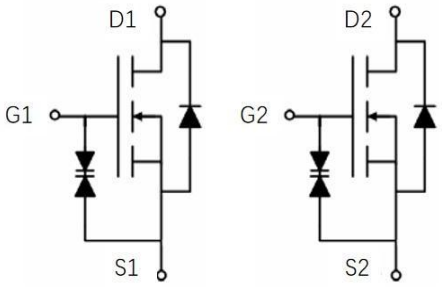
- Battery Operated Systems
- Direct logic-level Interface: TTL/CMOS
- Solid-State Relays

Product Summary

BVDSS	RDSON	ID
60V	1.6Ω	200m A

SOT363-6L Pin Configuration





Package Marking and Ordering Information

Product	Package	Marking	Packing	Min Unit Quantity
ZX 7002KW	SOT363-6L	*	3000PCS/Reel	3000PCS

Absolute Maximum Ratings (T_A=25℃ unless otherwise specified)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_A= 25℃	0.2	A
		T_A= 100℃	0.13	
I_{DM}	Pulsed Drain Current note1		0.8	A
P_D	Power Dissipation	T_A= 25℃	0.38	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		328	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

Electrical Characteristics (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D= 10μA	60	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =60V, V_{GS} = 0V,	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V, V_{GS} = ±20V	-	-	±10	uA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D= 250μA	1	-	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	V_{GS} =10V, I_D =0.3A	-	1.6	2.1	Ω
		V_{GS} =4.5V, I_D =0.2A	-	1.9	2.7	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1.0MHz	-	28	-	pF
C_{oss}	Output Capacitance		-	11	-	pF
C_{rss}	Reverse Transfer Capacitance		-	4	-	pF
Q_g	Total Gate Charge	V_{DS} = 10V, I_D = 0.3A, V_{GS} = 4.5V	-	1.7	-	nC
Q_{gs}	Gate-Source Charge		-	0.3	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	0.6	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD} = 10V, I_D =0.2A, R_{GEN} = 10Ω,V_{GS}=10V,	-	2	-	ns
t_r	Turn-on Rise Time		-	15	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	7	-	ns
t_f	Turn-off Fall Time		-	20	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	0.2	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	0.8	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_S =0.2A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

