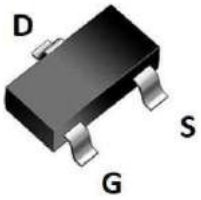
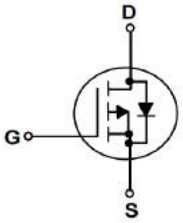
Features

- P-Channel
- Good stability and uniformity
- 100% avalanche tested
- Excellent package for good heat dissipation

V_{DS}	-30	V
$R_{DS(on),TYP}$@ V_{GS}=-10 V	40	mΩ
$R_{DS(on),TYP}$@ V_{GS}=-4.5 V	50	mΩ
I_D	-4.2	A

SOT-23





Part ID	Package Type	Marking	Packing
ZT3407	SOT-23	3407	3000pcs/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		-30	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	-16.8	A
Mounted on Large Heat Sink				
I_D	Drain Current-Continuous	T_C =25°C	-4.2	A
		T_C =100°C	-2.7	A
P_D	Maximum Power Dissipation	T_C =25°C	1.36	W
	- Derate above 25°C	T_C =25°C	0.31	W/°C
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case		83	°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	-30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V,V_{GS}=0V	--	--	-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V,V_{DS}=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250μA	-1.0	-1.5	-2.0	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-10V,I_D=-4A	--	40	55	mΩ
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-4.5V,I_D=-3A	--	50	75	mΩ
Dynamic Electrical Characteristics @ T_j = 25°C (unless otherwise stated) (Note 2,3)						
Ciss	Input Capacitance	V_{DS}=-15V,V_{GS}=0V, f=1MHz	--	560	--	pF
Coss	OutputCapacitance		--	89	--	pF
Crss	ReverseTransferCapacitance		--	70	--	pF
Qg	Total Gate Charge	V_{DD}=-15V,I_D=-4A, V_{GS}=-10V	--	6.5	--	nC
Qgs	Gate-SourceCharge		--	0.9	--	nC
Qgd	Gate-DrainCharge		--	1.3	--	nC
Switching Characteristics (Note 2,3)						
Td(on)	Turn-on Delay Time	V_{DS}=-15V, I_D=-1A, R_G=2.5Ω, V_{GS}=-10V	--	13	--	ns
Tr	Turn-on Rise Time		--	58	--	ns
Td(off)	Turn-Off Delay Time		--	18	--	ns
Tf	Turn-Off Fall Time		--	9	--	ns
Source- Drain Diode Characteristics@ T_j = 25°C (unless otherwise stated)						
I_{SD}	Source-Drain Current (Body Diode)		--	--	-4.2	A
I_{SM}	Maximum Pulsed Drain-Source Diode Forward Current		--	--	-16.8	A
V_{SD}	Forward on voltage	I_S =-4.1A,V_{GS}=0V	--	--	-1.2	V

Notes:
1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. Pulse Test : Pulse width ≤ 300us, Duty cycle ≤ 2%
3. Essentially independent of operating temperature

