ASDM30P30CTD

-30V P-Channel MOSFET

Features

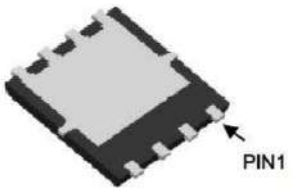
- Low RDS(ON)
- Fast switching
- Green Device Available

Application

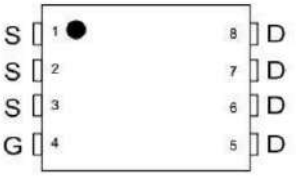
- MB / VGA / Vcore
- POL Applications

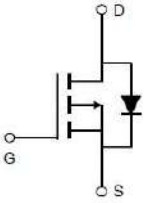
Product Summary

V_{DSS}	-30	V
$R_{DS(ON)-Typ.}$	15	mΩ
I_D	-30	A



DFN3*3-8





P-MOSFET

Absolute Maximum Ratings (T_J=25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±20	
T_J	Maximum Junction Temperature		150	℃
T_{STG}	Storage Temperature Range		-55 to 150	℃
I_S	Diode Continuous Forward Current		-30	A
I_{DM}①	Pulse Drain Current Tested	T_C=25°C	-60	A
I_D	Continuous Drain Current	T_C=25°C	-30	A
		T_C=100℃	-19	
P_D	Maximum Power Dissipation	T_C=25°C	17	W

Thermal Characteristics

Symbol	Parameter		Rating	Unit
$R_{\theta JC}$	Thermal Resistance-Junction to Case	Steady State	4.6	°C/W
$R_{\theta JA}$③	Thermal Resistance-Junction to Ambient	Steady State	62	°C/W

Note ① : Max. current is limited by bonding wire
Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C
Note ③ : Surface Mounted on 1in^2 FR-4 board with 1oz.

Electrical Characteristics (T_J=25°C Unless Otherwise Noted)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} =0V,I_D =-250uA	-30			V
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} =V_{DS}, I_D =-250uA	-1.2		-2.5	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=-30V, V_{GS} =0V			-1.0	uA
Gate- Source Leakage Current	I_{GSS}	V_{GS}=±12V ,V_{DS} =0V			±100	nA
Static Drain-source On Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-9A		15	20	mΩ
		V_{GS}=-4.5V, I_D=-8A		25	32	mΩ
Forward Transconductance	g_{FS}	V_{DS} =-10V, I_D=-5A		9		s

•Electronic Characteristics

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	Ciss	f = 1MHz	-	1650	-	pF
Output capacitance	Coss		-	330	-	
Reverse transfer capacitance	Crss		-	220	-	

•Gate Charge characteristics(T_a = 25°C)

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	Qg	VDD =25V	-	15	-	nC
Gate - Source charge	Qgs	ID = 8A	-	4	-	
Gate - Drain charge	Qgd	VGS = 10V	-	6	-	

Note: ① Pulse Test : Pulse width ≤ 300μs, Duty cycle ≤ 2% ;

② Device mounted on FR-4 substrate PC board, 2oz copper, with thermal bias to bottom layer 1inch square copper plate;

