FEATURES

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

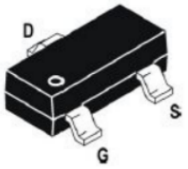
Product Summary

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

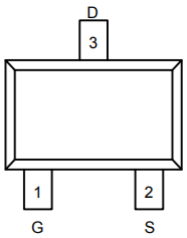
APPLICATIONS

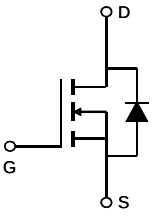
- PWM applications
- Load switch
- Power management

top view



SOT23





Absolute Maximum Ratings T_A=25℃ unless otherwise noted

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

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

Electrical Characteristics (T_J=25℃ 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			1	μA
		T_J=55℃			5	
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		29	35	mΩ
		T_J=125℃			39	
		V_{GS}=4.5V, I_D=5A		32	36	mΩ
		V_{GS}=2.5V, I_D=4A		40	52	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_{rss}	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 $R_{\theta JA}$ 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 initialT_J=25° C.
D. The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ 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 impedence 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

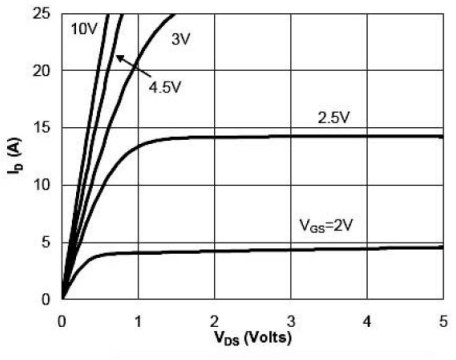


Fig 1: On-Region Characteristics (Note E)

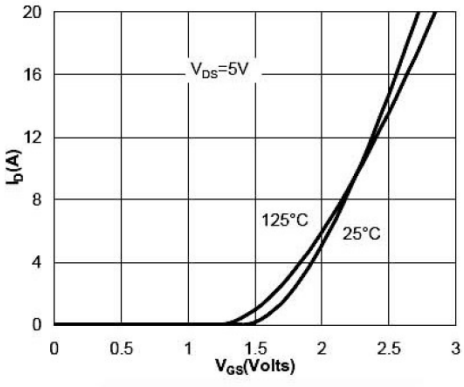


Figure 2: TransferCharacteristics (Note E)

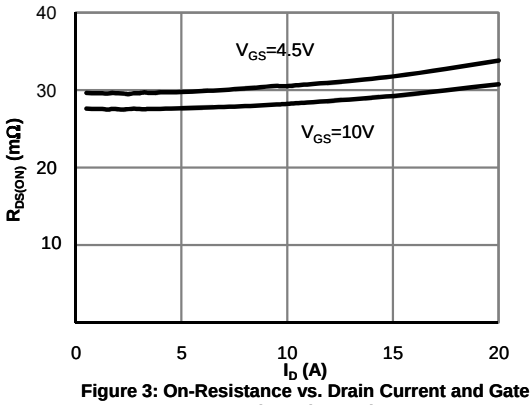


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

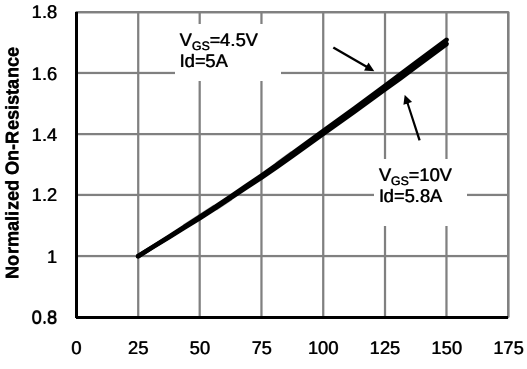


Figure 4: On-Resistance vs. Junction Temperature (Note E)

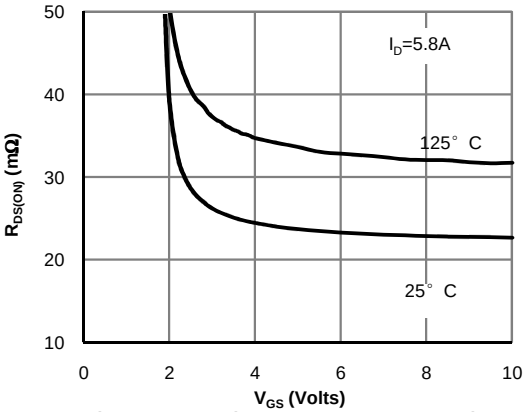


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

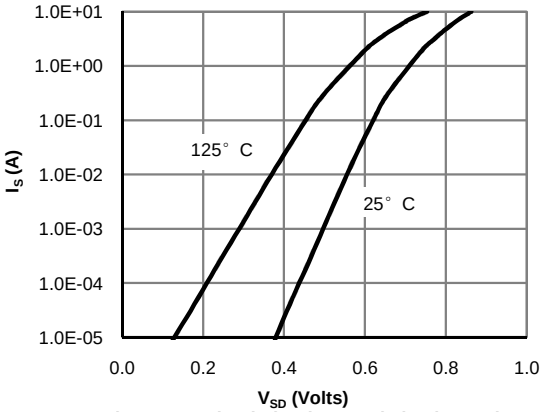


Figure 6: Body-Diode Characteristics (Note E)