Typical Characteristics

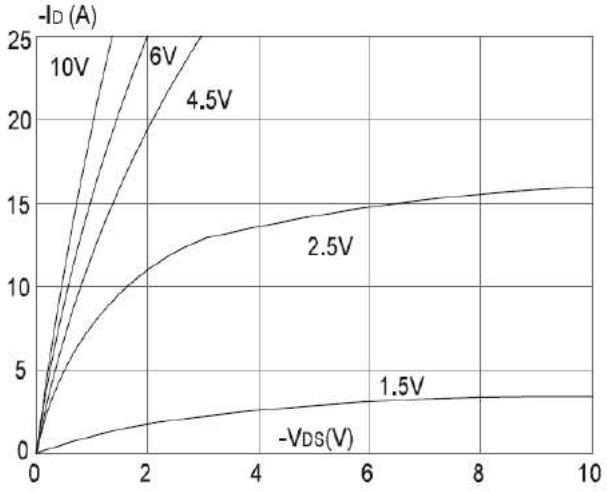


Fig.1 Output Characteristics

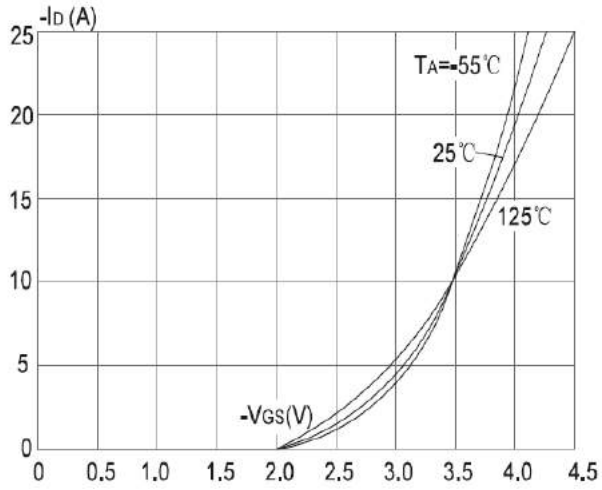


Fig.4 Typical Transfer Characteristics

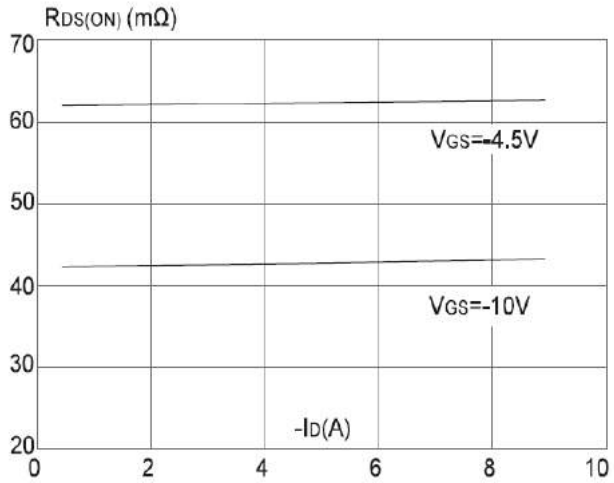


Fig.2 On-resistance vs. Drain Current

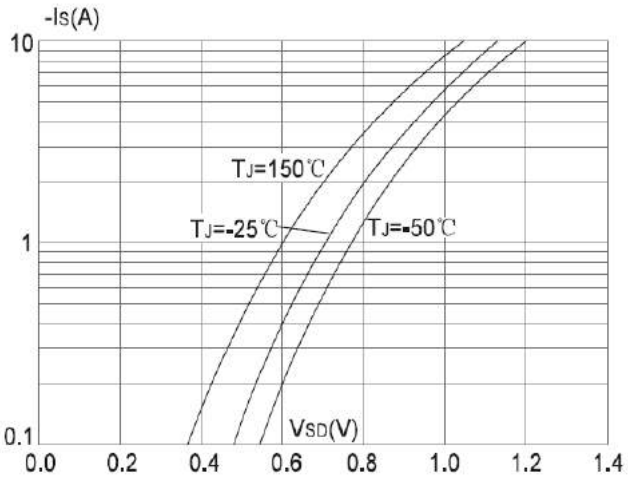


Fig. 5 Body Diode Characteristics

