



Features

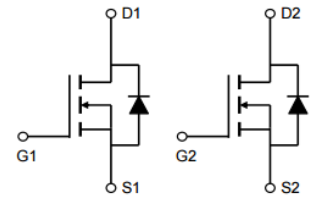
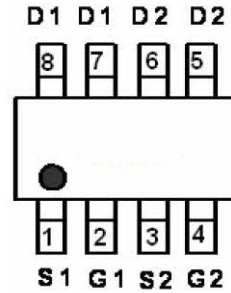
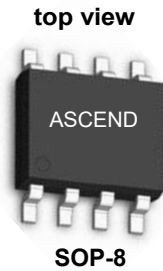
- Dual N-Channel, 5V Logic Level Control
- Enhancement mode
- Fast Switching
- High Effective

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	$V_{GS}=0V, I_D=250\mu A$	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	$V_{DS}=V_{GS}, I_D=250\mu A$	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	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	±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	$R_G=3.3\Omega, V_{GS}=10V$	-	15	-	ns
t_f	Fall Time	$R_D=15\Omega$	-	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	$di/dt=100A/\mu s$	-	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, $t \leq 10sec$; 125 °C/W when mounted on Min. copper pad.

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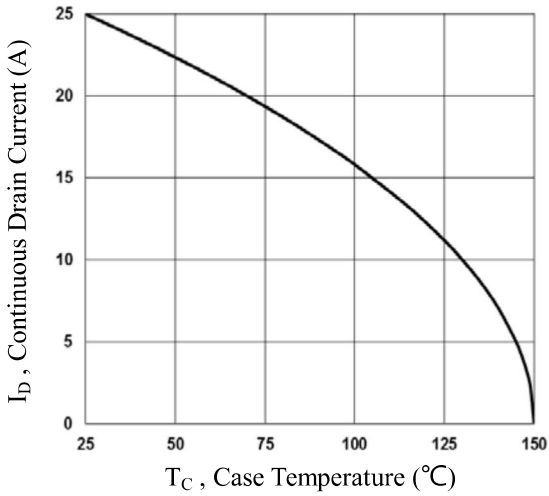


