



FEATURES

- $V_{DS} = 30V, I_D = 5A$
 $R_{DS(ON)} < 52m\ \Omega @ V_{GS} = 2.5V$
 $R_{DS(ON)} < 36\ m\ \Omega @ V_{GS} = 4.5V$
 $R_{DS(ON)} < 35m\ \Omega @ V_{GS} = 10V$
- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package
- Available in SOT23 Package

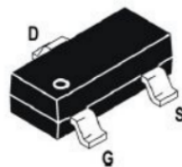
Product Summary

V_{DS}	$R_{DS(ON)}$ @4.5V (Max)	$R_{DS(ON)}$ @2.5V (Max)	$R_{DS(ON)}$ @10V (Max)	I_D
30V	36m Ω	52m Ω	35m Ω	5A

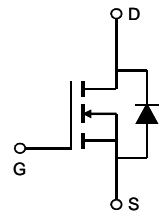
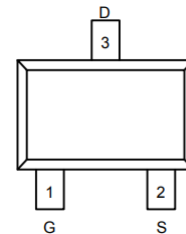
APPLICATIONS

- PWM applications
- Load switch
- Power management

top view



SOT23



Absolute Maximum Ratings $T_A = 25^\circ C$ unless otherwise noted

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	$T_A = 25^\circ C$	5
		$T_A = 70^\circ C$	3.9
Pulsed Drain Current ^C	I_{DM}	30	A
Power Dissipation ^B	P_D	$T_A = 25^\circ C$	1.4
		$T_A = 70^\circ C$	0.9
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Thermal Characteristics					
Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^A	$t \leq 10s$	$R_{\theta JA}$	70	90	$^\circ C/W$
Maximum Junction-to-Ambient ^{A D}	Steady-State		100	125	$^\circ C/W$
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	63	80	$^\circ C/W$

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV _{DSS}	Drain-Source Breakdown Voltage	I _D =250μA, V _{GS} =0V	30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =24V, V _{GS} =0V T _J =55°C			1 5	μA
I _{GSS}	Gate-Body leakage current	V _{DS} =0V, V _{GS} =±12V			100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.6	1.1	1.5	V
I _{D(ON)}	On state drain current	V _{GS} =4.5V, V _{DS} =5V	30			A
R _{DS(ON)}	Static Drain-Source On-Resistance	V _{GS} =10V, I _D =5A T _J =125°C		29	35	mΩ
				39		
		V _{GS} =4.5V, I _D =5A V _{GS} =2.5V, I _D =4A		32	36	mΩ
g _{FS}	Forward Transconductance	V _{DS} =5V, I _D =5A		15		S
V _{SD}	Diode Forward Voltage	I _S =1A, V _{GS} =0V		0.77	1	V
I _S	Maximum Body-Diode Continuous Current				2	A
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =15V, f=1MHz		823		pF
C _{oss}	Output Capacitance			99		pF
C _{riss}	Reverse Transfer Capacitance			77		pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1MHz	2	4	6	Ω
SWITCHING PARAMETERS						
t _{D(on)}	Turn-On DelayTime	V _{GS} =10V, V _{DS} =15V, R _L =2.6Ω, R _{GEN} =3Ω		3.3		ns
t _r	Turn-On Rise Time			4.8		ns
t _{D(off)}	Turn-Off DelayTime			26.3		ns
t _f	Turn-Off Fall Time			4.1		ns

A. The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A=25° C. The value in any given application depends on the user's specific board design.

B. The power dissipation P_D is based on T_{J(MAX)}=150° C, using ≤ 10s junction-to-ambient thermal resistance.

C. Repetitive rating, pulse width limited by junction temperature T_{J(MAX)}=150° C. Ratings are based on low frequency and duty cycles to keep initial T_J=25° C.

