

**DESCRIPTION**

The AM55N06D is available in TO-252 Package.

VDSS	RDS(ON)	ID
60V	9mΩ	55A

APPLICATIONS

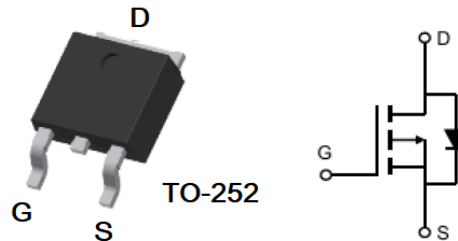
- Load Switch
- PWM Application
- Power Management

ORDERING INFORMATION

Package Type	Part Number	
TO-252 SPQ: 2,500pcs/Reel	D	AM55N06DR
Note	R: Tape & Reel	
AiT provides all RoHS products		

FEATURE

- 60V, 55A
- $R_{DS(ON)}$ Typ.= 9mΩ @ $V_{GS} = 10V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS TESTED!
- 100% ΔV_{ds} TESTED!

PIN DESCRIPTION

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

ABSOLUTE MAXIMUM RATINGS

$T_J = 25^\circ C$, unless otherwise specified.

V_{DS} , Drain-to-Source Voltage		60V
V_{GS} , Gate-to-Source Voltage		$\pm 20V$
I_D , Continuous Drain Current	$T_C = 25^\circ C$	55A
	$T_C = 100^\circ C$	36A
I_{DM} , Pulsed Drain Current ⁽¹⁾		220A
E_{AS} , Single Pulsed Avalanche Energy ⁽²⁾		100mJ
P_D , Power Dissipation	$T_C = 25^\circ C$	83W
$R_{\theta JC}$, Thermal Resistance, Junction-to-Case		1.5°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 $T_J = 25^\circ C$, $V_{DD} = -30V$, $V_G = -10V$, $R_G = 25\Omega$, $L = 0.5mH$, $I_{AS} = -20A$

**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	60	-	-	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						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = 250μA	2.2	3	3.8	V
Static Drain-Source ON-Resistance *	R _{DS(ON)}	V _{GS} = -10V, I _D =20A	-	9	11.7	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 25V, V _{GS} =0V, f=1.0MHZ	-	2327	-	pF
Output Capacitance	C _{oss}		-	160	-	
Reverse Transfer Capacitance	C _{rss}		-	139	-	
Total Gate Charge	Q _g	V _{DS} = 30V , I _D = 20A V _{GS} =0V ~ -10V	-	44	-	nC
Gate-Source Charge	Q _{gs}		-	12	-	
Gate-Drain Charge	Q _{gd}		-	15	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30V, I _D = 20A R _{GEN} =3Ω, V _{GS} = 10V	-	14	-	ns
Turn-On Rise Time	t _r		-	73	-	
Turn-Off Delay Time	t _{d(off)}		-	33	-	
Turn-Off Fall Time	t _f		-	59	-	
Drain-Source Diode Characteristics and Max Ratings						
Maximum Continuous Drain to Source Diode Forward Current	I _S	-	-	-	55	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}	-	-	-	220	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S = 30A	-	-	1.2	V
Body Diode Reverse Recovery Time	trr	I _F = 20A,	-	23	-	ns
Body Diode Reverse Recovery Charge	Qrr	di/dt = 100A/μs	-	28	-	nC

