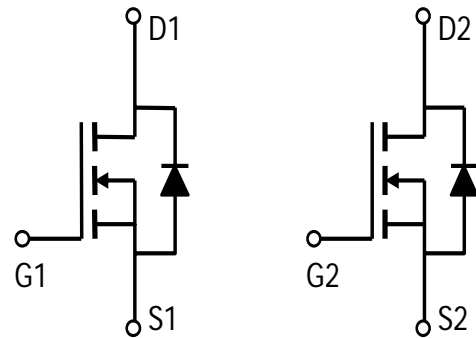# UMW®

AO4828

Dual N-Channel MOSFET

Description

The AO4828 uses advanced trench technology

 to provide excellent $R_{DS(ON)}$, low gate charge and

operation with gate voltages as low as 2.5V. This

device is suitable for use as a
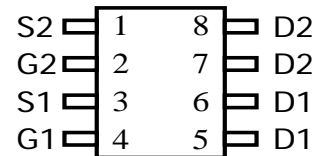
Battery protection or in other Switching application.

General Features

V_{DS} = 60V I_D = 6.5 A
$R_{DS(ON)}$ < 36mΩ @ V_{GS}=10 V
$R_{DS(ON)}$ < 47mΩ @ V_{GS}=4.5V

Application

Battery protection

Load switch

Uninterruptible power supply

S2	1	8	D2
G2	2	7	D2
S1	3	6	D1
G1	4	5	D1

Absolute Maximum Ratings@T_j=25ºC(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	$\pm$20	V
I_D@T_A=25℃	Drain Current, V_{GS} @ 4.5V[3]	6.5	A
I_D@T_A=70℃	Drain Current, V_{GS} @ 4.5V[3]	5	A
I_{DM}	Pulsed Drain Current[1]	30	A
P_D@T_A=25℃	Total Power Dissipation	2.1	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃
Rthj-a	Maximum Thermal Resistance, Junction-ambient[3]	60	℃/W

Electrical Characteristics (T_A=25℃ unless otherwise noted)

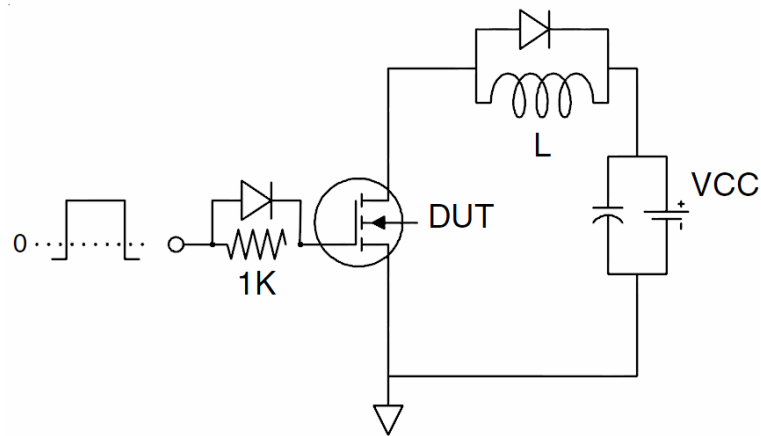| Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250µA	60	69	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V	-	-	1	µA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
On Characteristics [Note 3]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=250µA	1.0	1.5	2.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=6A		30	36	mΩ
		V_{GS}=4.5V, I_D=4A		36	47	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5V,I_D=6A		20	-	S
Dynamic Characteristics [Note4]						
Input Capacitance	C_{Iss}	V_{DS}=25V,V_{GS}=0V, F=1.0MHz		1920		PF
Output Capacitance	C_{oss}			155		PF
Reverse Transfer Capacitance	C_{rss}			116		PF
Switching Characteristics [Note 4]						
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=30V, R_L=4.7Ω V_{GS}=10V,R_{GEN}=3Ω	-	8	-	nS
Turn-on Rise Time	t_r		-	5	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	29	-	nS
Turn-Off Fall Time	t_f		-	6	-	nS
Total Gate Charge	Q_g	V_{DS}=30V,I_D=6A, V_{GS}=10V	-	50	-	nC
Gate-Source Charge	Q_{gs}		-	8	-	nC
Gate-Drain Charge	Q_{gd}		-	16	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage [Note 3]	V_{SD}	V_{GS}=0V,I_S=6A	-	-	1.2	V
Diode Forward Current [Note 2]	I_S		-	-	7	A
Reverse Recovery Time	t_{rr}	TJ = 25°C, I_F =7A	-	35	-	nS
Reverse Recovery Charge	Qrr	di/dt = 100A/µs [Note3]	-	43	-	nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production