D. The R_{θJA} is the sum of the thermal impedance from junction to lead R_{θJL} and lead to ambient.

E. The static characteristics in Figures 1 to 6 are obtained using <300μs pulses, duty cycle 0.5% max.

F. These curves are based on the junction-to-ambient thermal impedance which is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, assuming a maximum junction temperature of T_{J(MAX)}=150° C. The SOA curve provides a single pulse rating.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

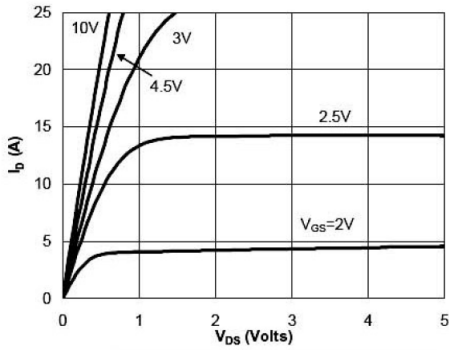


Fig 1: On-Region Characteristics (Note E)

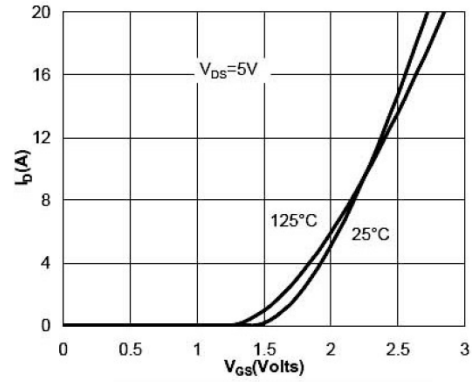


Figure 2: Transfer Characteristics (Note E)

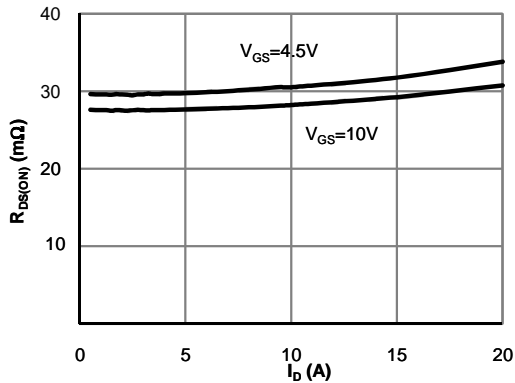


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

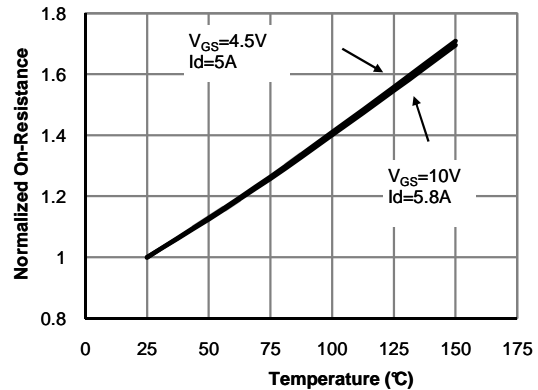


Figure 4: On-Resistance vs. Junction Temperature (Note E)

