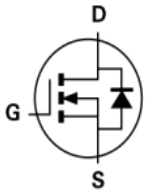
ZX50N15AD

N-Channel SGT Power MOSFET

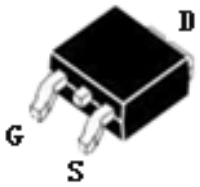
MAIN CHARACTERISTICS

I_D	50A
V_{DSS}	150V
R_{DSON}-typ （@V_{GS}=10V）	15.6mΩ



FEATURES

- Ultra-Low RDS(ON)
- Low Gate Charge
- High Current Capability



TO-252

APPLICATIONS

- Power Management in Telecom.,Industrial Automation
- Motor Driving in Power Tool,E-vehicle,Robotics
- Current Switching in DC/DC&AC/DC(SR) Sub-systems

MECHANICAL DATA

- Case: Molded plastic
- Mounting Position: Any

Product specification classification

Part Number	Package	Mode Name	Pack
ZX50N15AD	TO-252	ZX50N15AD	Tape

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Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	±20	V
Continue Drain Current	I_D	50	A
Pulsed Drain Current (Note1)	I_{DM}	200	A
Power Dissipation	P_D	96	W
Single Pulse Avalanche Energy (Note1)	E_{AS}	135	mJ
Operating Temperature Range	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	°C/W

Note1:Pulse test: 300 μs pulse width, 2 % duty cycle

Electrical Characteristics at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	150	-	-	V
Drain-Source Leakage Current	V_{DS} = 150 V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	2.2	-	4.2	V
Drain-Source On-State Resistance	V_{GS} = 10 V, I_D = 20 A	$R_{DS(on)}$	-	15.6	18.8	mΩ
Input Capacitance	V_{GS} = 0 V, V_{DS} = 75 V, f = 1 MHz	C_{iss}	-	2500	-	pF
Output Capacitance		C_{oss}	-	210	-	pF
Reverse Transfer Capacitance		C_{rss}	-	20	-	pF
Turn-on Delay Time(Note2)	VGS=10V, V_{DD} =75 V, RG= 6 Ω,ID = 20 A	$t_{d(ON)}$	-	7.1	-	ns
Rise Time(Note2)		t_r	-	8.4	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	17	-	ns
Fall Time(Note2)		t_f	-	11	-	ns
Total Gate Charge(Note2)	I_D = 20 A, V_{DD} = 75 V, V_{GS} = 10 V	Q_G	-	23	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	7.7	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	4.7	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	50	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	200	A
Drain-Source Diode Forward Voltage	I_{SD} = 20 A	V_{SD}	-	-	1.2	V
Reverse Recovery Time(Note2)	I_{SD} = 20 A, V_{GS} = 0 V, dIF / dt = 100 A/μs	trr	-	86	-	ns
Reverse Recovery Charge(Note2)		Qrr	-	137	-	nC

Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

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RATINGS AND CHARACTERISTIC CURVES

