DESCRIPTION

The AM36P04D is available in TO-252 Package.

VDSS	RDSON	ID
-40V	10.7mΩ	-36A

APPLICATIONS

- Load Switch
- PWM Application
- Power Management

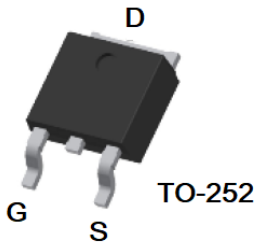
ORDERING INFORMATION

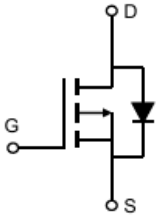
Package Type	Part Number	
TO-252 SPQ: 2,500pcs/Reel	D	AM36P04DVR
Note	R: Tape & Reel	
AiT provides all RoHS products		

FEATURE

- -40V, -36A
- $R_{DS(ON)}$ Typ.= 10.7mΩ @ V_{GS} = -10V
- $R_{DS(ON)}$ Typ.= 15.7mΩ @ V_{GS} = -4.5V
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔVds TESTED!

PIN DESCRIPTION





Pin #	Symbol	Function
1	G	Gate
2,4	D	Drain
3	S	Source

ABSOLUTE MAXIMUM RATINGS

T_J = 25°C, unless otherwise specified.

V_{DS}, Drain-to-Source Voltage		-40V
V_{GS}, Gate-to-Source Voltage		±20V
I_D, Continuous Drain Current	T_C = 25°C	-36A
	T_C = 100°C	-21.6A
I_{DM}, Pulsed Drain Current (1)		-144A
E_{AS}, Single Pulsed Avalanche Energy (2)		90mJ
P_D, Power Dissipation	T_C = 25°C	31W
$R_{\theta JC}$, Thermal Resistance, Junction-to-Case		4°C/W
T_{STG}, Storage Temperature Range		-55°C ~ +150°C
T_J, Junction Temperature Range		-55°C ~ +150°C

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
2. EAS condition: Starting TJ=25°C, VDD= -20V, VG= -10V, RG=25ohm, L=0.5mH, IAS= -19A

ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D = -250μA	-40	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= -40V, V_{GS}=0V	-	-	-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	-	-	±100	nA
On Characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}= V_{GS}, I_D = -250μA	-1.2	-1.6	-2.2	V
Static Drain-Source ON-Resistance *	$R_{DS(ON)}$	V_{GS} = -10V, I_D = -20A	-	10.7	14	mΩ
		V_{GS} = -4.5V, I_D = -10A	-	15.7	20	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}= -20V, V_{GS}=0V, f=1.0MHZ	-	1774	-	pF
Output Capacitance	C_{oss}		-	211	-	
Reverse Transfer Capacitance	C_{rss}		-	174	-	
Total Gate Charge	Q_g	V_{DS} = -20V , I_D = -10A V_{GS}=0V ~ 10V	-	33	-	nC
Gate-Source Charge	Q_{gs}		-	6	-	
Gate-Drain Charge	Q_{gd}		-	7	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}= -10V, I_D = -10A R_{GEN}=2.5Ω, V_{GS}= -10V	-	9.5	-	ns
Turn-On Rise Time	t_r		-	19.4	-	
Turn-Off Delay Time	$t_{d(off)}$		-	50	-	
Turn-Off Fall Time	t_f		-	26	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I_S	-	-	-	-36	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}	-	-	-	-144	A
Drain to Source Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S= -20A	-	-	-1.2	V
Body Diode Reverse Recovery Time	trr	I_F= -10A, di/dt = 100A/μs	-	30	-	ns
Body Diode Reverse Recovery Charge	Qrr		-	38	-	nC