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

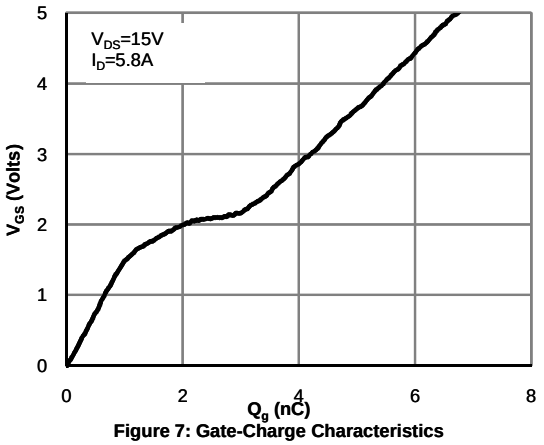


Figure 7: Gate-Charge Characteristics

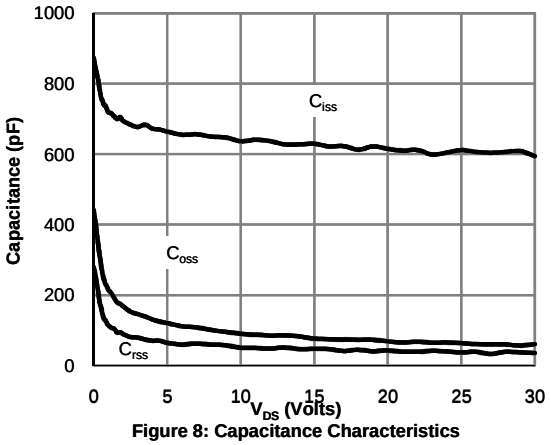


Figure 8: Capacitance Characteristics

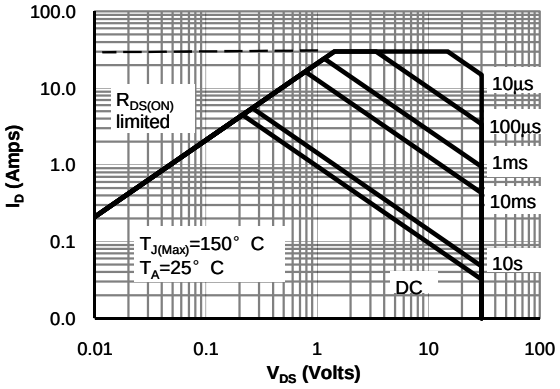


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

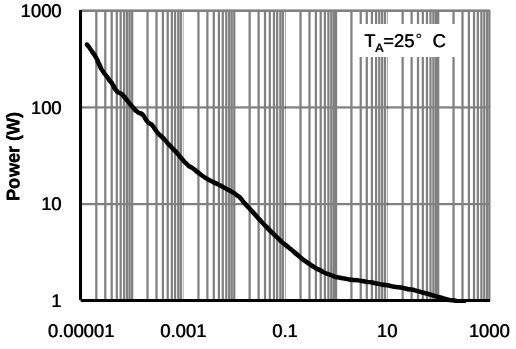


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

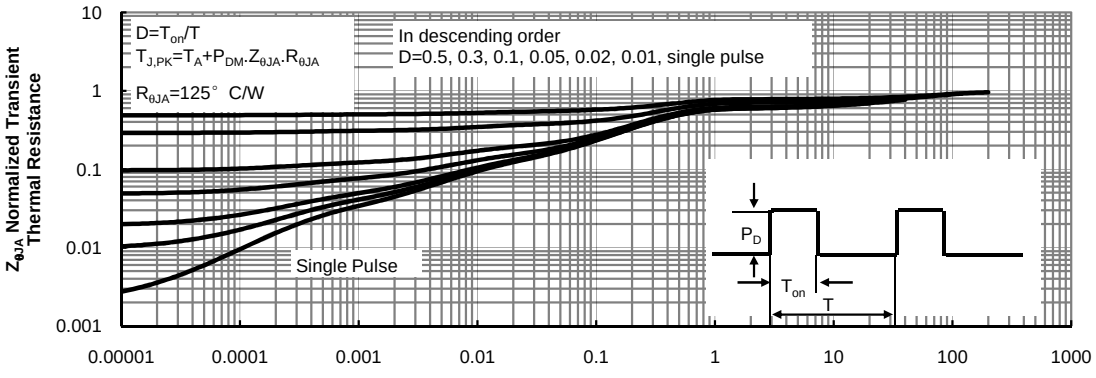
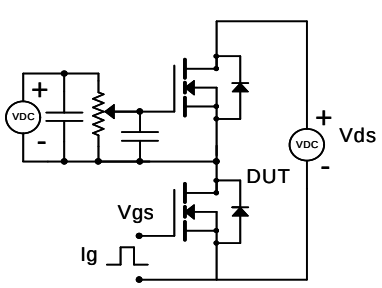
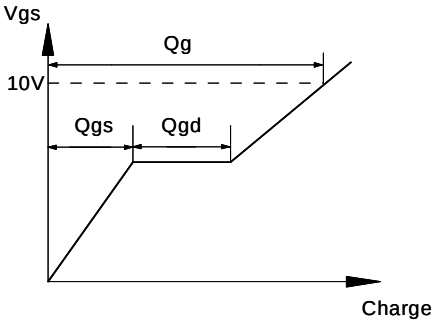