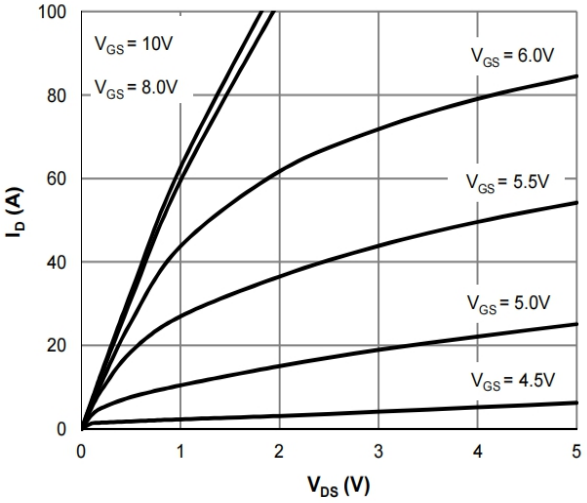


Figure 1: Saturation Characteristics

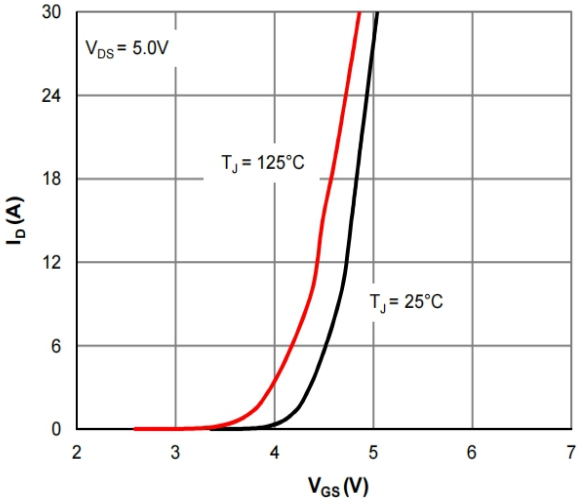


Figure 2: Transfer Characteristics

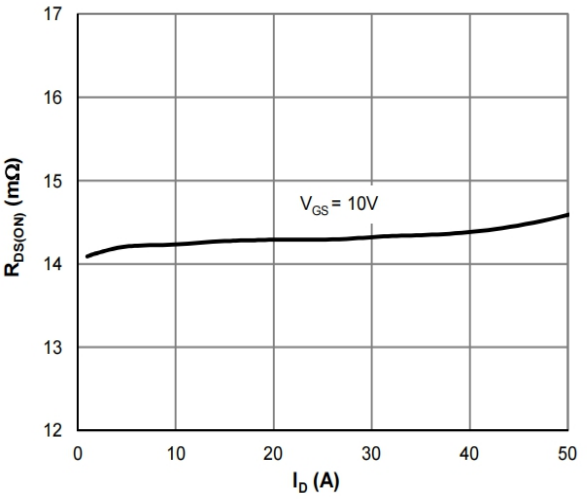


Figure 3: $R_{DS(ON)}$ vs. Drain Current

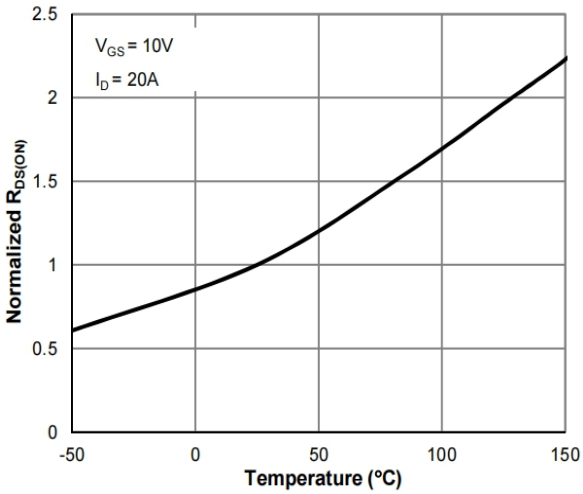


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

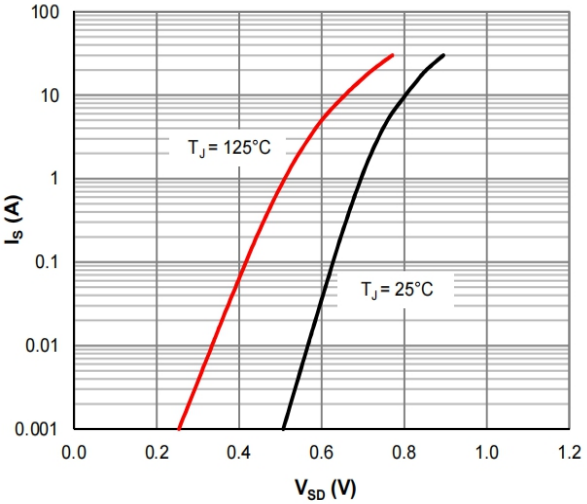


Figure 5: Body-Diode Characteristics

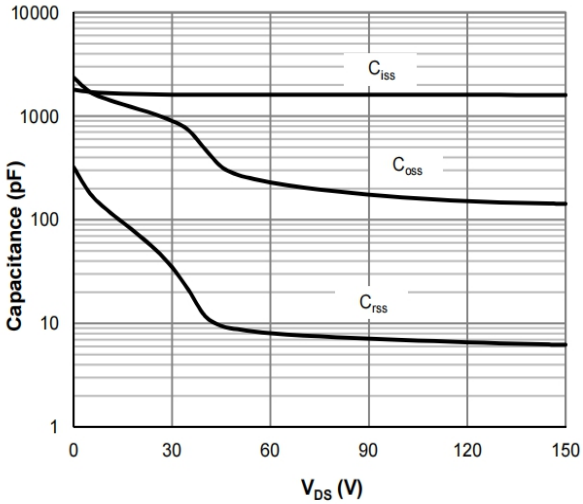


Figure 6: Capacitance Characteristics

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RATINGS AND CHARACTERISTIC CURVES