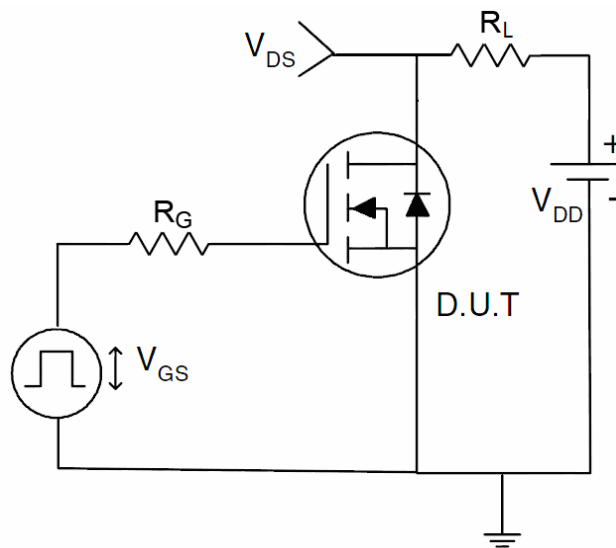## Test Circuit

1) E$_{AS}$ test Circuits

2) Gate charge test Circuit

3) Switch Time Test Circuit

Typical Electrical and Thermal Characteristics (Curves)
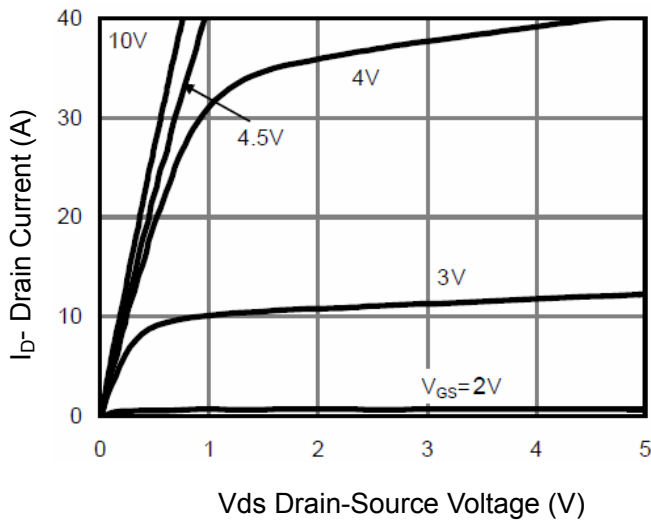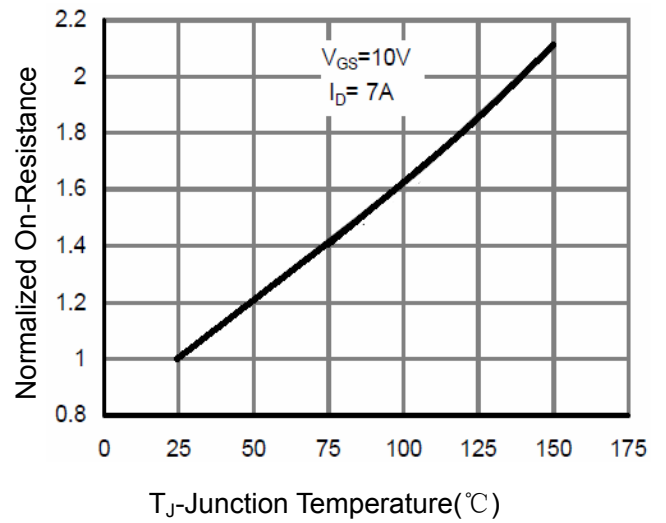