Figure1: Output Characteristics

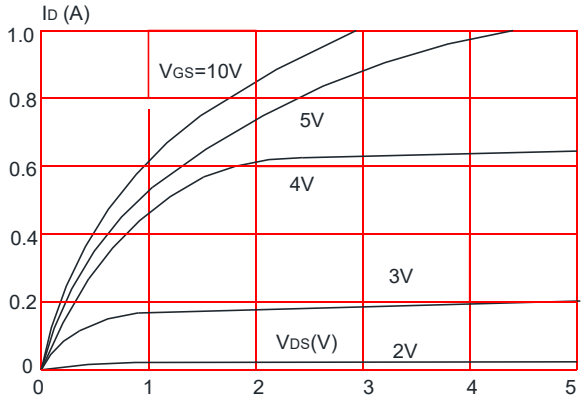


Figure 2: Typical Transfer Characteristics

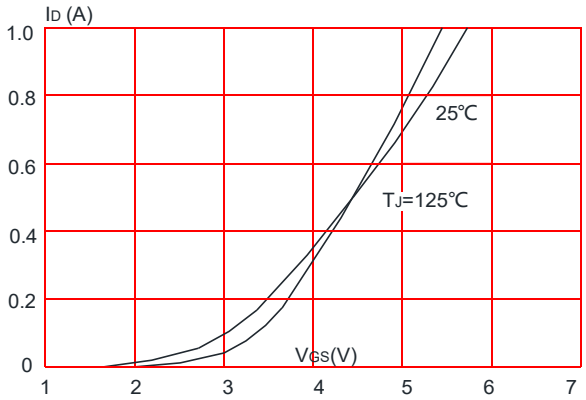


Figure 3: On-resistance vs. Drain Current

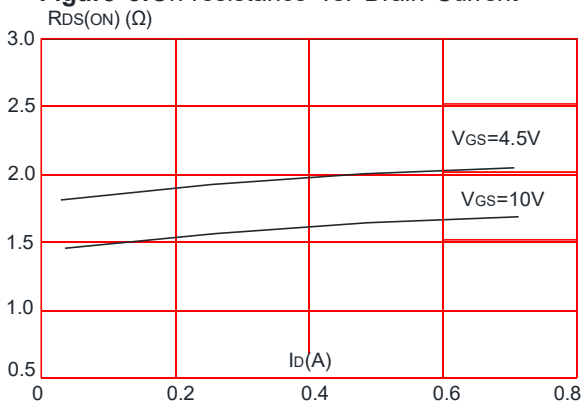


Figure 4: Body Diode Characteristics

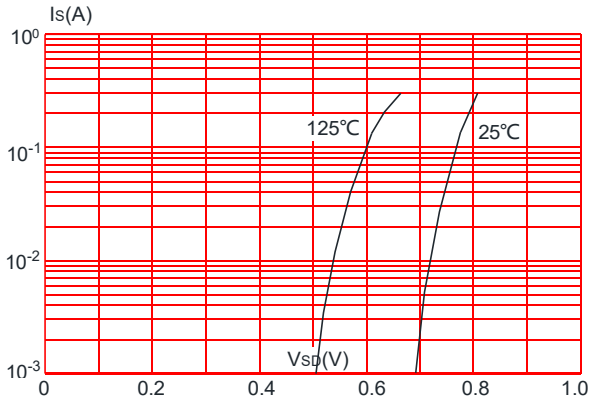


Figure 5: Gate Charge Characteristics

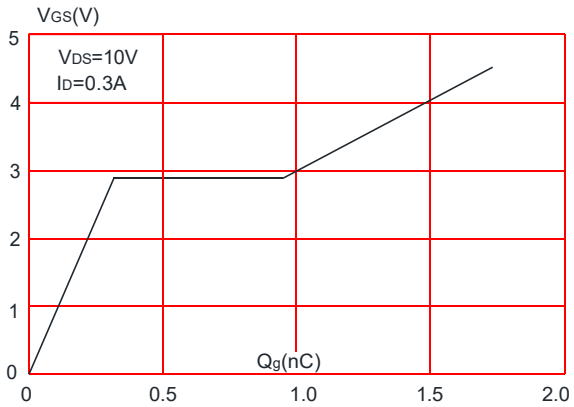


Figure 6: Capacitance Characteristics