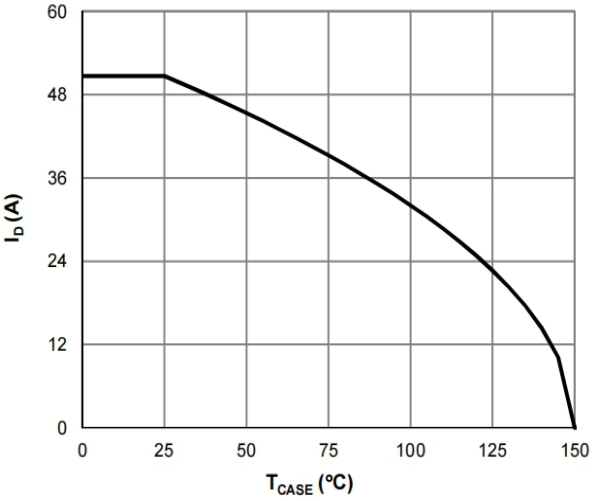


Figure 7: Current De-rating

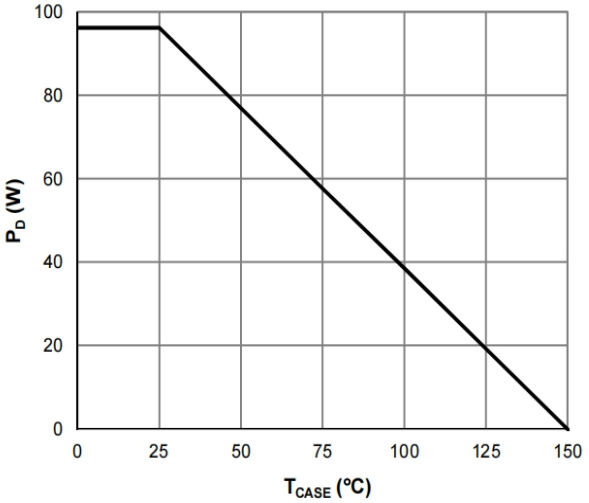


Figure 8: Power De-rating

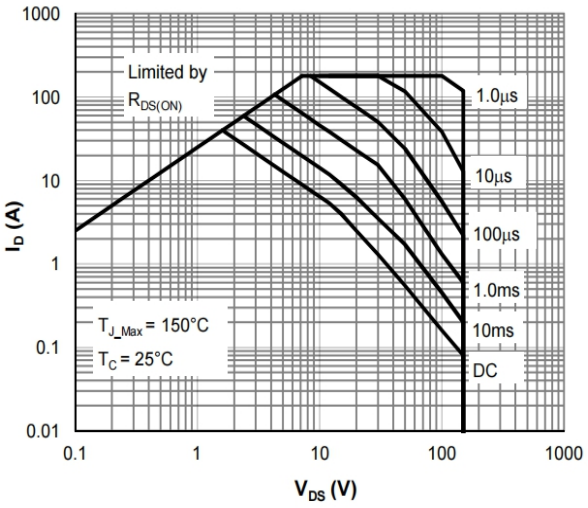


Figure 9: Maximum Safe Operating Area

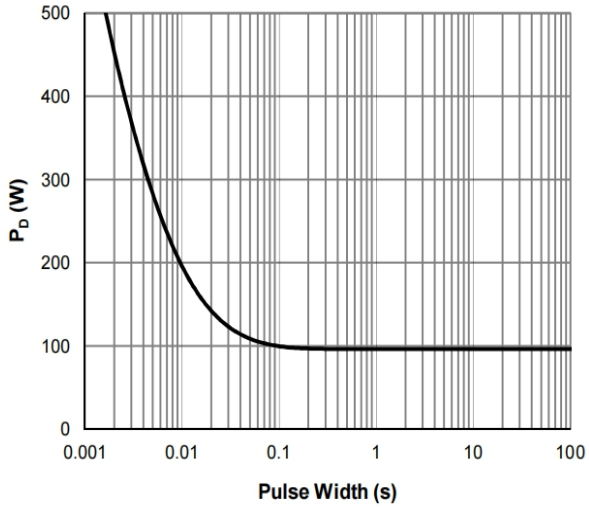


Figure 10: Single Pulse Power Rating, Junction-to-Case

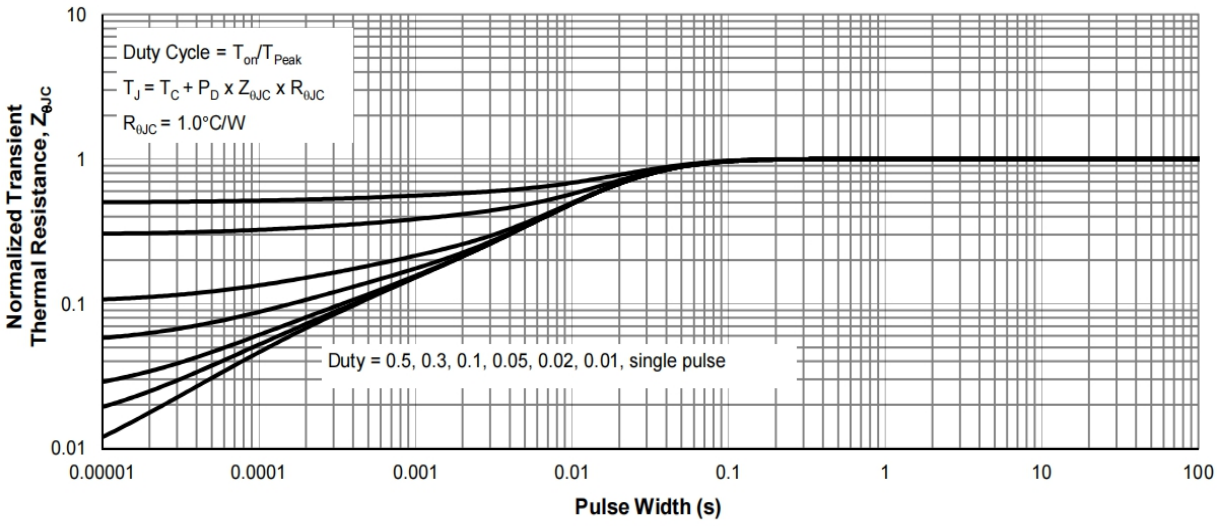
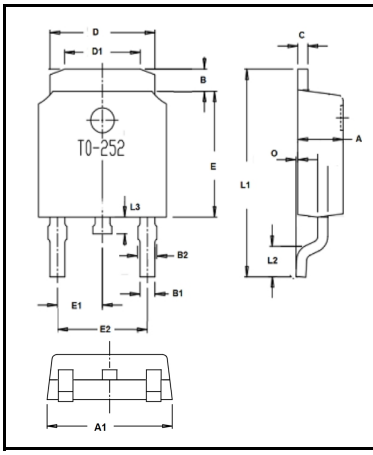


Figure 11: Normalized Maximum Transient Thermal Impedance

