



## Features

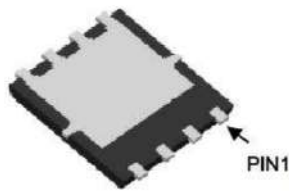
- Low RDS(ON)
- Fast switching
- Green Device Available

## Application

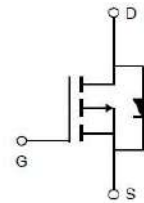
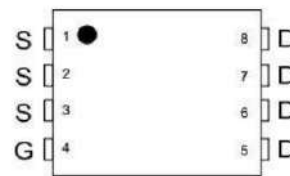
- MB / VGA / Vcore
- POL Applications

## Product Summary

V <sub>DSS</sub>	-30	V
R <sub>DS(ON)-Typ.</sub>	15	mΩ
I <sub>D</sub>	-30	A



DFN3\*3-8



P-MOSFET

## Absolute Maximum Ratings (T<sub>J</sub>=25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
V <sub>DSS</sub>	Drain-Source Voltage		-30	V
V <sub>GSS</sub>	Gate-Source Voltage		±20	
T <sub>J</sub>	Maximum Junction Temperature		150	°C
T <sub>STG</sub>	Storage Temperature Range		-55 to 150	°C
I <sub>S</sub>	Diode Continuous Forward Current		-30	A
I <sub>DM</sub> <sup>①</sup>	Pulse Drain Current Tested	T <sub>c</sub> =25°C	-60	A
I <sub>D</sub>	Continuous Drain Current	T <sub>c</sub> =25°C	-30	A
		T <sub>c</sub> =100°C	-19	
P <sub>D</sub>	Maximum Power Dissipation	T <sub>c</sub> =25°C	17	W

## Thermal Characteristics

Symbol	Parameter		Rating	Unit
R <sub>θJC</sub>	Thermal Resistance-Junction to Case	Steady State	4.6	°C/W
R <sub>θJA</sub> <sup>③</sup>	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<sup>2</sup> FR-4 board with 1oz.

**Electrical Characteristics** ( $T_J=25^\circ\text{C}$  Unless Otherwise Noted)

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

**•Electronic Characteristics**

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Input capacitance	$C_{iss}$	f = 1MHz	-	1650	-	pF
Output capacitance	$C_{oss}$		-	330	-	
Reverse transfer capacitance	$C_{rss}$		-	220	-	

**•Gate Charge characteristics**( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Condition	Min.	Typ	Max.	Unit
Total gate charge	$Q_g$	VDD =25V	-	15	-	nC
Gate - Source charge	$Q_{gs}$	ID = 8A	-	4	-	
Gate - Drain charge	$Q_{gd}$	VGS = 10V	-	6	-	

Note: ① Pulse Test : Pulse width  $\leq 300\mu s$ , Duty cycle  $\leq 2\%$  ;