Figure 1 Output Characteristics
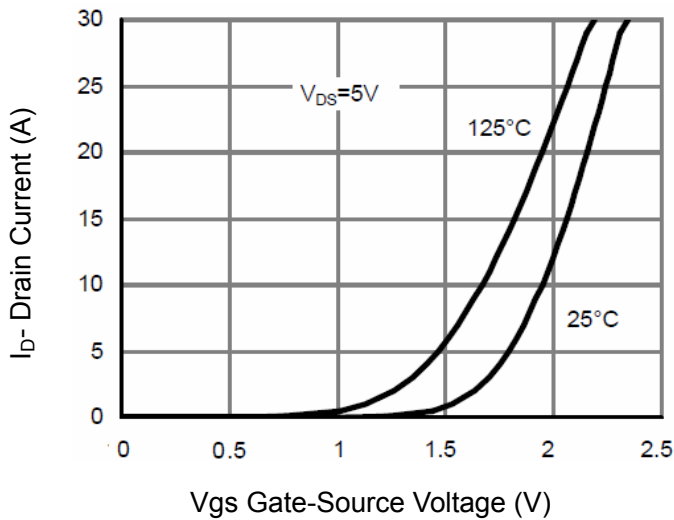

Figure 4 Rdson-JunctionTemperature

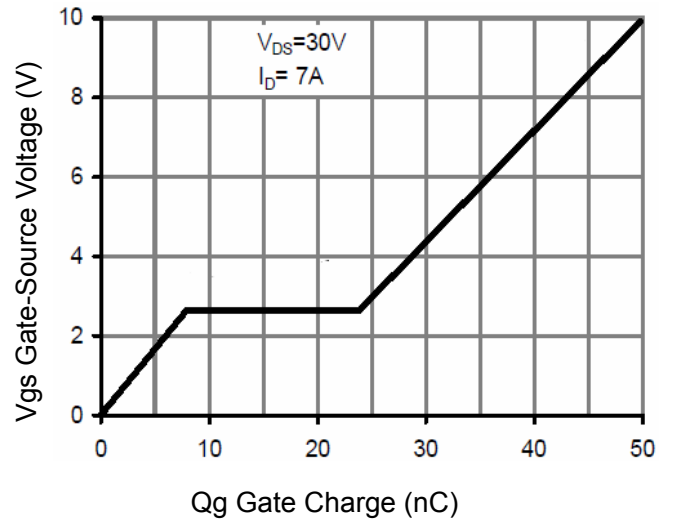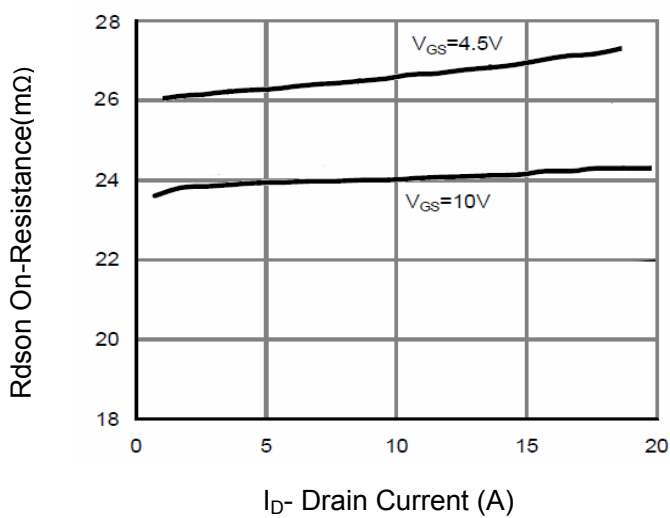**Figure 2 Transfer Characteristics**

