DESCRIPTION

The AM35P10 is available in TO-252 package.

BVDSS	RDSON		ID
	V_{GS}=-10V	V_{GS}=-4.5V	
-100V	50mΩ	55mΩ	-35A

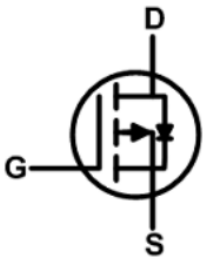
FEATURE

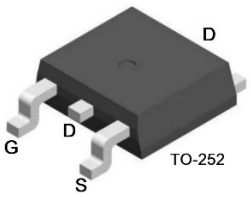
- Improved dv/dt capability
- Low Input Capacitance
- 100% EAS Guaranteed
- Green Device Available

APPLICATION

- Net Working
- Load Switch
- LED Application
- Quick Charge

PIN DESCRIPTION





ORDERING INFORMATION

Package Type	Part Number	
TO-252 SPQ: 2500pcs/Tube	D	AM35P10DR
		AM35P10DVR
Note	U: Tube V: Halogen free Package	
AiT provides all RoHS products		

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

ABSOLUTE MAXIMUM RATINGS

T_A=25℃, unless otherwise noted

V_{DSS}, Drain-Source Voltage		-100V
V_{GSS}, Gate-Source Voltage		±20V
I_D, Drain Current-Continuous(1)	T_A=25℃	-35A
	T_A =100℃	-23A
I_{DM}, Drain Current-Pulsed(2)		-100A
I_{AS}, Single Pulse Avalanche Current		28A
E_{AS}, Single Pulse Avalanche Energy(3)		392mJ
P_D, Maximum Power Dissipation(4)		104W
T_{STG}, Storage Temperature Range		-55℃~+150℃
T_J, Operating Junction Temperature Range		-55℃~+150℃
$R_{\theta JA}$, Maximum Junction-to-Ambient	62	℃/W
$R_{\theta JC}$, Maximum Junction-to-Case	1.2	

The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

(1) The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.

(2) The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

(3) The EAS data shows Max. Rating. The test condition is V_{DD}=-25V, V_{GS}=-10V, L=1mH, I_{AS}=-28A

(4) The power dissipation is limited by 150℃ junction temperature

ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=-250μA	-100	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}= -100V, V_{GS}=0V, T_A=125℃	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS} =±20V, V_{DS}= 0V	-	-	±100	nA
ON Characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS}=V_{DS}, I_{DS}=-250uA	-1.2	-1.8	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_{DS}=-10A	-	44	50	mΩ
		V_{GS}=-4.5V, I_{DS}=-8A	-	48	55	
Forward Transconductance	gfs	V_{DS}=-10V, I_D=-10A	-	32	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-20V, V_{GS}=0V, f=1MHz	-	6500	-	pF
Output Capacitance	C_{oss}		-	225	-	
Reverse Transfer Capacitance	C_{rss}		-	130	-	
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	V_{DS}=-50V, I_D=-14A, R_{GEM}=3.3Ω, V_{GS}=-10V	-	21	-	ns
Rise Time	t_r		-	32	-	
Turn-Off Delay Time	$T_{d(off)}$		-	125	-	
Fall Time	t_f		-	64.2	-	
Total Gate Charge	Q_g	V_{DS}=-80V, I_{DS}=-14A, V_{GS}=-10V	-	90	-	nC
Gate to Source Charge	Q_{gs}		-	18.2	-	
Gate to Drain “Miller” Charge	Q_{gd}		-	14.5	-	
Switching Characteristics						
Drain-Source Diode Forward Voltage(2)	V_{SD}	V_{GS}=0A, I_S=-1A	-	-	-1.2	V
Continuous Source Current(1)(3)	I_S	V_G=V_D=0V, Force Current	-	-	-35	A
Pulsed Source Current(1)(3)	I_{SM}		-	-	-90	A

(1) The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.

