



Features

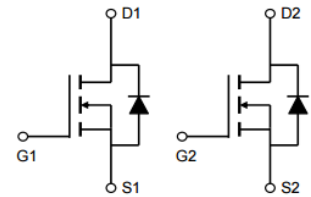
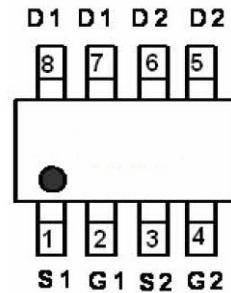
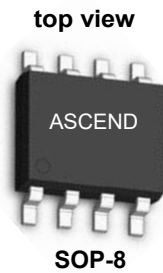
- Dual N-Channel, 5V Logic Level Control
- Enhancement mode
- Fast Switching
- High Effective

Application

- Power Management in Inverter System
- Synchronous Rectification

Product Summary

V_{DSS}	30	V
$R_{DS(ON)-Typ}$	15	m Ω
I_D	9	A



Maximum ratings, at $T_j=25^\circ\text{C}$, unless otherwise specified

Symbol	Parameter	Rating	Unit
$V_{(BR)DSS}$	Drain-Source breakdown voltage	30	V
I_S	Diode continuous forward current	$T_A=25^\circ\text{C}$ 2.3	A
I_D	Continuous drain current @ $V_{GS}=10\text{V}$	$T_A=25^\circ\text{C}$ 9	A
		$T_A=70^\circ\text{C}$ 5.0	A
I_{DM}	Pulse drain current tested ①	$T_A=25^\circ\text{C}$ 30	A
EAS	Avalanche energy, single pulsed ②	9	mJ
P_D	Maximum power dissipation	$T_A=25^\circ\text{C}$ 2.5	W
V_{GS}	Gate-Source voltage	± 20	V
MSL		Level 3	
T_{STG}	Storage temperature range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Typical	Unit
$R_{\theta JL}$	Thermal Resistance-Junction to Lead	40	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	50	$^\circ\text{C/W}$

**Electrical Characteristics@T_j=25°C(unless otherwise specified)**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =8A		15	20	mΩ
		V _{GS} =4.5V, I _D =6A		20	26	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	-	2.5	V
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =8A		15		S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =30V, V _{GS} =0V	-	-	10	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge	I _D =8A		4.1		nC
Q _{gs}	Gate-Source Charge	V _{DS} =15V	-	1.1	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =4.5V	-	2.5	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =15V	-	8	-	ns
t _r	Rise Time	I _D =1A	-	7	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω, V _{GS} =10V	-	15	-	ns
t _f	Fall Time	R _D =15Ω	-	5	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	350	420	pF
C _{oss}	Output Capacitance	V _{DS} =25V	-	55	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	35	-	pF
R _g	Gate Resistance	f=1.0MHz	-	3.2	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ²	I _S =1.1A, V _{GS} =0V	-	-	1.0	V
t _{rr}	Reverse Recovery Time	I _S = 8A, V _{GS} =0V,	-	15	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	-	14	-	nC

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in² copper pad of FR4 board, t ≤10sec ; 125 °C/W when mounted on Min. copper pad.

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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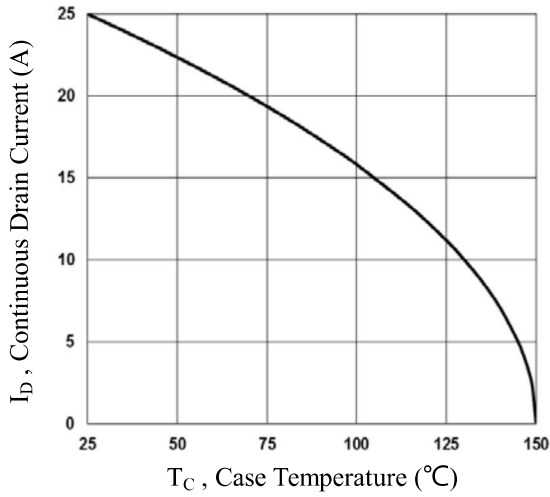