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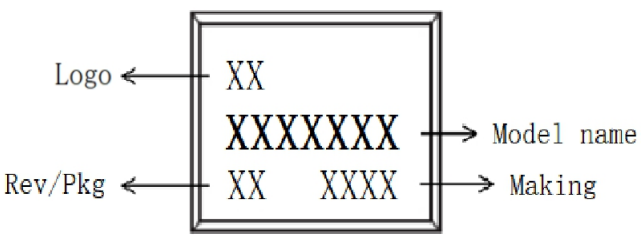
Package Outline Dimensions millimeters

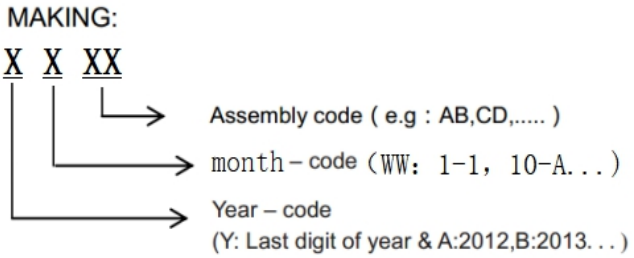
TO-252



Dim.	Min.	Max.
A	2.1	2.5
A1	6.3	6.9
B	0.95	1.55
B1	0.6	0.8
B2	0.75	0.95
C	Typ0.5	
D	5.3	5.5
D1	3.65	4.05
E	5.8	6.4
E1	Typ2.3	
E2	Typ4.6	
O	0	0.15
L1	9	11
L2	Typ1.5	
L3	0.7	1
All Dimensions in millimeter		

Marking on the body





packing instruction

PKG	最小包装	内盒	外箱
TO-252	2500pcs/盘	5000pcs/盒	25000pcs/箱

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