Fig.1 Power Dissipation Derating Curve

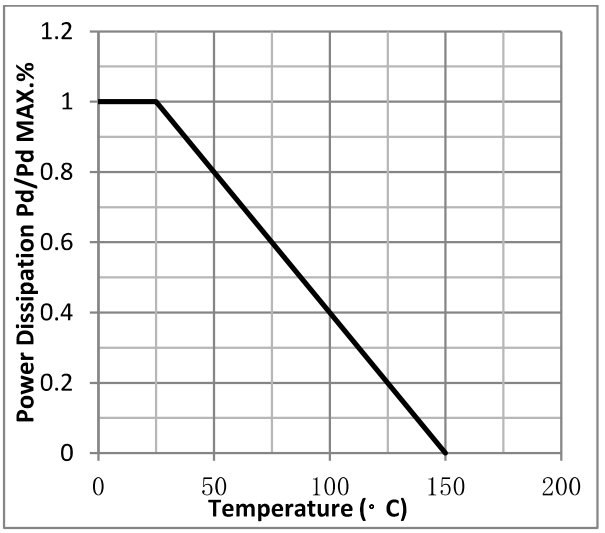


Fig.2 Typical output Characteristics

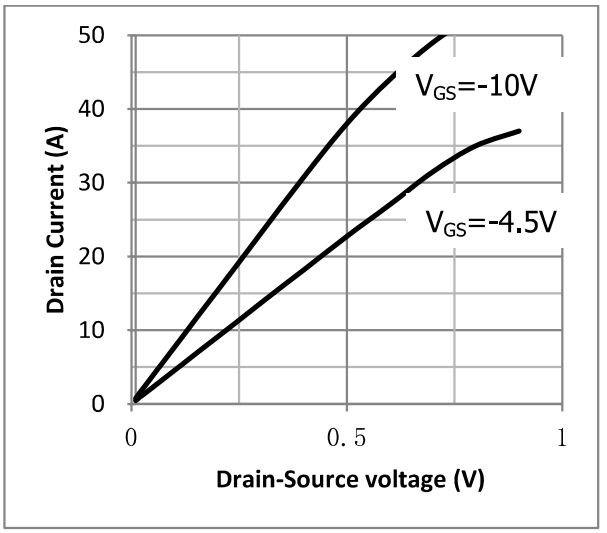


Fig.3 Threshold Voltage V.S Junction Temperature

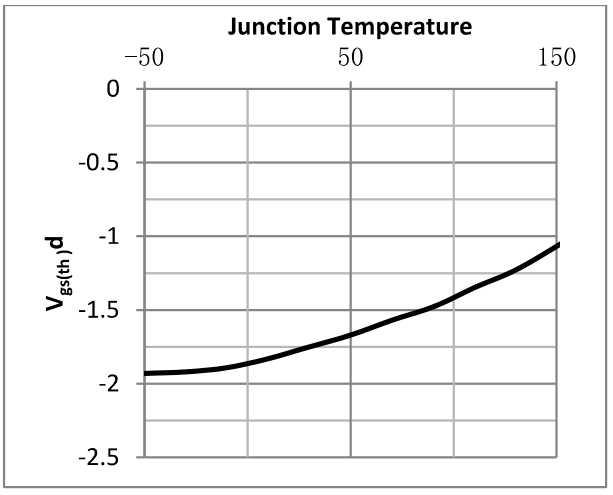


Fig.4 Resistance V.S Drain Current

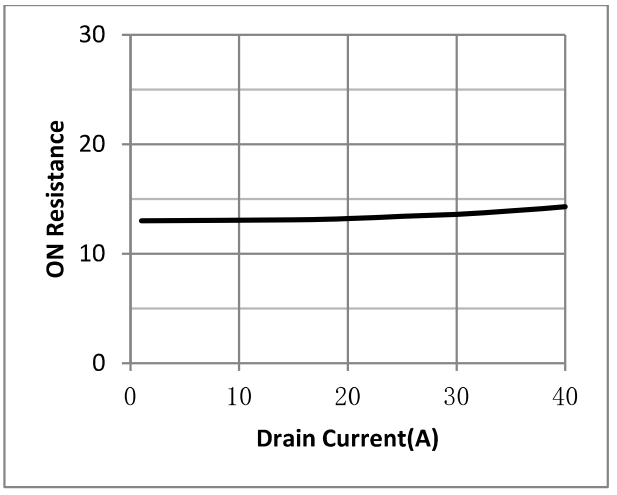


Fig.5 On-Resistance VS Gate Source Voltage

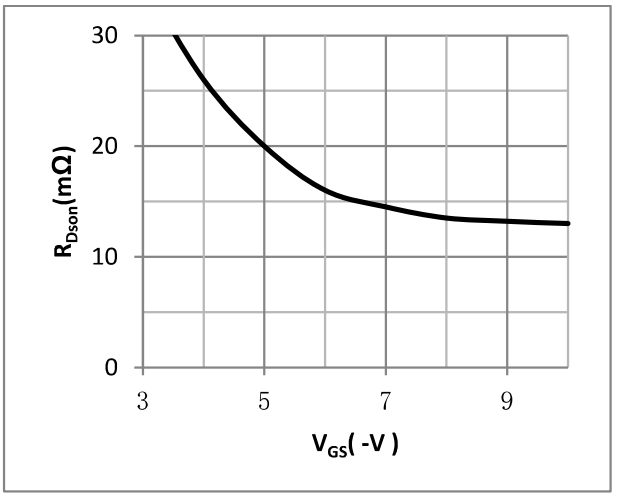


Fig.6 On-Resistance V.S Junction Temperature

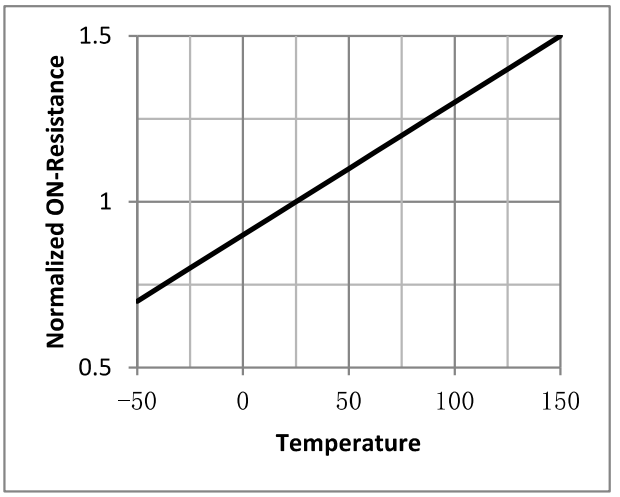


Fig.7 Switching Time Measurement Circuit