Fig.1 Continuous Drain Current vs. T_c

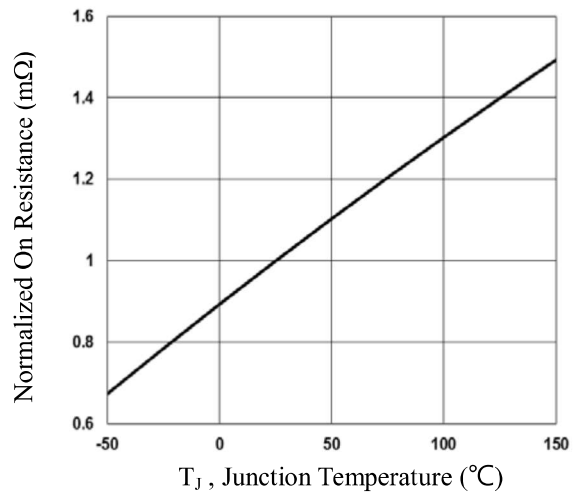


Fig.2 Normalized $R_{DS(on)}$ vs. T_j

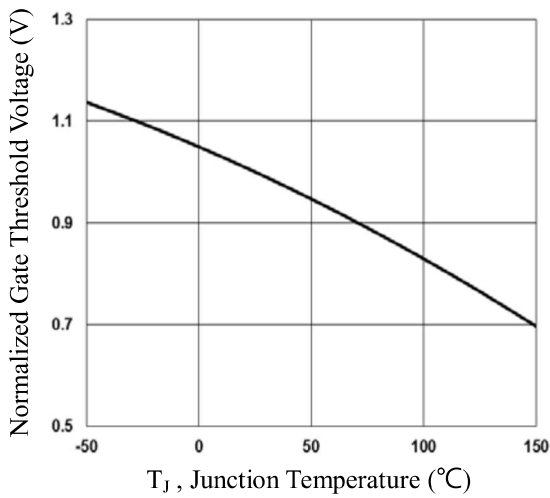


Fig.3 Normalized V_{th} vs. T_j

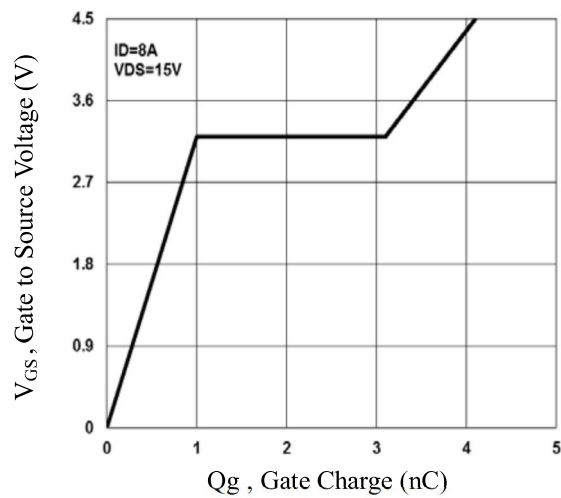


Fig.4 Gate Charge Waveform

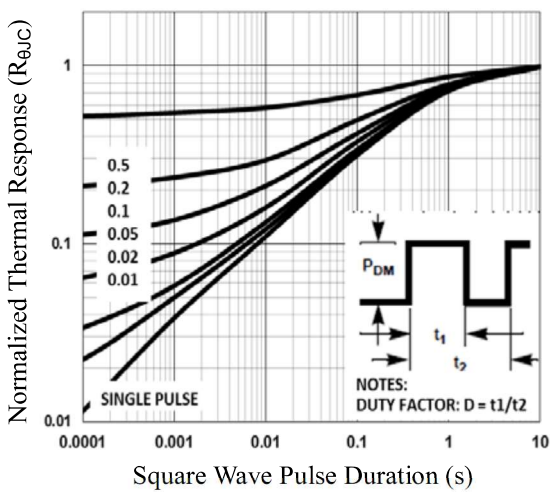


Fig.5 Normalized Transient Response