(2) The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%

(3) The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation

TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Typical Output Characteristics

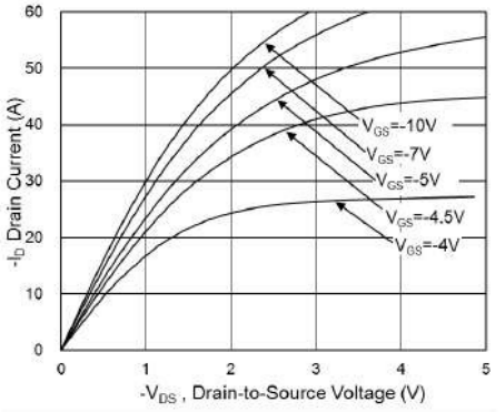


Fig 2. On-Resistance vs. G-S Voltage

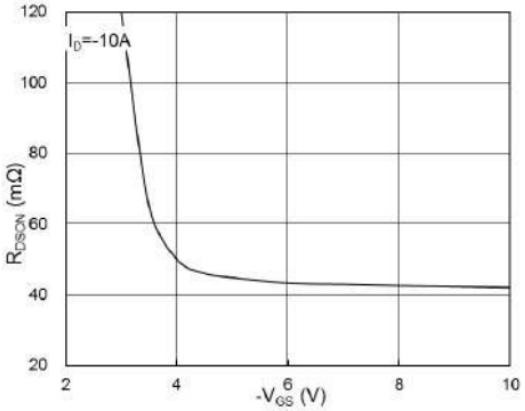


Fig 3. Typical S-D Diode Forward Voltage

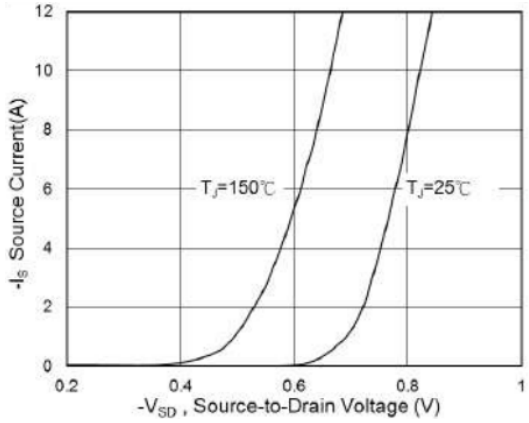


Fig 4. Gate-Charge Characteristics

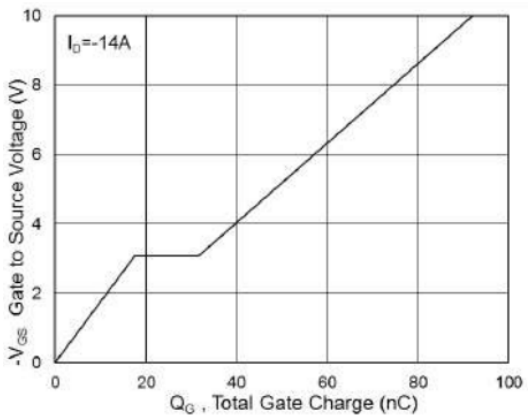