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Gate Charge Test Circuit

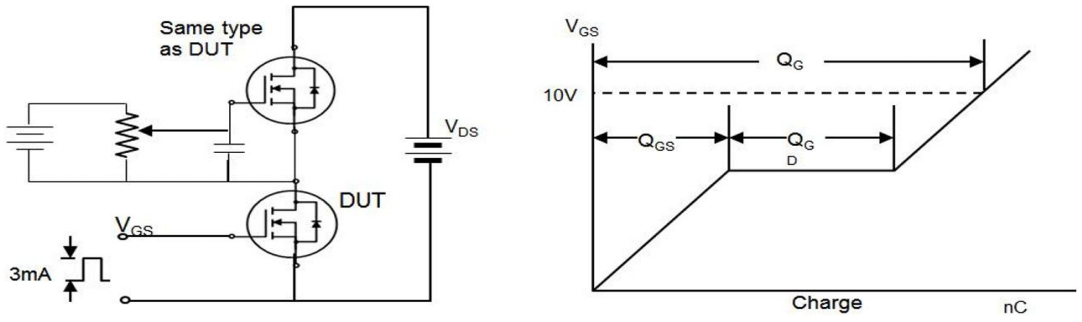


Fig 2. Resistive Switching Test Circuit & Waveform

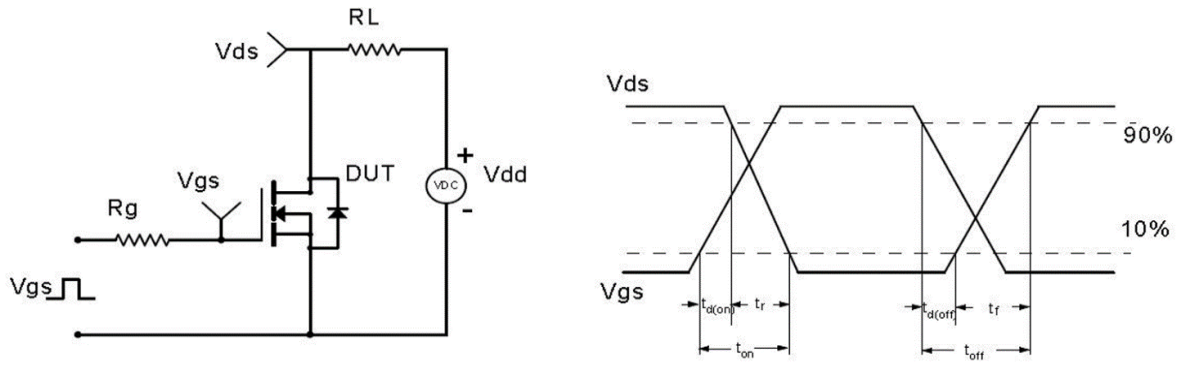


Fig 3. Unclamped Inductive Switching Test Circuit& Waveform

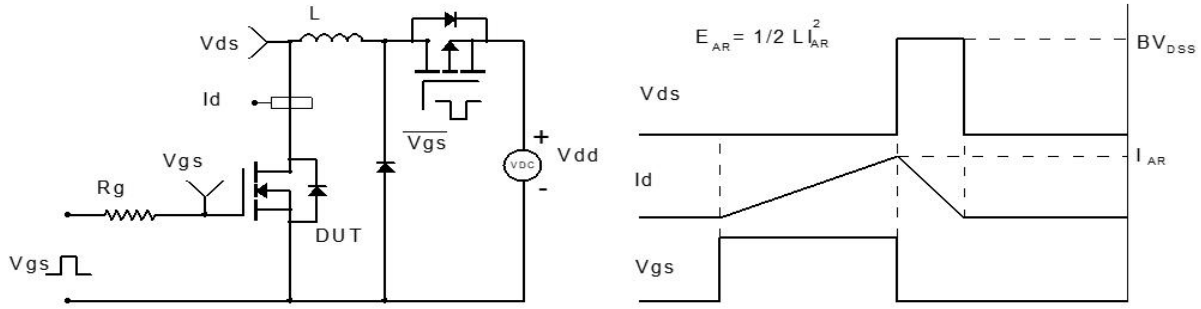
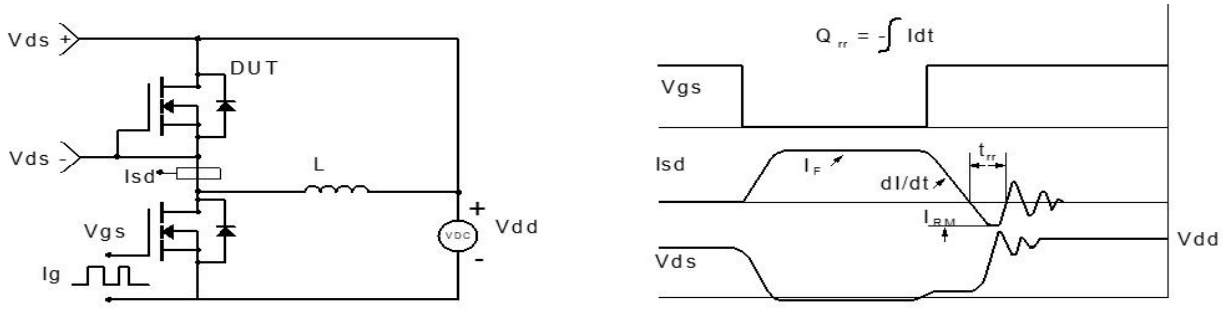
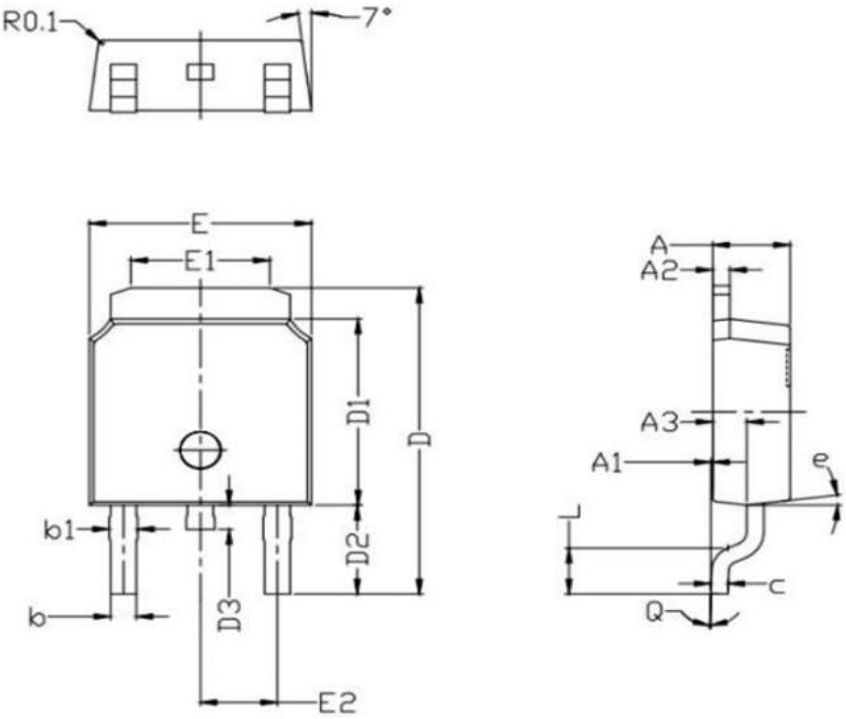


Fig 4. Diode Recovery Test Circuit & Waveform



PACKAGE INFORMATION

Dimension in TO-252 (Unit: mm)



Symbol	Millimeters	
	Min.	Max.
A	2.250	2.400
A1	0.010	0.150
A2	0.500	0.550
A3	0.960	1.060
b	0.740	0.800
b1	0.880	0.950
c	0.500	0.550
D	9.800	10.350
D1	6.050	6.180
D2	2.850	2.950
D3	0.700	2.900
E	6.550	6.700
E1	4.050	4.200
E2	2.250	2.300
L	1.400	1.600
e	7.000	
Q	0°	5°

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