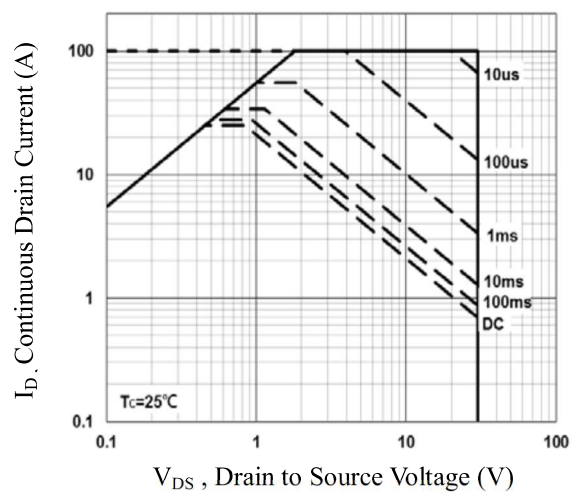


Fig.6 Maximum Safe Operation Area



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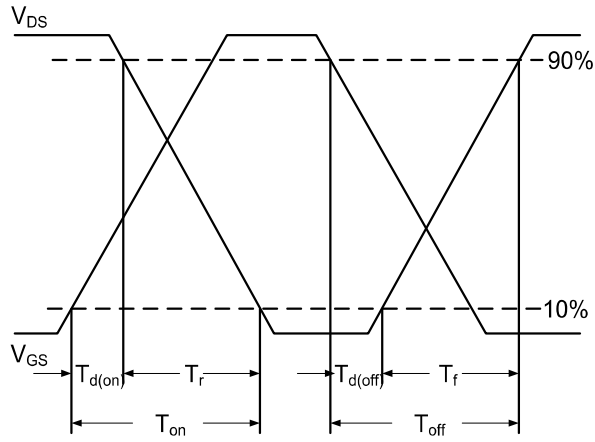


Fig.7 Switching Time Waveform

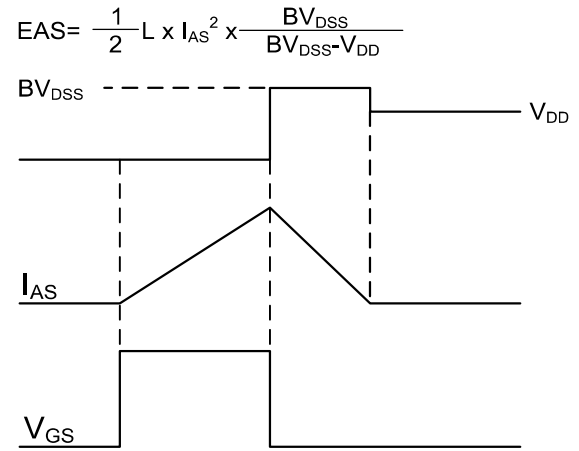


Fig.8 EAS Waveform



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Ordering and Marking Information