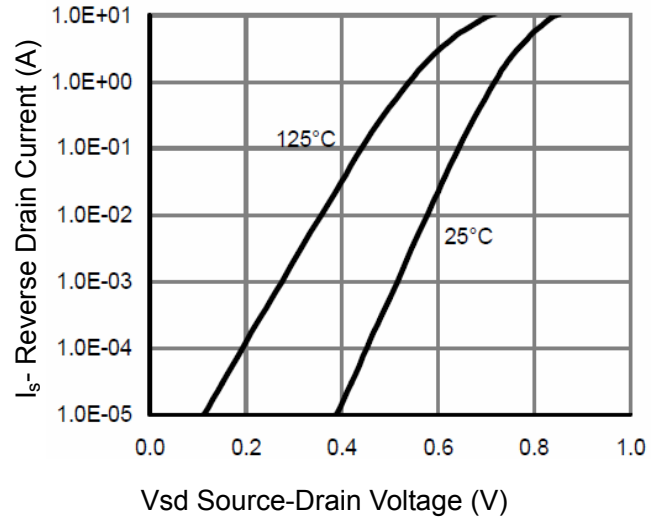**Figure 5 Gate Charge**

Figure 3 Rdson- Drain Current

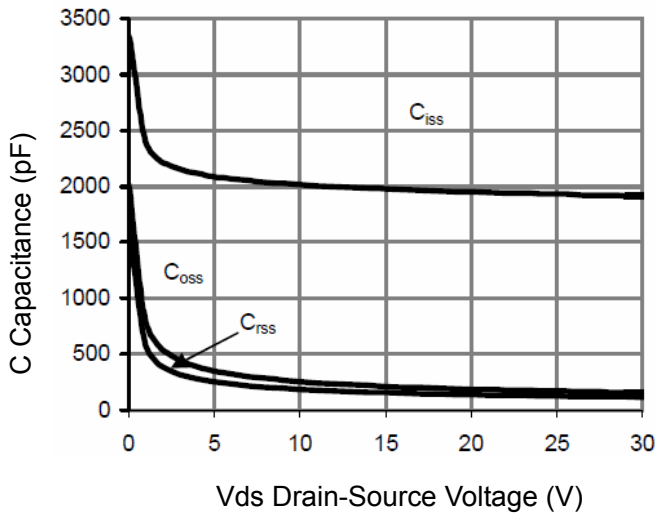**Figure 6 Source- Drain Diode Forward**

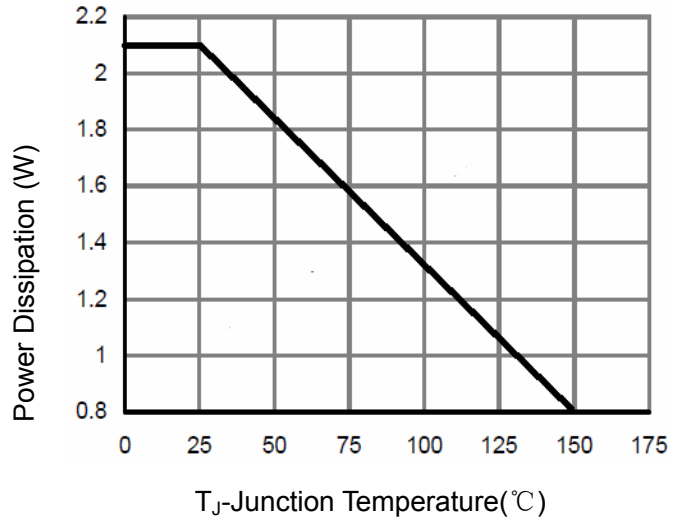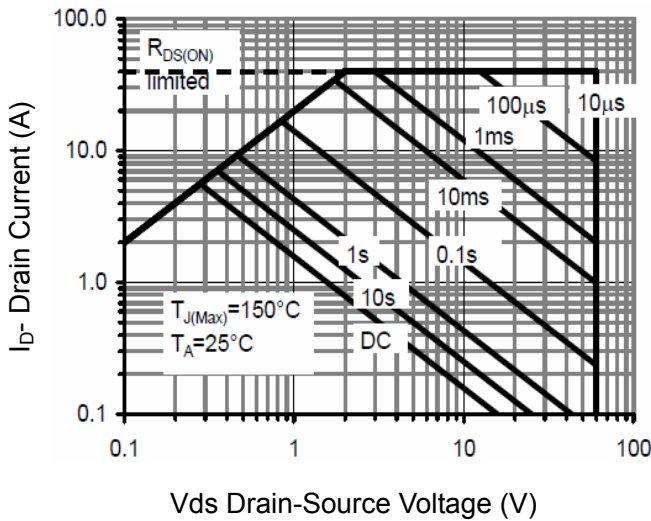Figure 7 Capacitance vs Vds