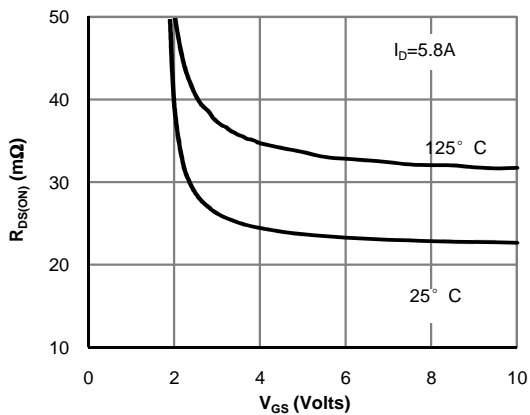


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

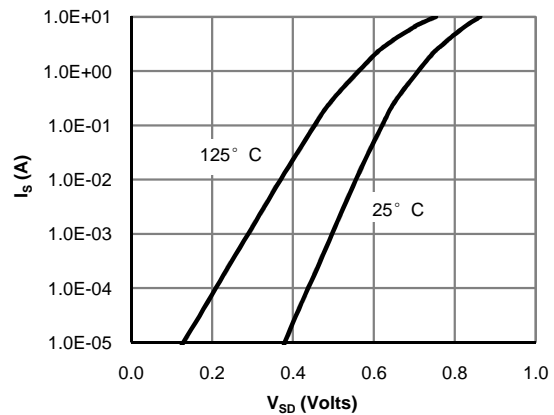


Figure 6: Body-Diode Characteristics (Note E)