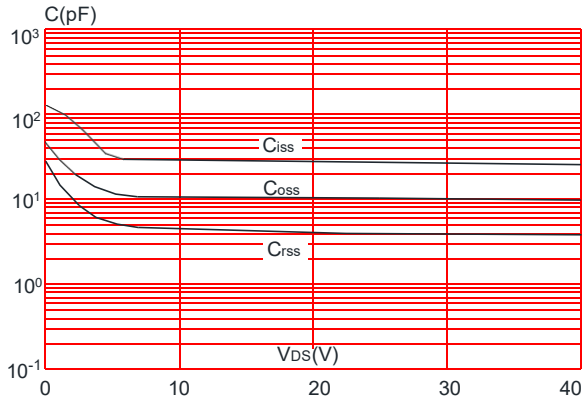


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

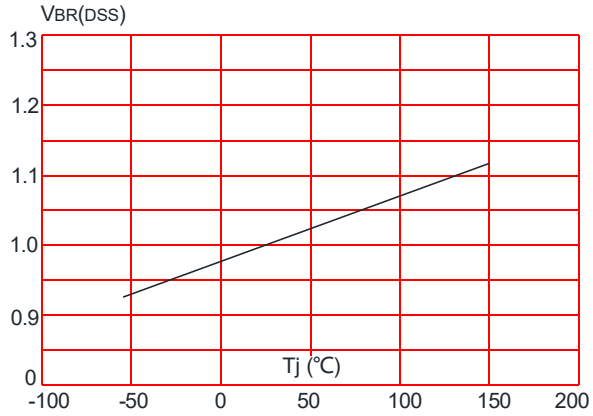


Figure 8: Normalized on Resistance vs. Junction Temperature

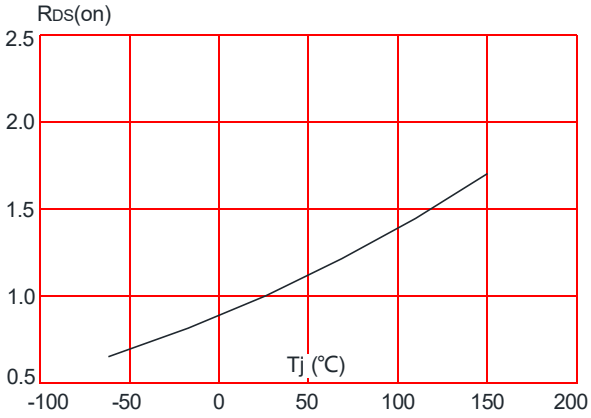


Figure 9: Maximum Safe Operating Area

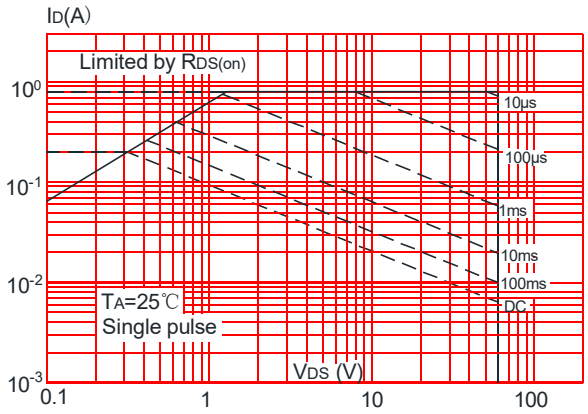


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

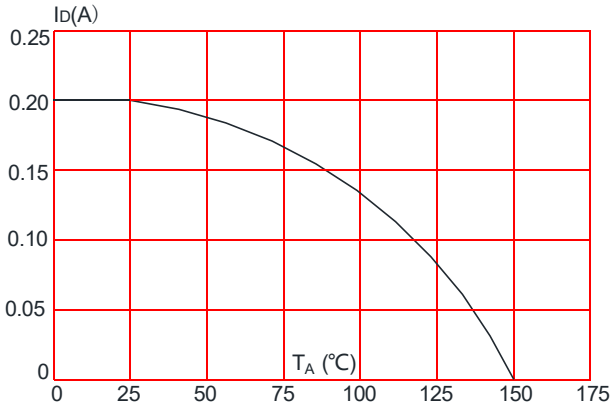
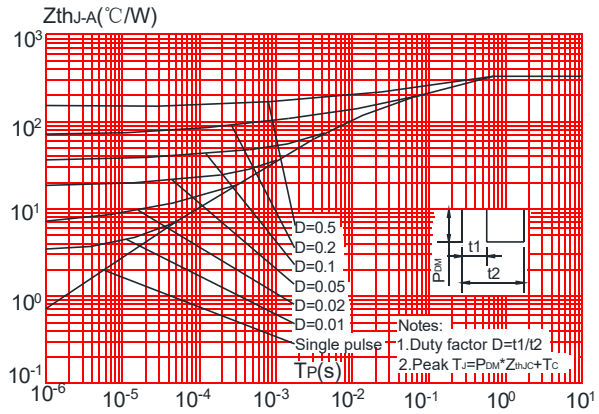