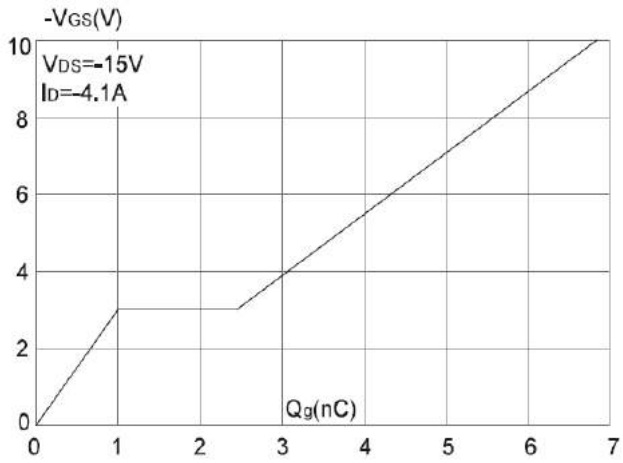


Fig.3 Gate Charge Characteristics

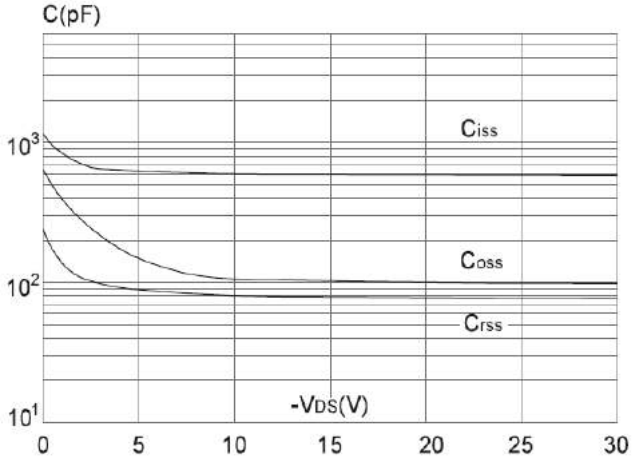


Fig. 6 Capacitance Characteristics

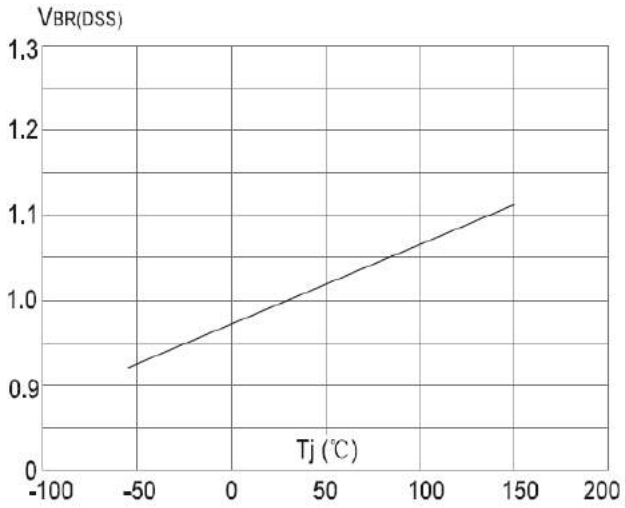


Fig.7 Normalized Breakdown Voltage vs. Junction Temperature

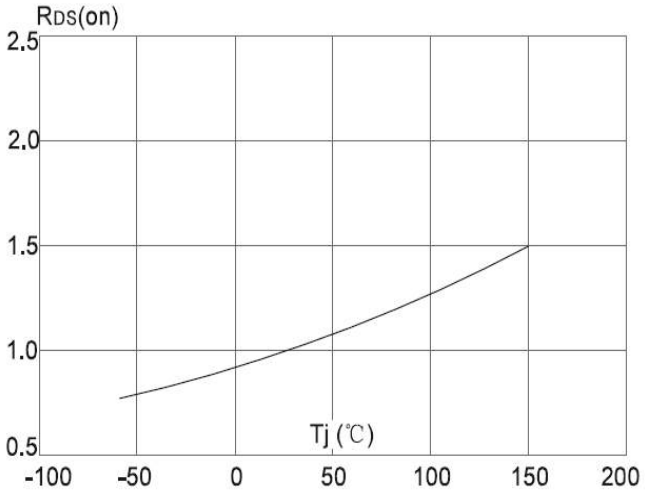