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

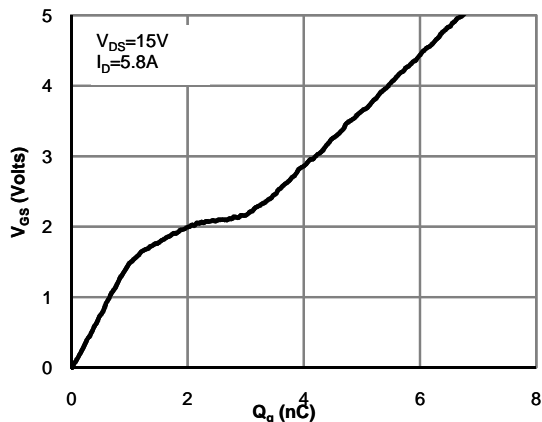


Figure 7: Gate-Charge Characteristics

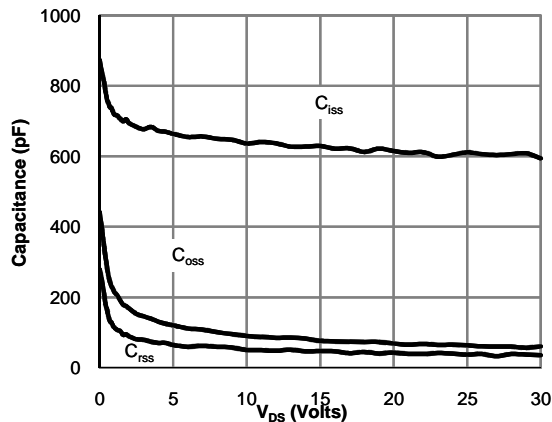


Figure 8: Capacitance Characteristics

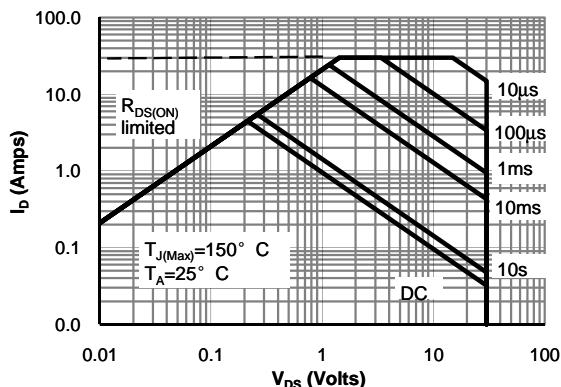


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

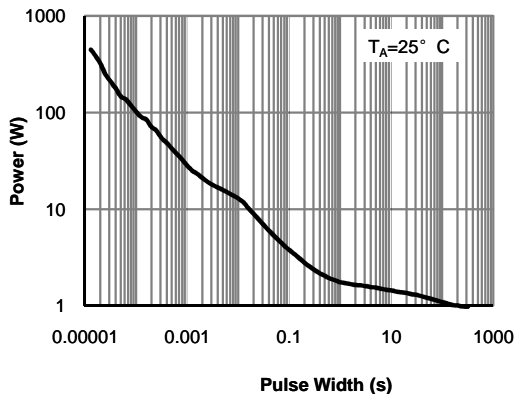


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

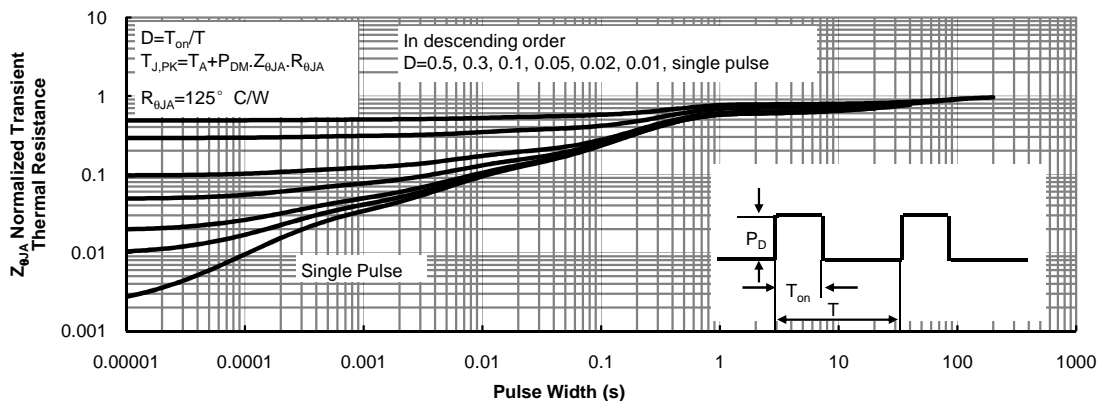
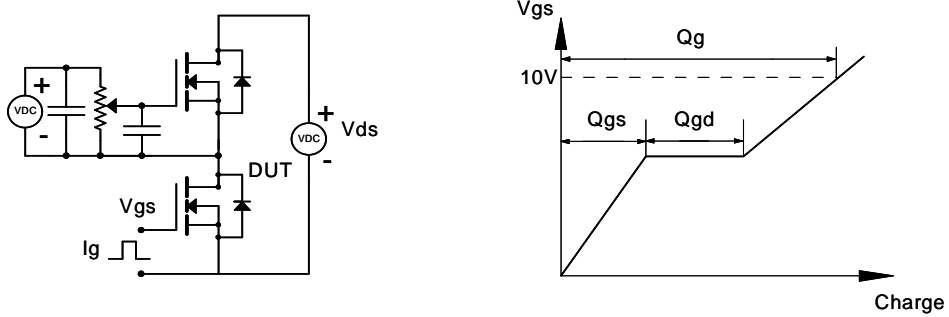
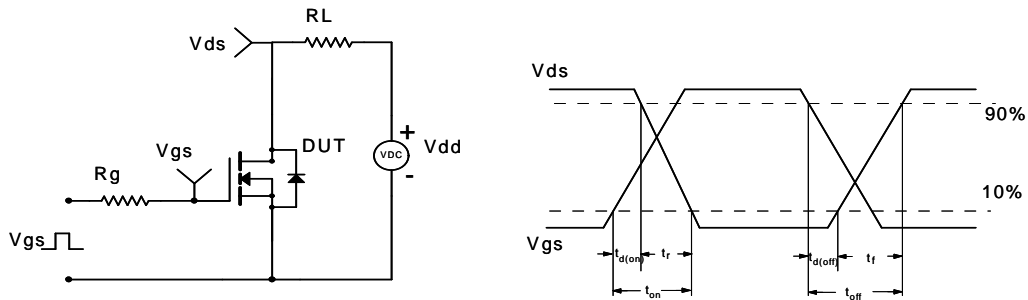