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

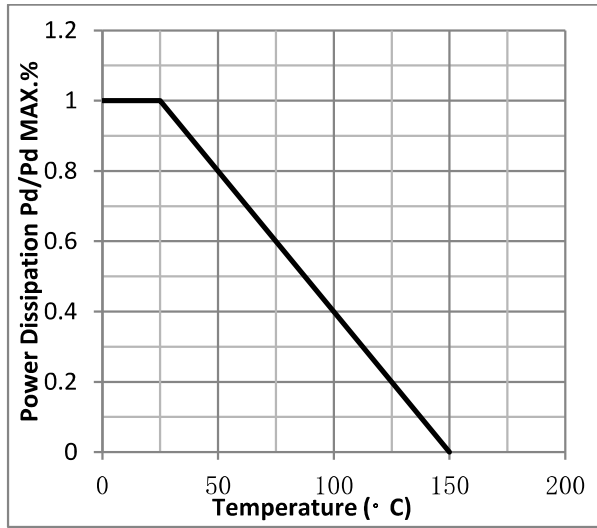


Fig.2 Typical output Characteristics

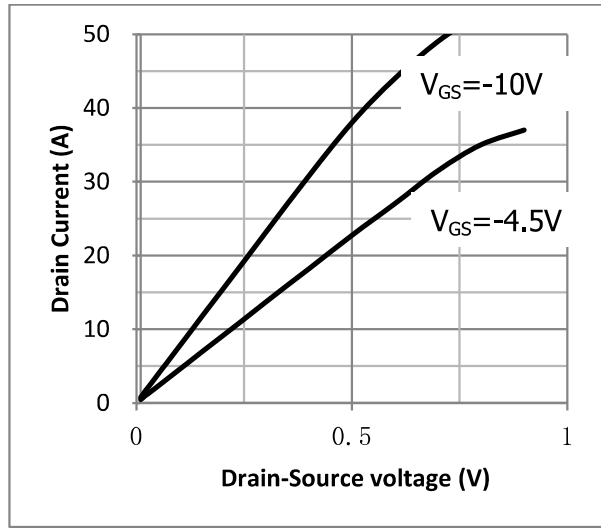


Fig.3 Threshold Voltage V.S Junction Temperature

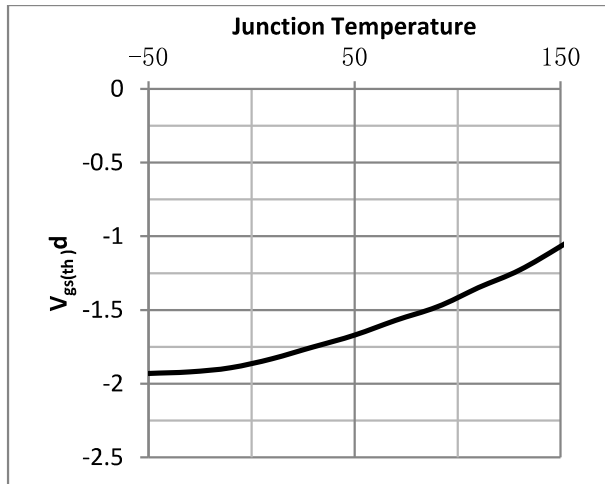


Fig.4 Resistance V.S Drain Current

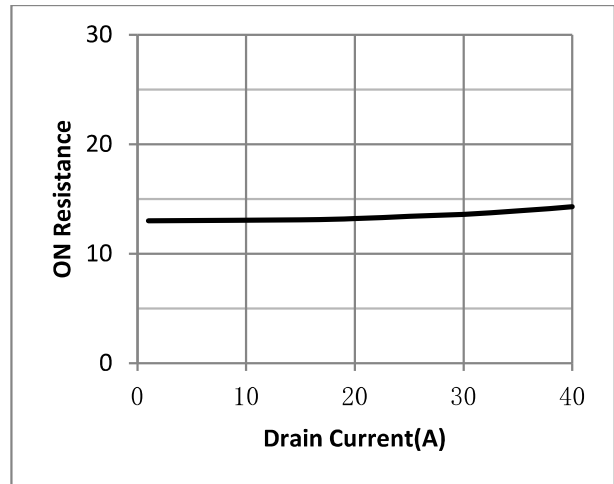


Fig.5 On-Resistance VS Gate Source Voltage

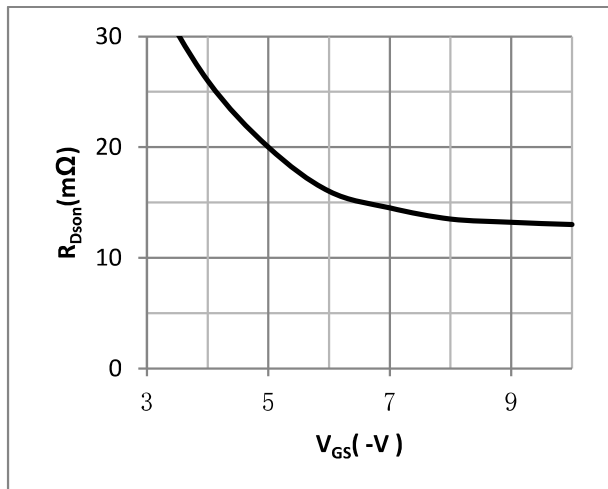


Fig.6 On-Resistance V.S Junction Temperature