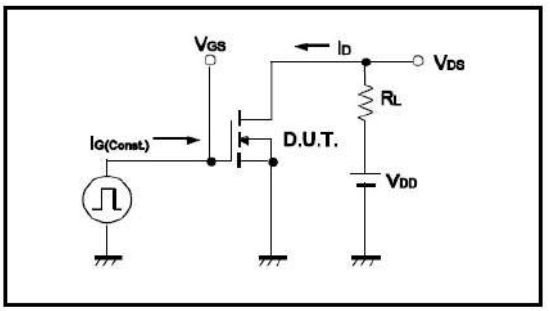


Fig.8 Gate Charge Waveform

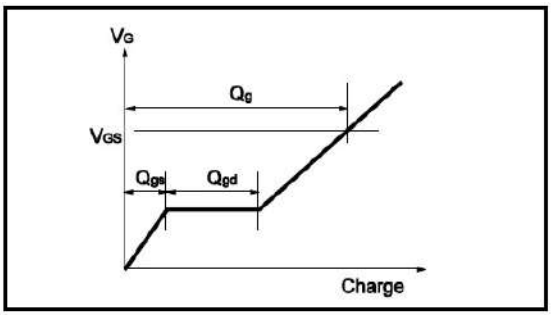


Fig.9 Switching Time Measurement Circuit

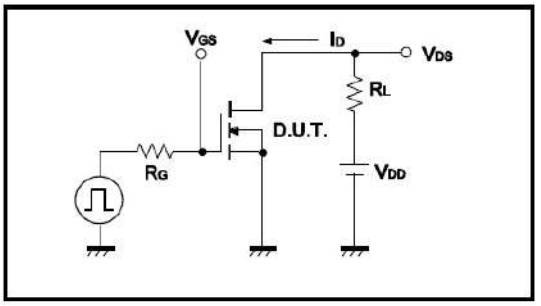


Fig.10 Gate Charge Waveform

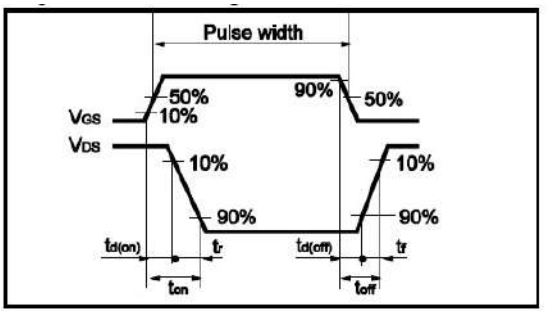


Fig.11 Avalanche Measurement Circuit

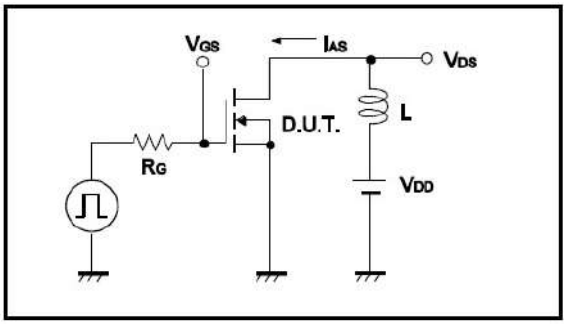
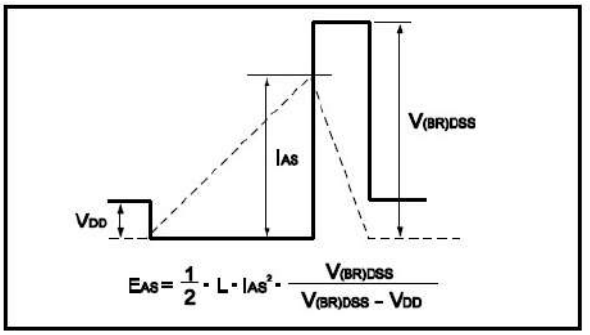
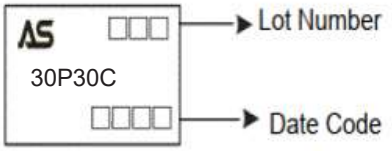


Fig.12 Avalanche Waveform

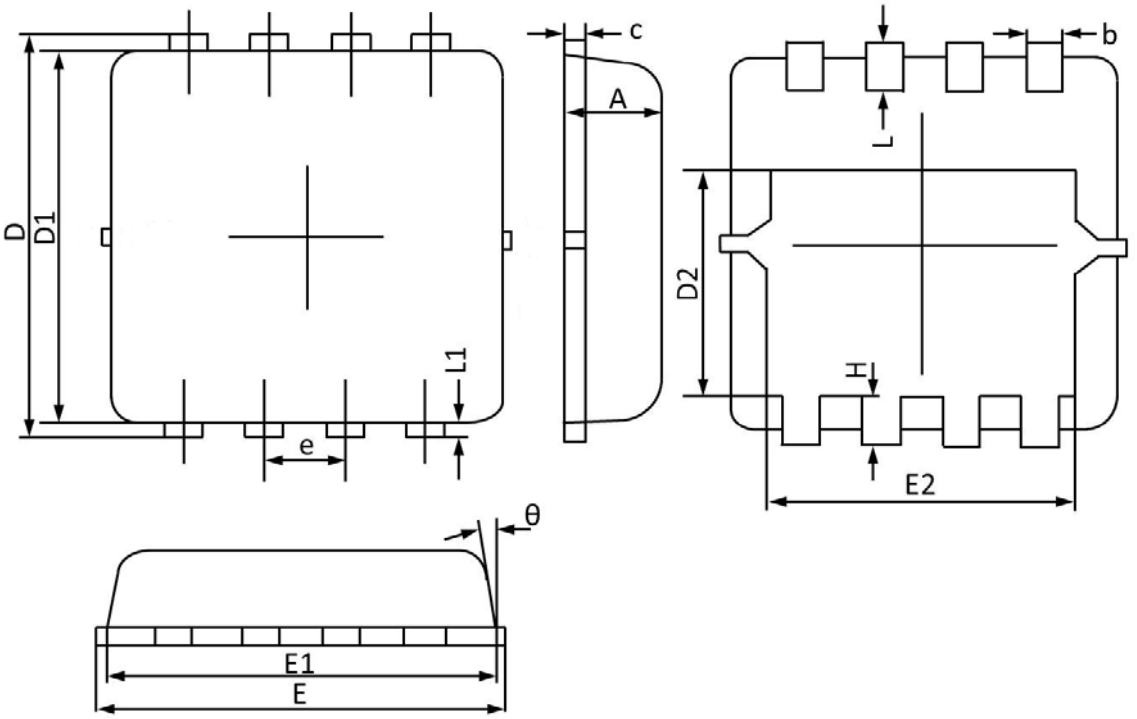


Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity
ASDM30P30CTD-R	30P30C	DFN3*3-8	Tape Reel	5000

PACKAGE	MARKING
DFN3*3-8	

DFN3x3 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	0.900	0.700	0.035	0.028
b	0.350	0.240	0.014	0.009
c	0.250	0.100	0.010	0.004
D	3.450	3.050	0.136	0.120
D1	3.200	2.900	0.126	0.114
D2	1.850	1.350	0.073	0.053
E	3.400	3.000	0.134	0.118
E1	3.250	2.900	0.128	0.114
E2	2.600	2.350	0.102	0.093
e	0.65BSC		0.026BSC	
H	0.500	0.300	0.020	0.012
L	0.500	0.300	0.020	0.012
L1	0.200	0.070	0.008	0.003
θ	12°	0°	12°	0°

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