Figure 9 Power De-rating
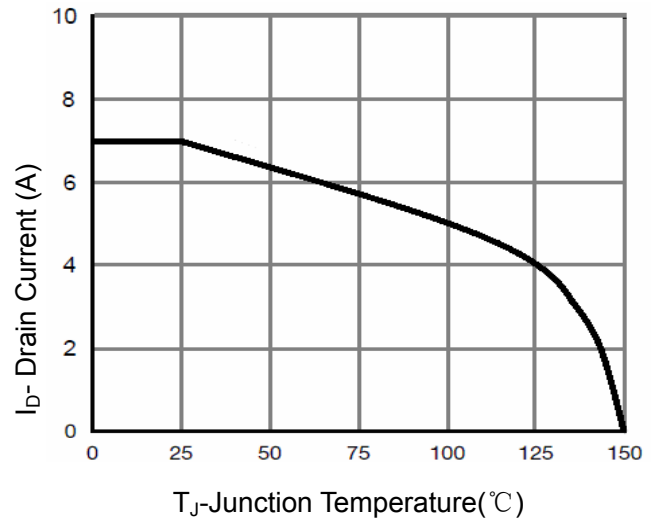

Figure 8 Safe Operation Area
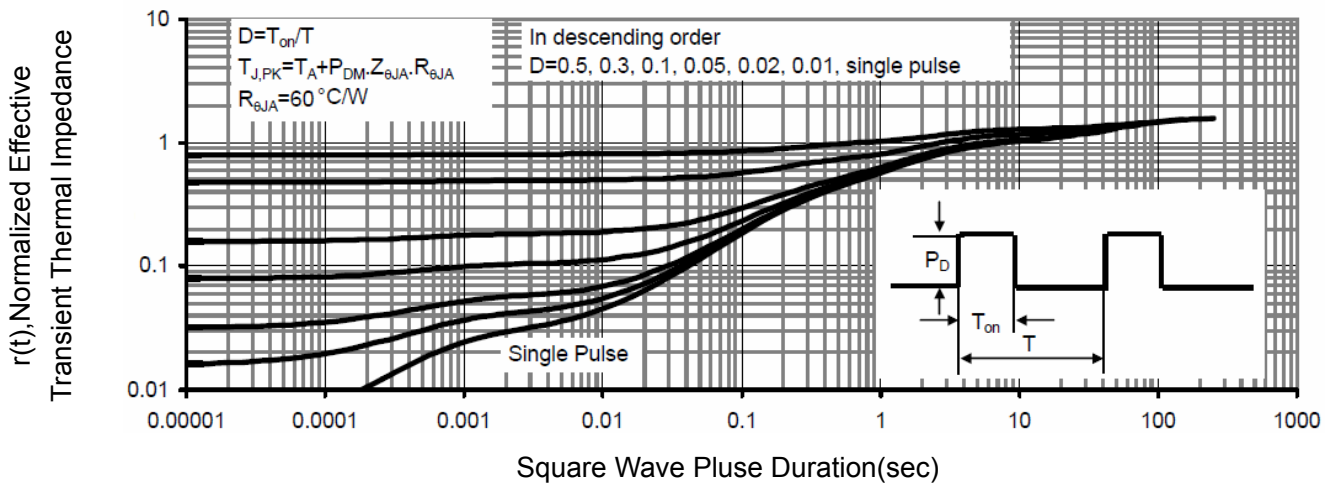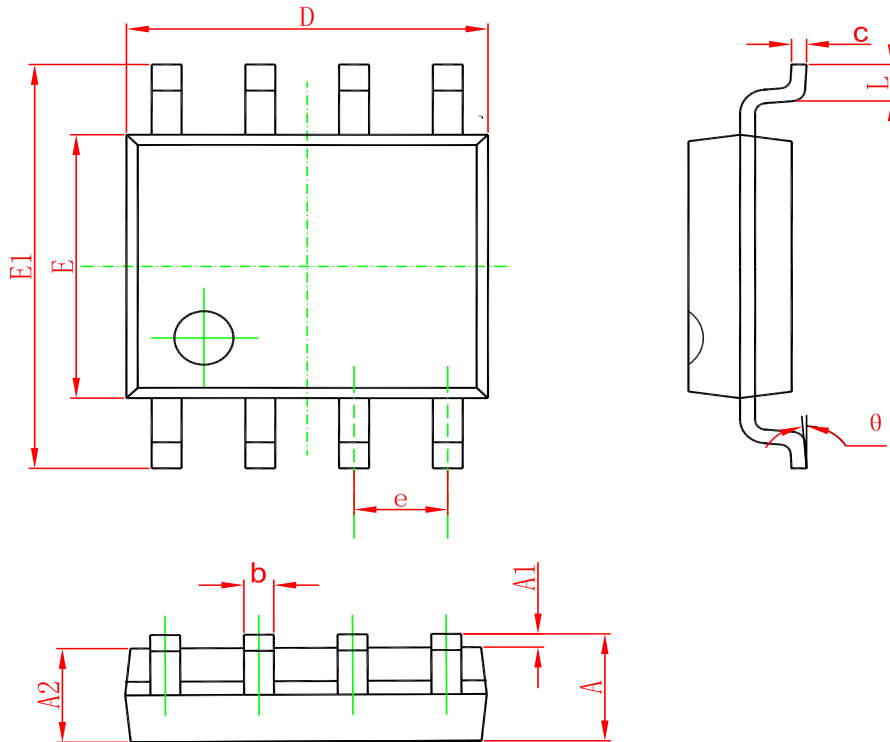

Figure 10 Current De-rating

Figure 11 Normalized Maximum Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS

SOP-8

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°

Marking

```
AO4828
UMW xxxx
```

("xxxx"代表年份周期)

Ordering information

Order code	Package	Baseqty	Deliverymode
UMW AO4828	SOP-8	3000	Tape and reel

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by Youtai *manufacturer:*

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 AOD464
2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C
IPS70R2K0CEAKMA1 BSF024N03LT3 G PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7
EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMC2700UDMQ-7
DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1
DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 IPSA70R950CEAKMA1 IPSA70R2K0CEAKMA1 STU5N65M6
 C3M0021120D DMN6022SSD-13