Device	Marking	Package	Packing	Quantity
ASDM3010S	3010	SOP-8	Tape Reel	4000

PACKAGE	MARKING
SOP-8	

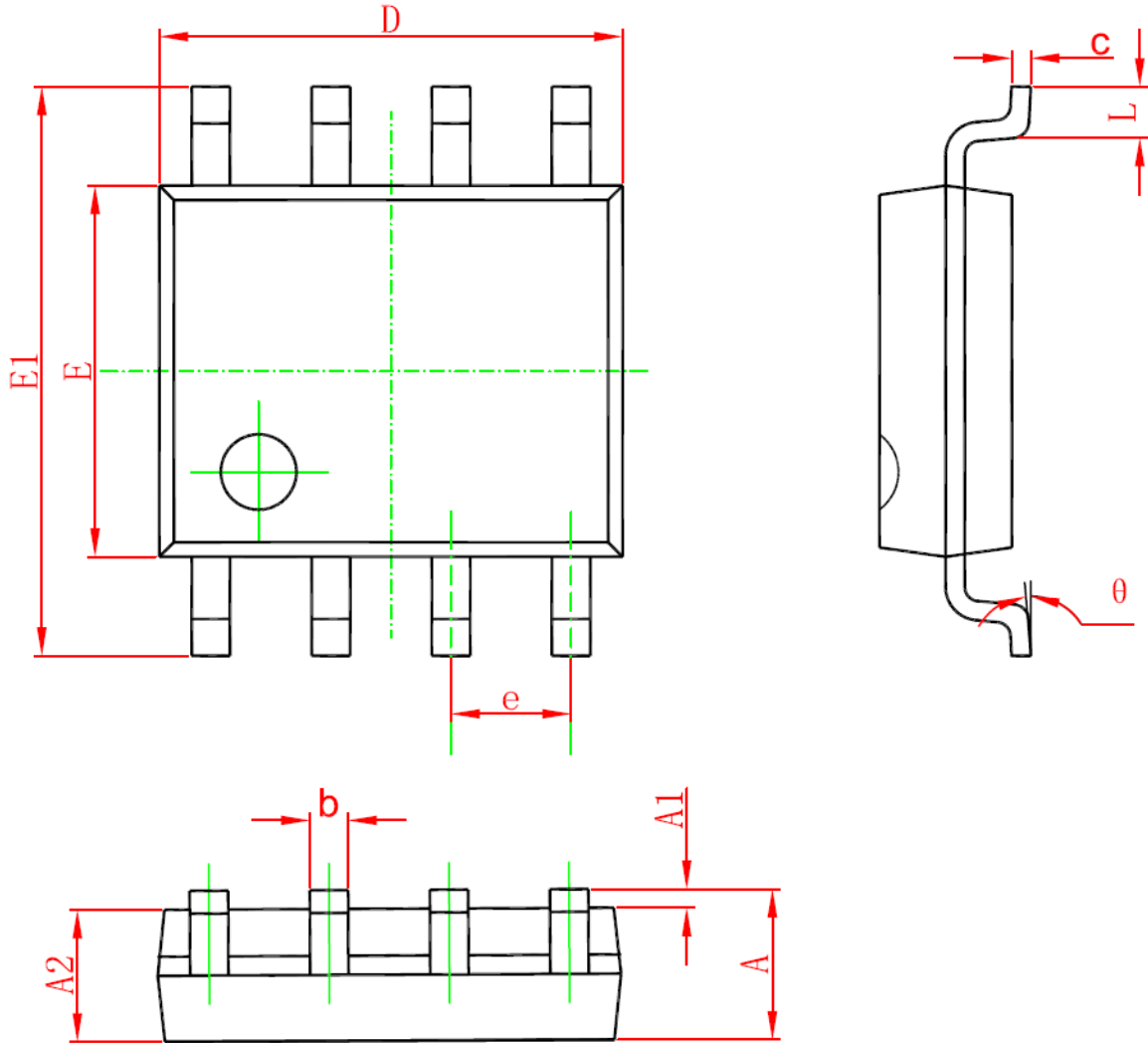
Ordering Information		Package
Lead Free	Halogen Free	
ASDM3010-S-R	ASDM3010G-S-R	SOP-8

<p>ASDM3010 G- S- R</p> <p>1 Packing Type</p> <p>2 Package Type</p> <p>3 Green Package</p>	<p>1 R:Tape Reel</p> <p>2 S:SOP-8</p> <p>3 blank: Lead Free</p> <p>G:Halogen Free</p>
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SOP-8 PACKAGE IN FORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



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