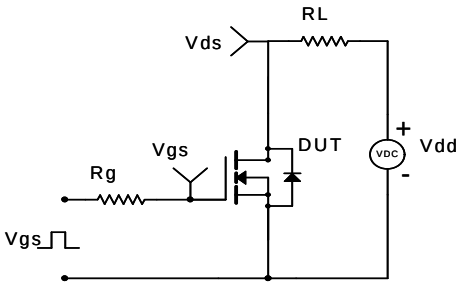
Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

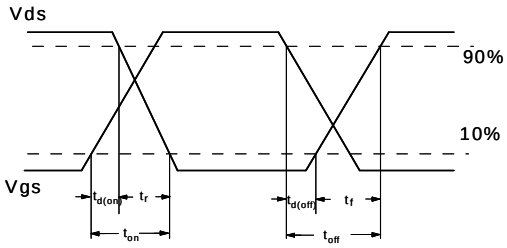
Gate Charge Test Circuit & Waveform



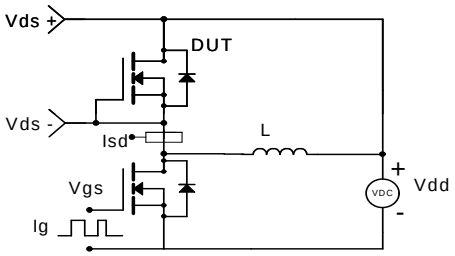


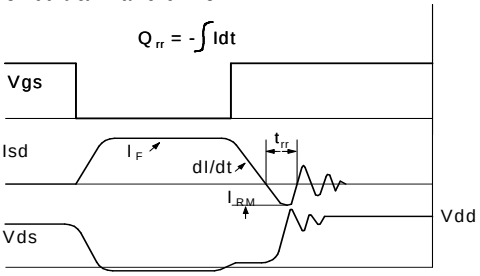
Resistive Switching Test Circuit & Waveforms





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	3400

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

ASDM3400G - ZA -R

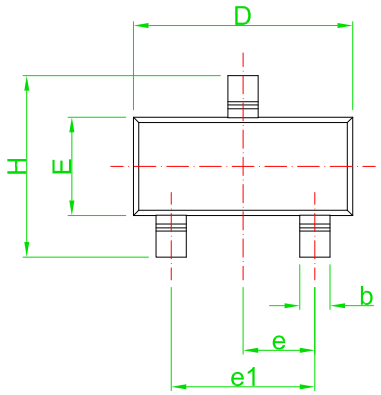
- 1 Packing Type
- 2 Package Type
- 3 Green Package

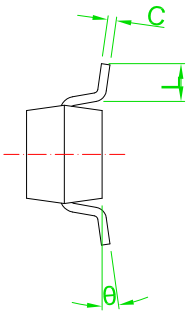
1 T:Tube,R:Tape Reel

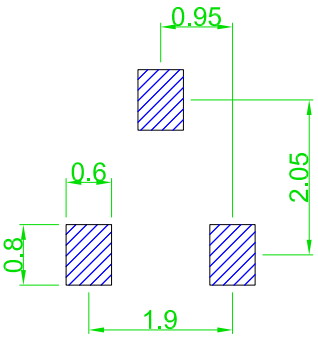
2 ZA: SOT23

3 blank : Lead Free

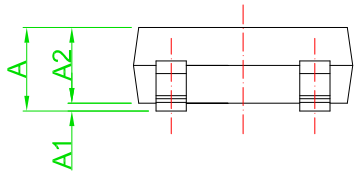
G:Halogen Free and Lead Free





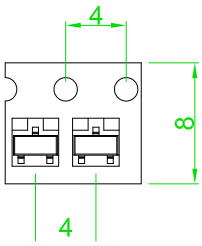


Recommended Land Pattern



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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