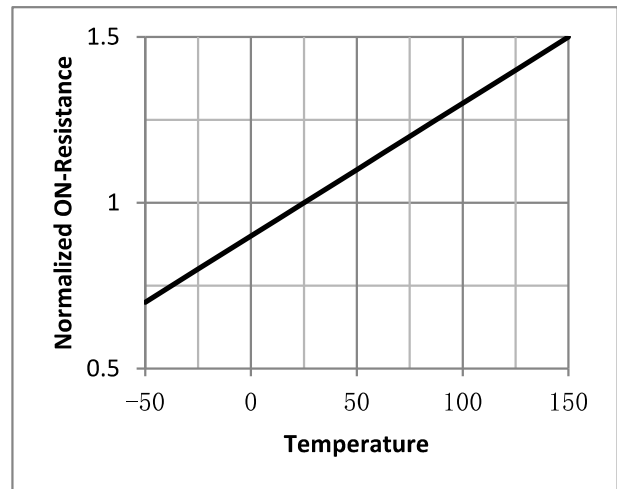




Fig.7 Switching Time Measurement Circuit

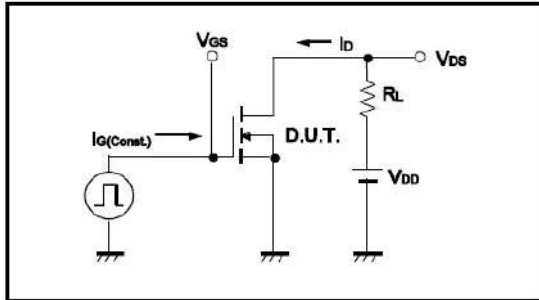


Fig.8 Gate Charge Waveform

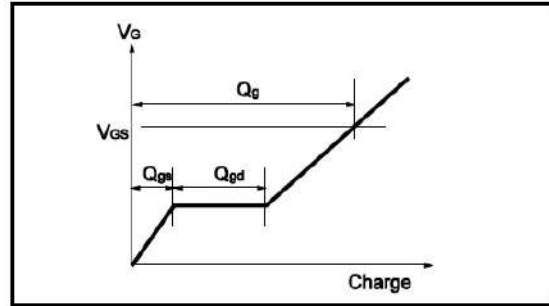


Fig.9 Switching Time Measurement Circuit

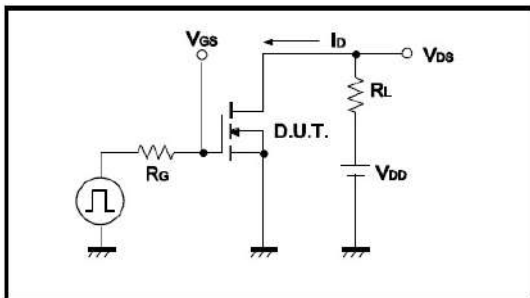


Fig.10 Gate Charge Waveform

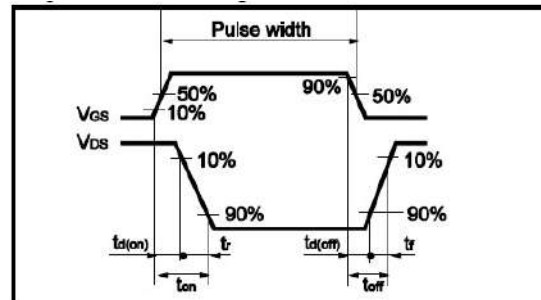


Fig.11 Avalanche Measurement Circuit

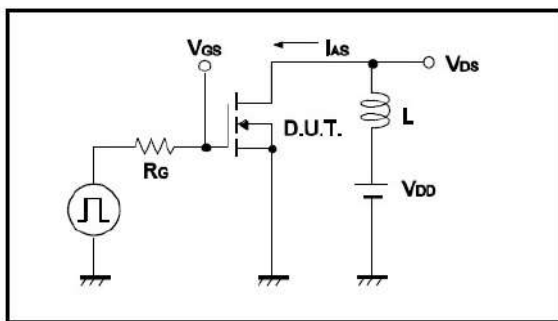
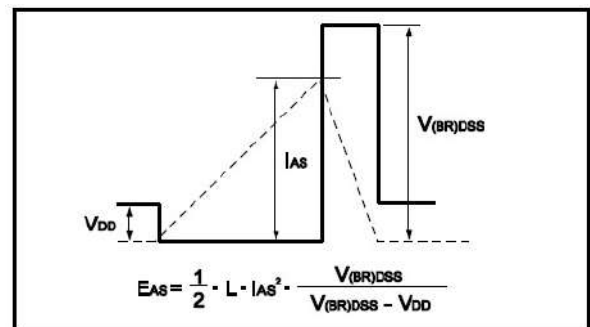
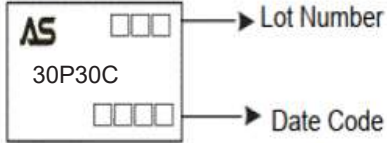