Fig.1 Continuous Drain Current vs. T_c

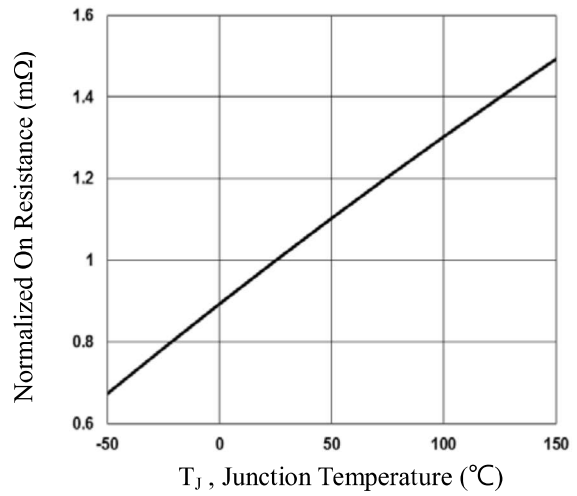


Fig.2 Normalized $R_{DS(on)}$ vs. T_j

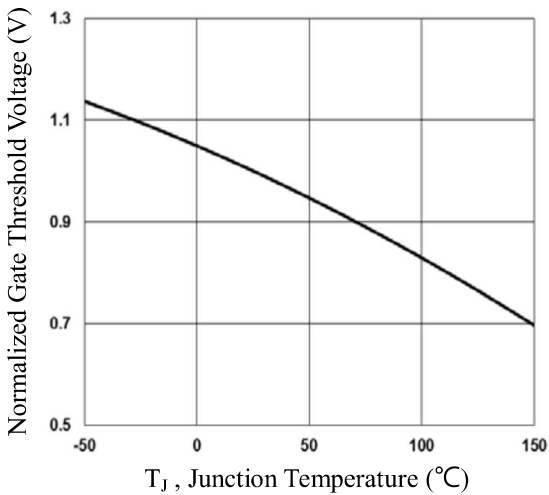


Fig.3 Normalized V_{th} vs. T_j

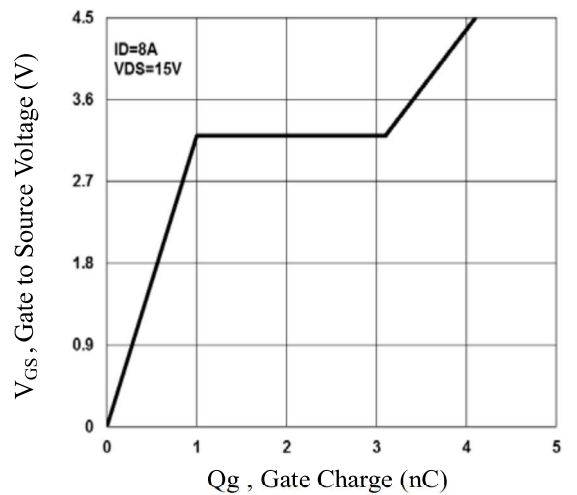


Fig.4 Gate Charge Waveform

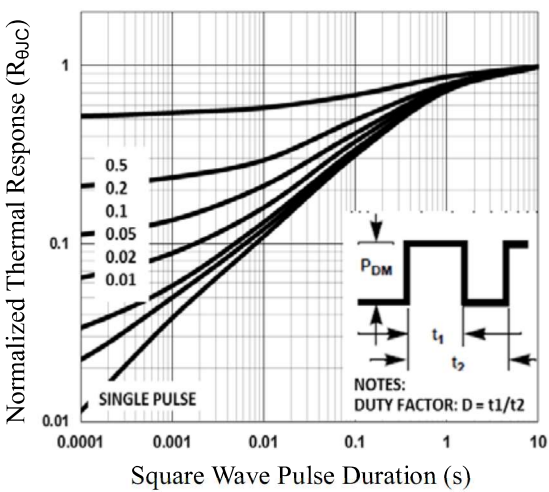


Fig.5 Normalized Transient Response

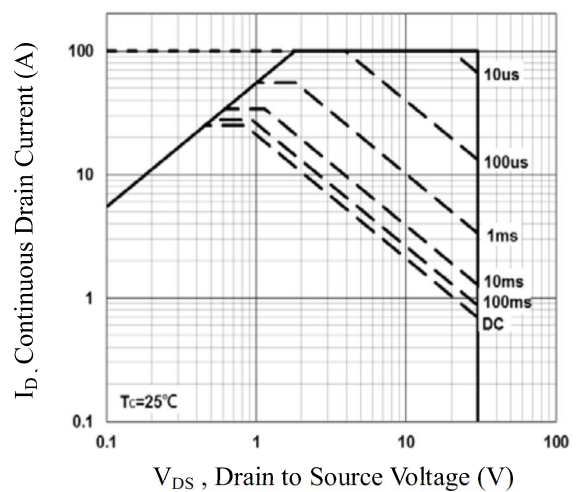


Fig.6 Maximum Safe Operation Area



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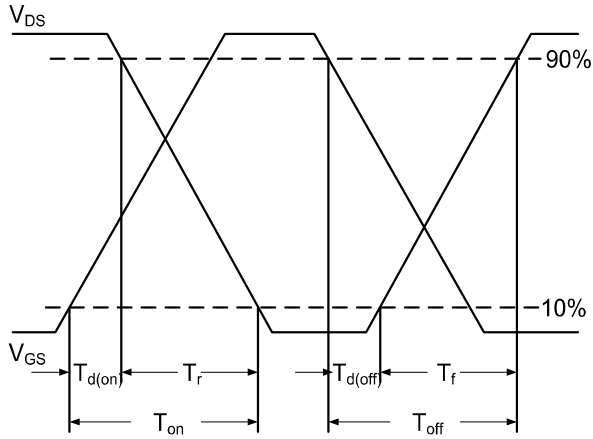


Fig.7 Switching Time Waveform

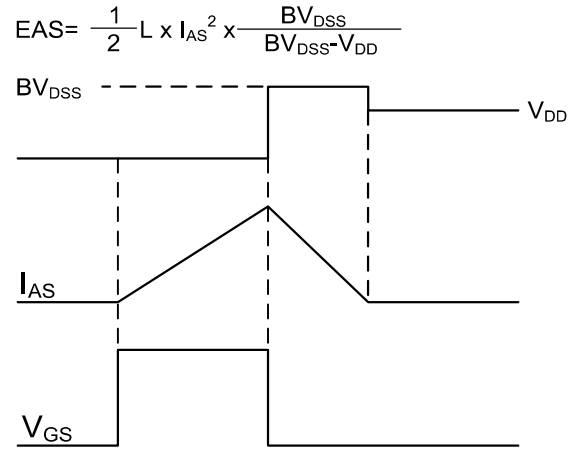


Fig.8 EAS Waveform



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Ordering and Marking Information