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Test Circuit

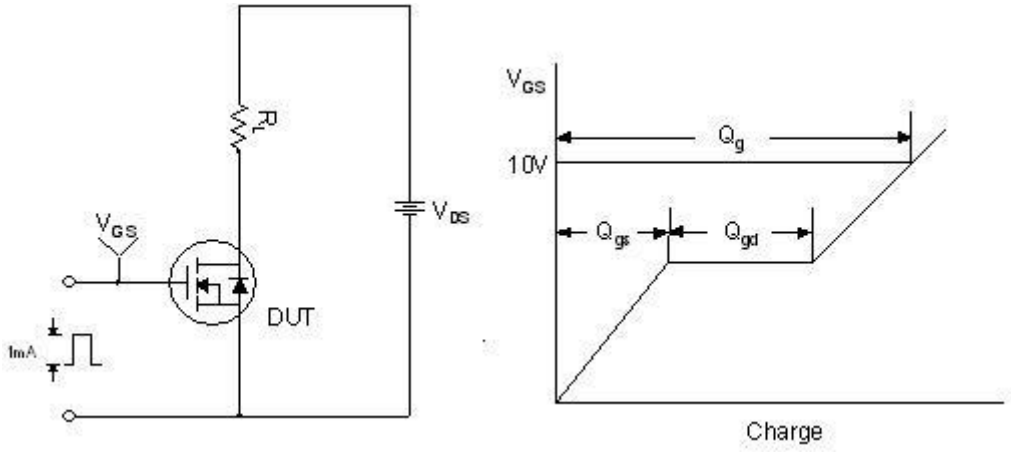


Figure 1. Gate Charge Test Circuit & Waveform

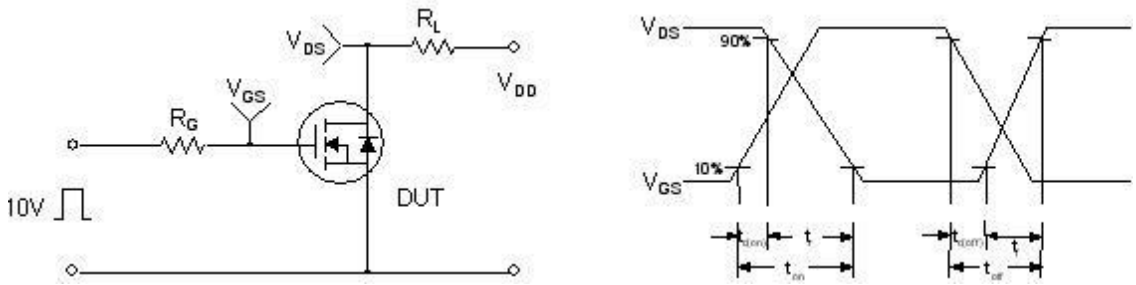


Figure 2. Resistive Switching Test Circuit & Waveforms

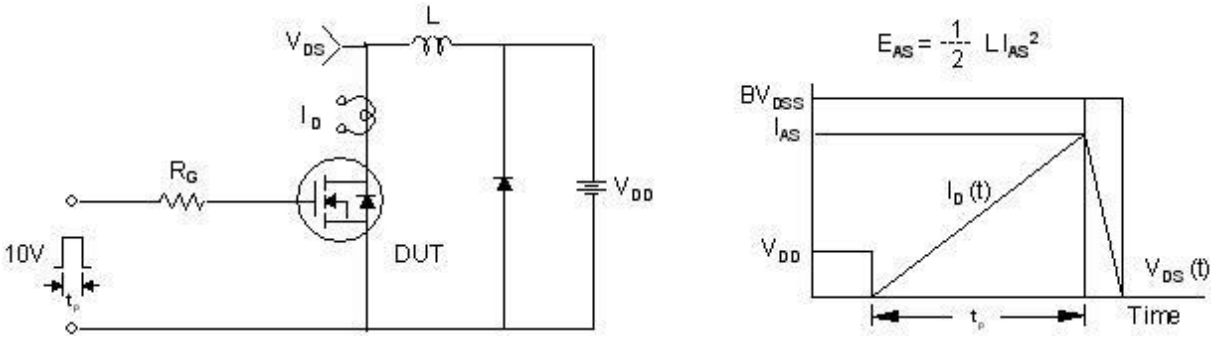
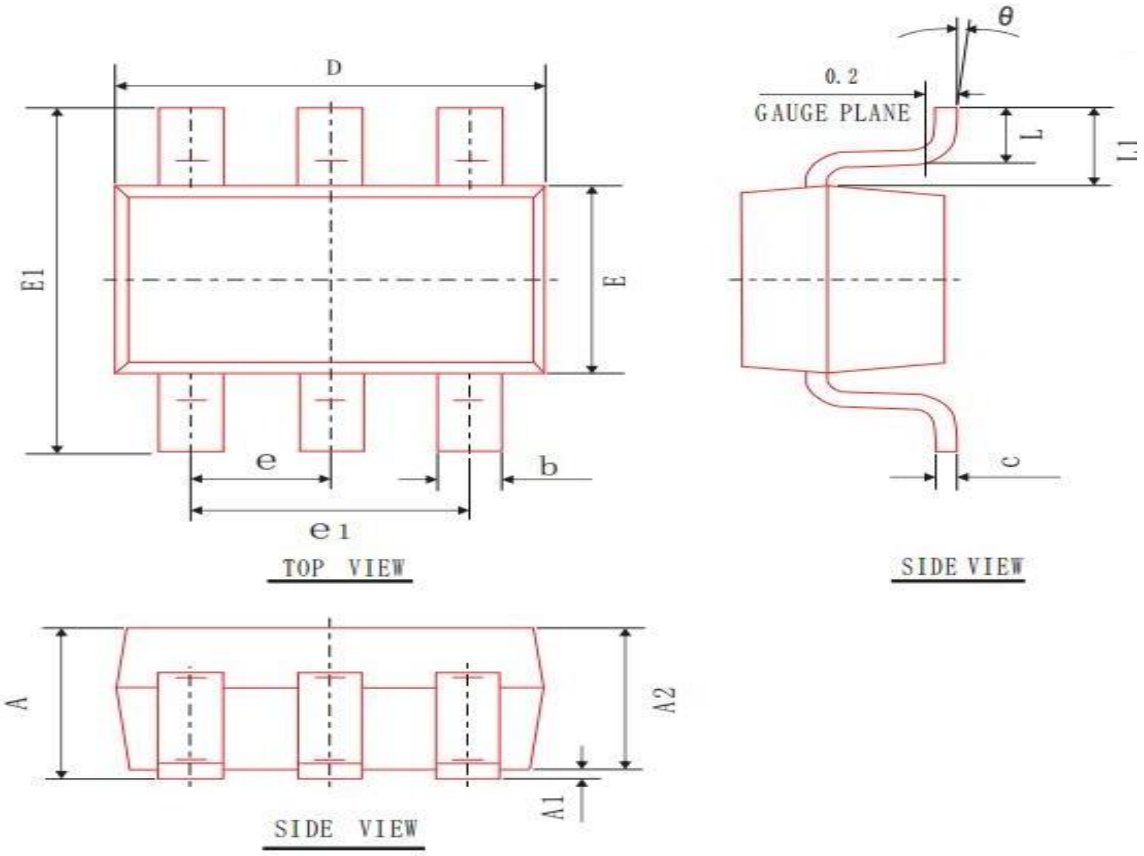


Figure 3. Unclamped Inductive Switching Test Circuit & Waveforms

Package Mechanical Data-SOT-363-6L



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	0.90	1.00	1.10
A1	0.00	0.05	0.10
A2	0.90	0.95	1.00
b	0.20	0.25	0.30
c	0.08	0.10	0.15
e1	1.20	1.30	1.40
D	2.00	2.10	2.20
E	1.15	1.25	1.35
E1	2.15	2.30	2.45
L	0.26	0.36	0.46
θ	0°	4°	8°
L1	0.525 REF		
e	0.65 TYP		