Fig.12 Avalanche Waveform



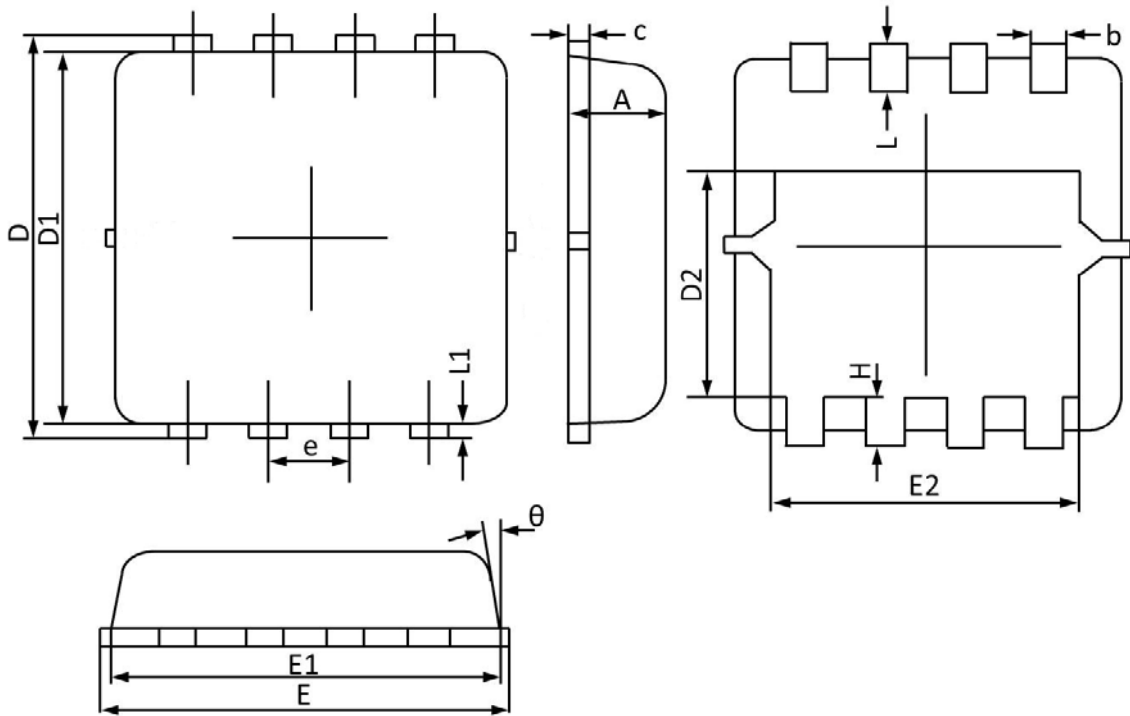
## Ordering and Marking Information

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

PACKAGE	MARKING
DFN3*3-8	 <p>The marking diagram shows a rectangular package with the following markings: 'AS' logo, '30P30C', a four-digit 'Lot Number' field, and a four-digit 'Date Code' field.</p>



### 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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