Fig. 9 Normalized on Resistance vs. Junction Temperature

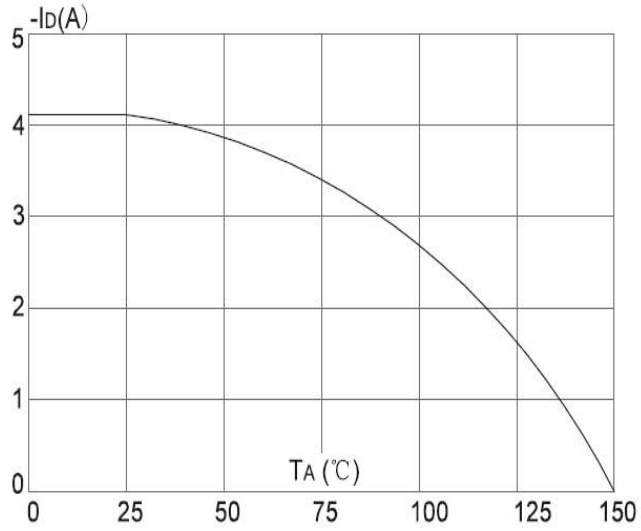


Fig.8 Maximum Continuous Drain Current VS. Ambient Temperature

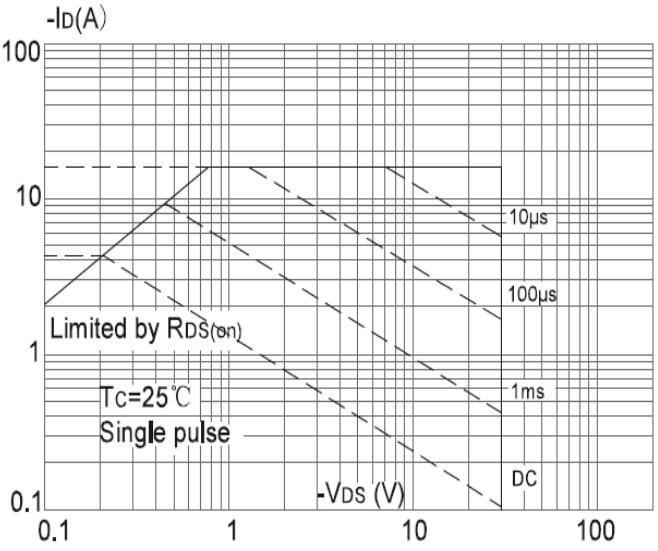


Fig.10 Maximum Safe Operating Area

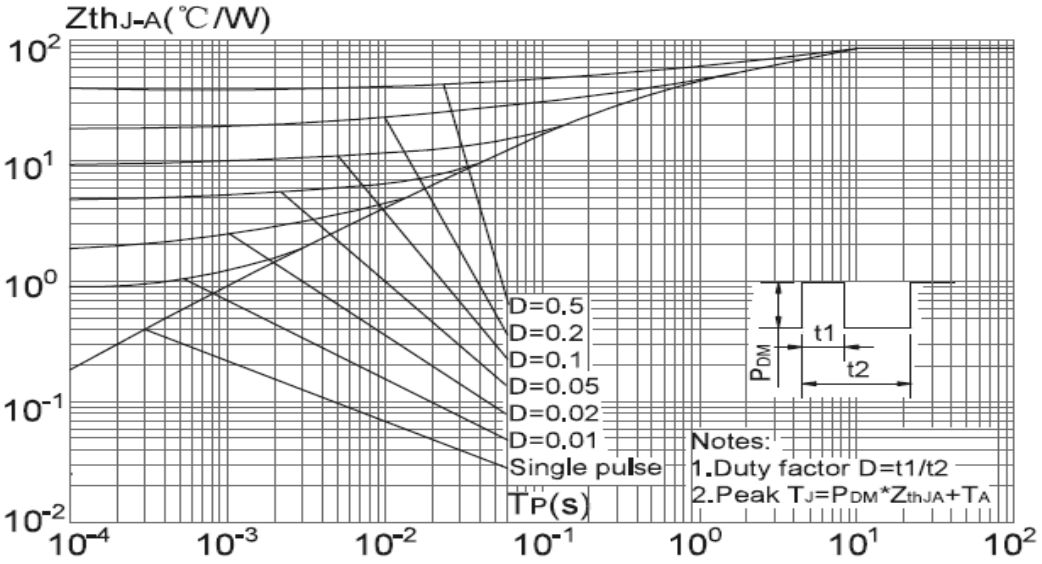
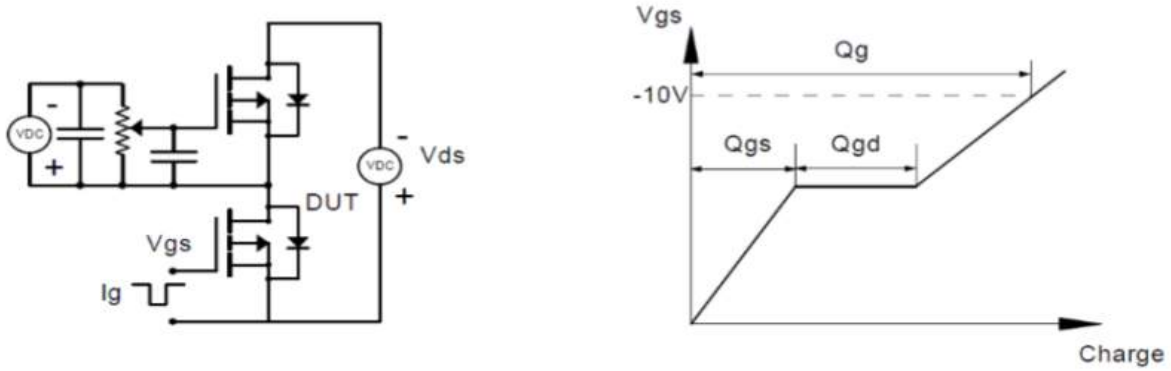