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

PACKAGE	MARKING
SOP-8	

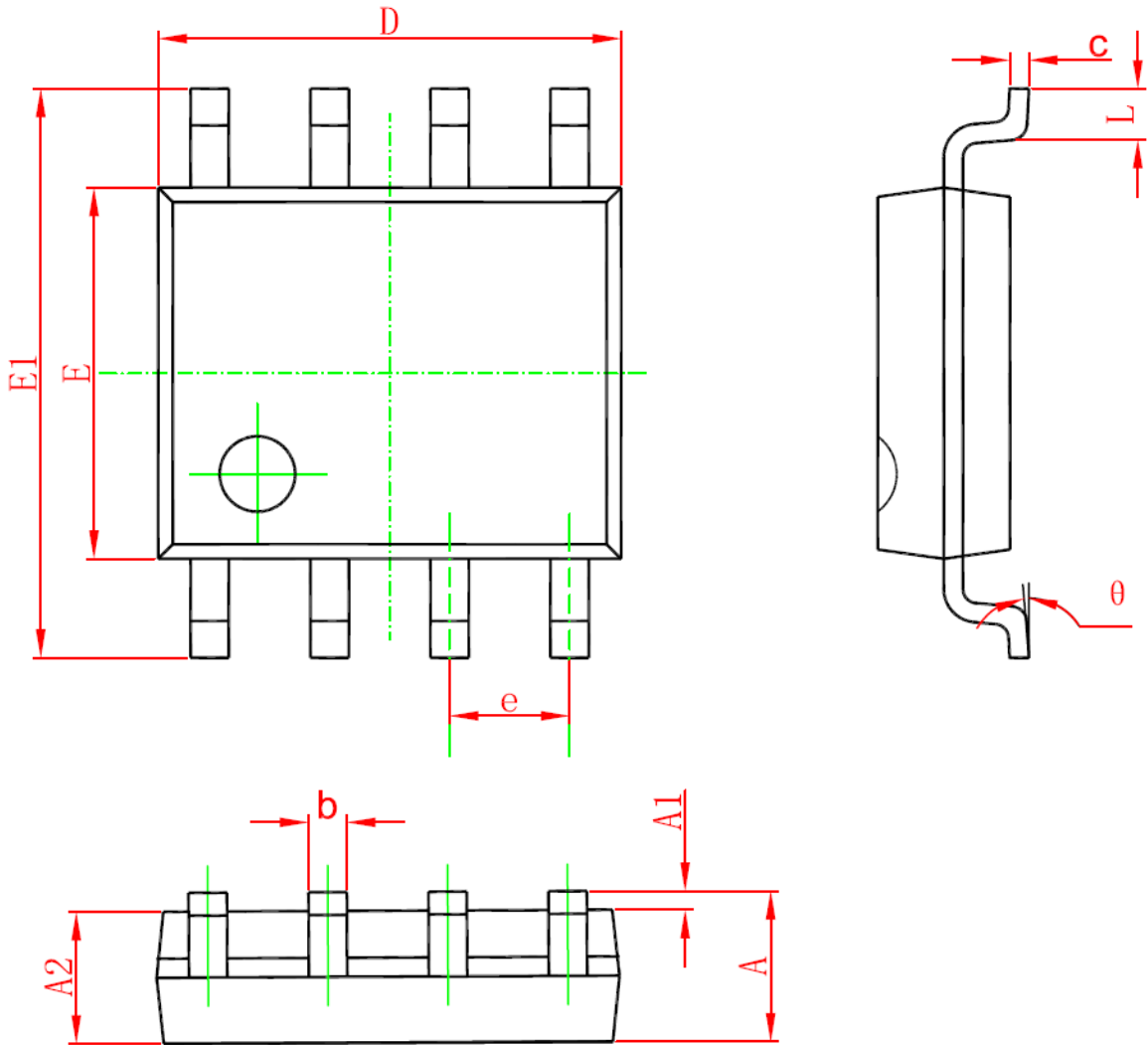
Ordering Information		Package
Lead Free	Halogen Free	
ASDM3010-S-R	ASDM3010G-S-R	SOP-8

<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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