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



Fig 1. Gate Charge Test Circuit

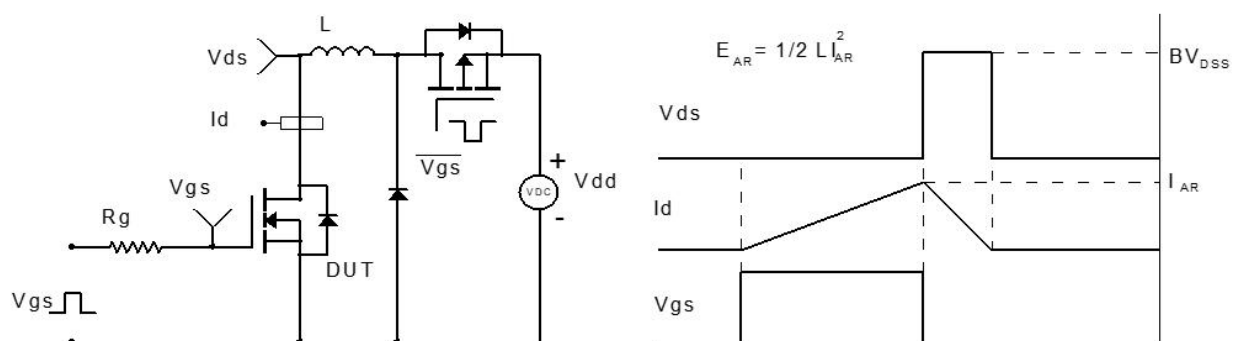
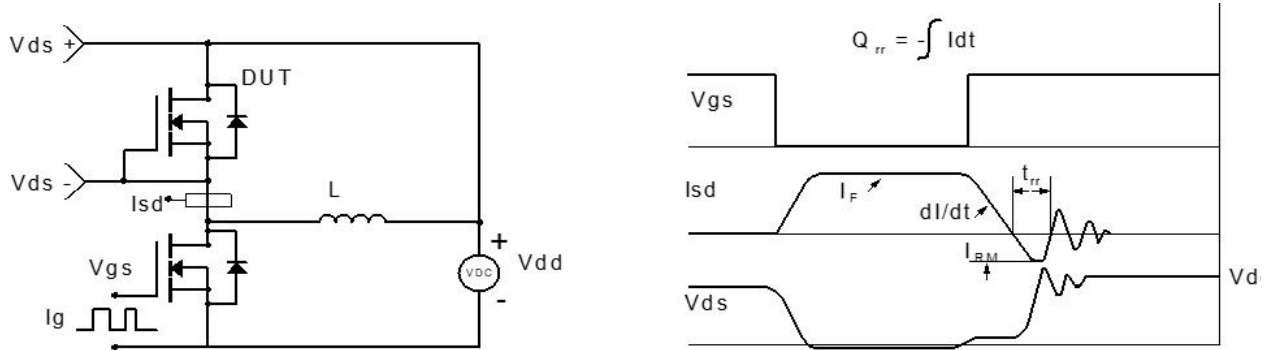


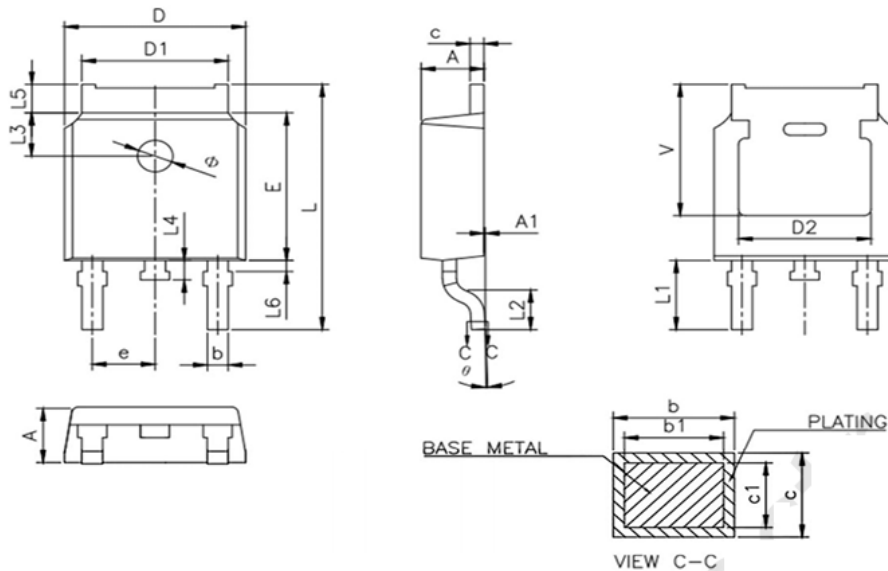


Fig 4. Diode Recovery Test Circuit & Waveform



**PACKAGE INFORMATION**

Dimension in TO-252 (Unit: mm)



Symbol	Millimeters	
	Min.	Max.
A	2.200	2.400
A1	0.000	0.127
b	0.660	0.860
b1	0.650	0.810
c	0.470	0.600
c1	0.460	0.560
D	6.500	6.700
D1	5.100	5.460
D2	4.830 REF.	
E	6.000	6.200
e	2.186	2.386-
L	9.800	10.400
L1	2.900 REF.	
L2	1.400	1.600
L3	1.800 REF.	
L4	0.600	1.000
L5	0.900	1.250
L6	0.150	0.750
ϕ	1.100	1.300
V	5.400 REF.	
θ	0°	8°

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