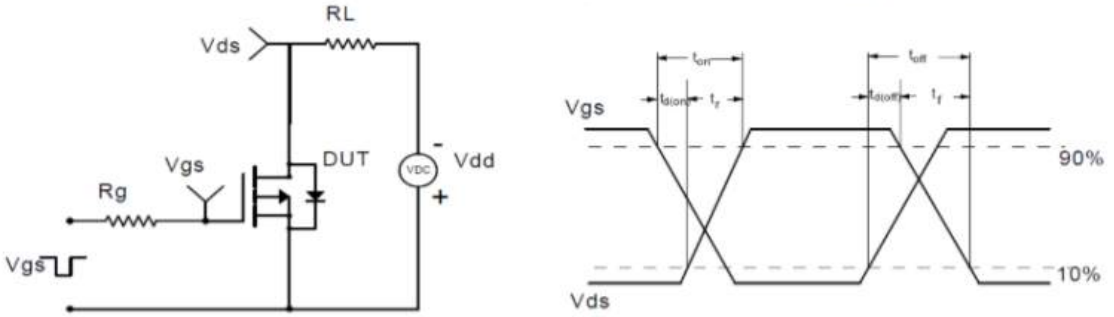
Fig. 11 Maximum Effective Transient Thermal Impedance，Junction-to-Ambient