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

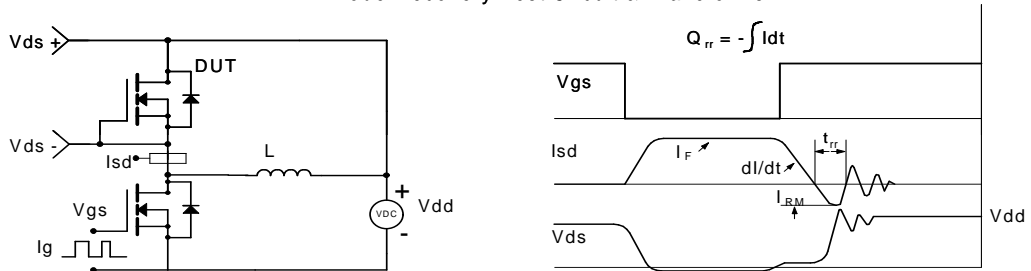
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

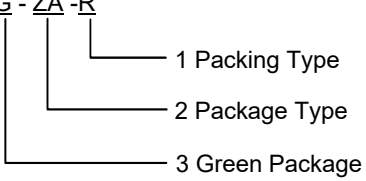


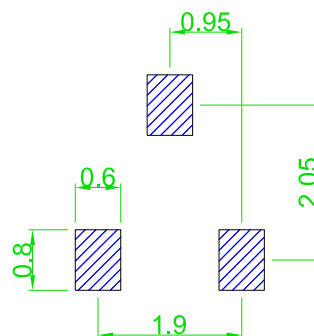
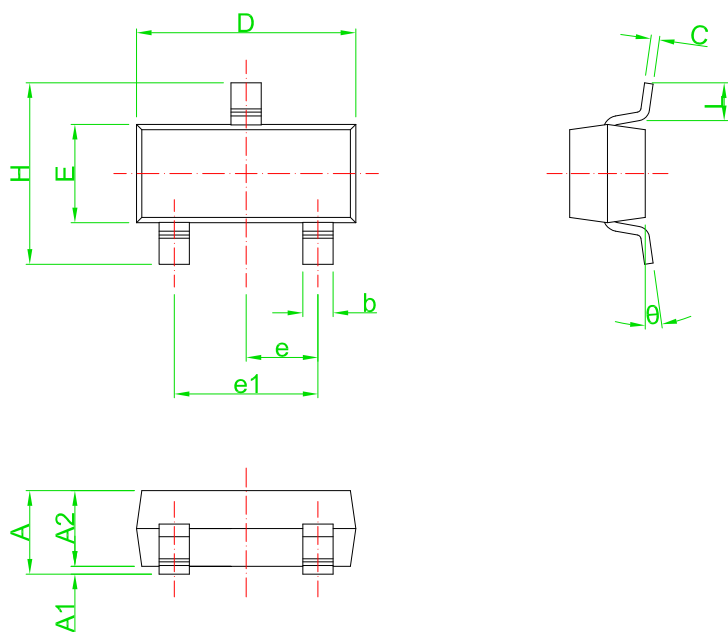
Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
ASDM3400ZA	3400	SOT23	Tape&Reel	3000/Reel	-	-

PACKAGE	MARKING
SOT23	<div style="border: 1px solid black; width: 100px; height: 50px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> 3400 </div>

Ordering Number		Package
Lead Free	Halogen Free	
ASDM3400-ZA-R	ASDM3400G-ZA-R	SOT23

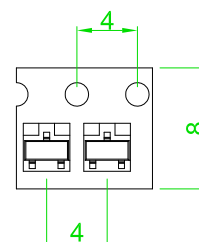
<p>ASDM3400G - ZA - R</p>  <p>1 Packing Type</p> <p>2 Package Type</p> <p>3 Green Package</p>	<p>1 T:Tube,R:Tape Reel</p> <p>2 ZA: SOT23</p> <p>3 blank : Lead Free</p> <p style="padding-left: 20px;">G:Halogen Free and Lead Free</p>
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Recommended Land Pattern

SOT23

Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.55	0.012	0.022
C	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
e	0.95 TYP		0.037 TYP	
e1	1.80	2.00	0.071	0.079
H	2.25	2.55	0.089	0.100
L	0.30	0.50	0.012	0.020
θ	0°	8°	0°	8°



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