Test Circuit

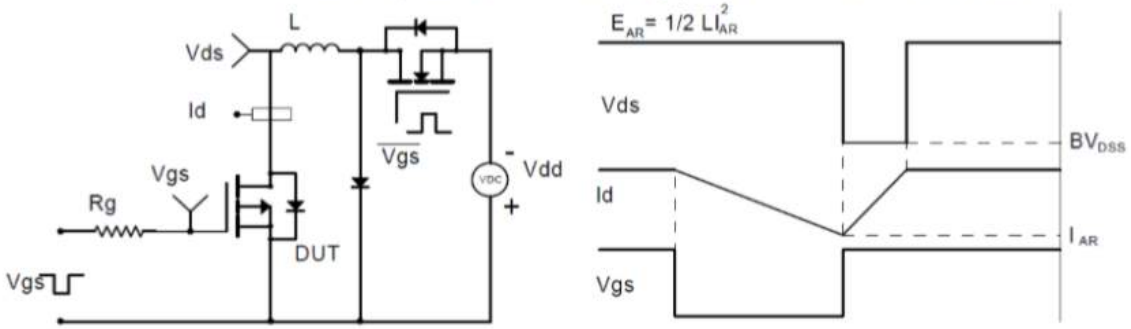
Gate Charge Test Circuit & Waveform



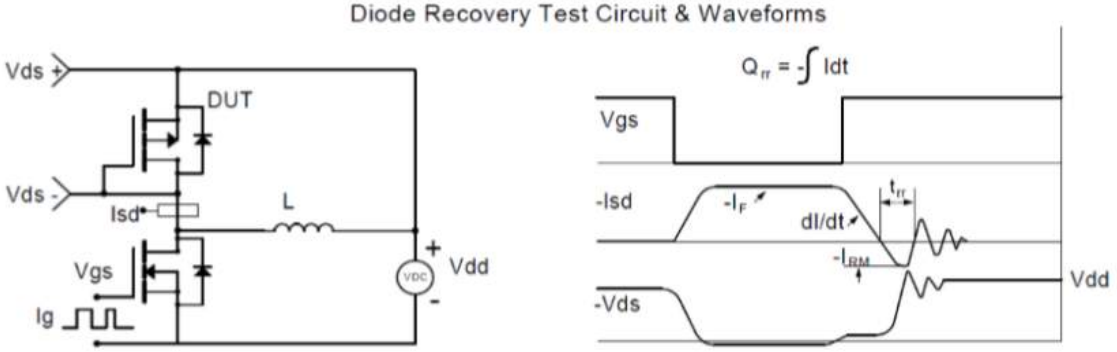
Resistive Switching Test Circuit & Waveforms



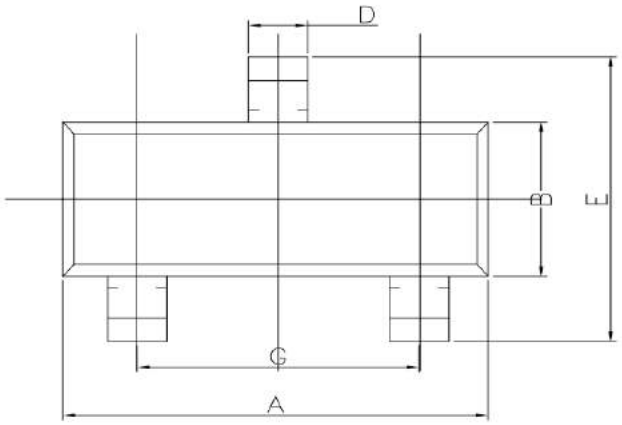
Unclamped Inductive Switching (UIS) Test Circuit & Waveforms

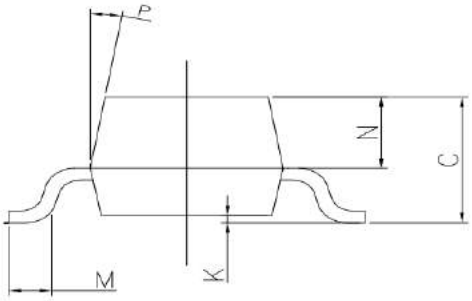


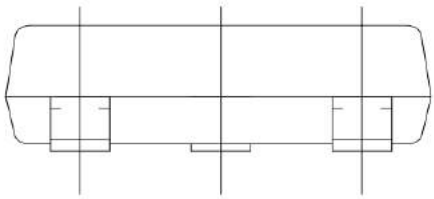
Diode Recovery Test Circuit & Waveforms



SOT-23 Package Information







DIM	MILLIMETERS
A	2.90 ± 0.1
B	1.30 ± 0.10
C	0.90 ~ 1.15
D	0.40 ± 0.1
E	2.40 ± 0.15
G	1.90 ± 0.10
K	0.00~0.10
M	0.30MIN
N	0.60 ± 0.10
P	10°TYP

Customer Service

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