Fig 5.Normalized $V_{GS(th)}$ vs.T_J

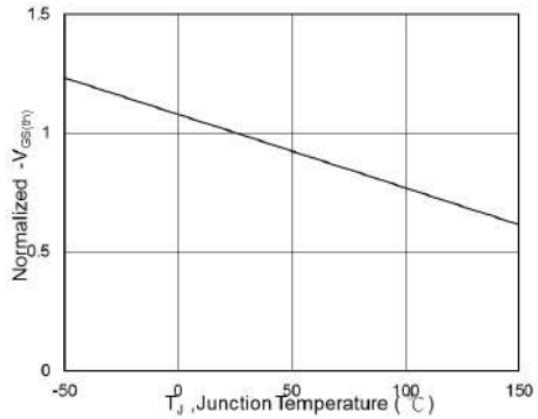


Fig 6. Normalized R_{DSON} vs. T_J

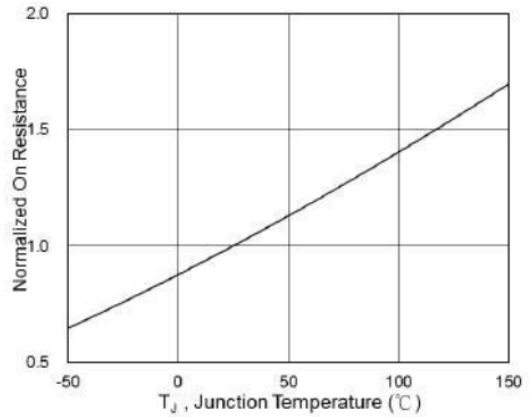


Fig 7. Capacitance

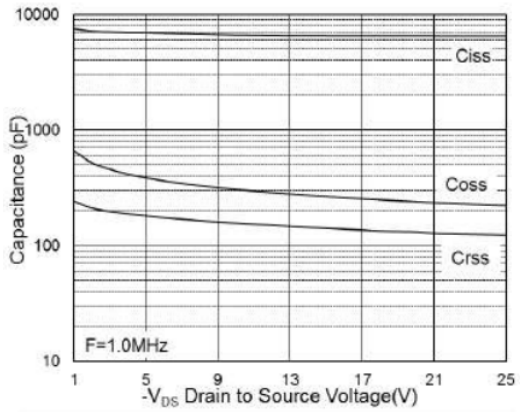


Fig 8. Safe Operating Area

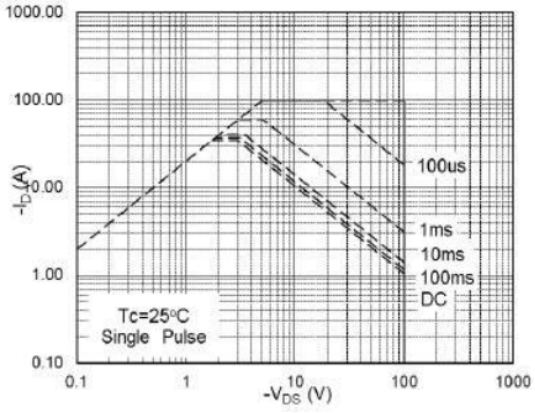


Fig 9.Normalized Maximum Transient Thermal Impedance

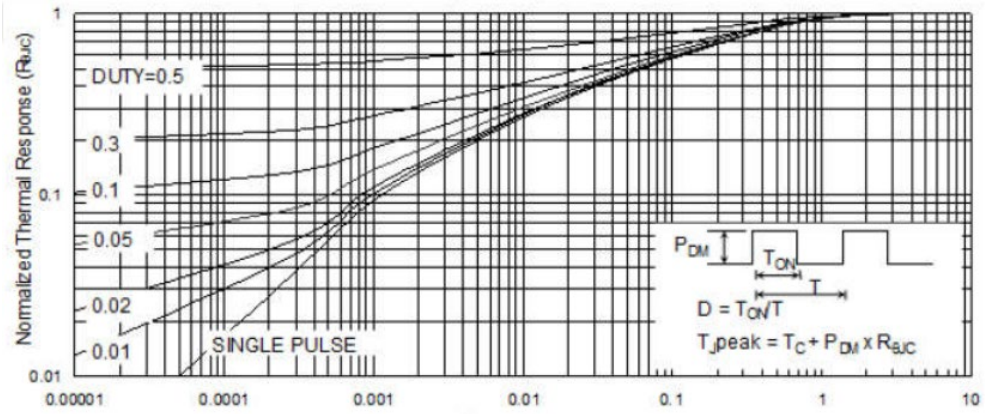


Fig 10.Switching Time Waveform

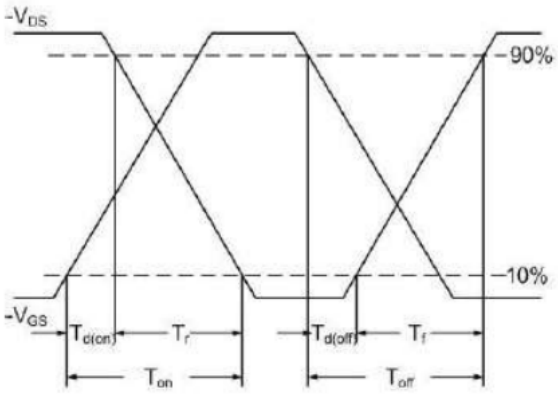
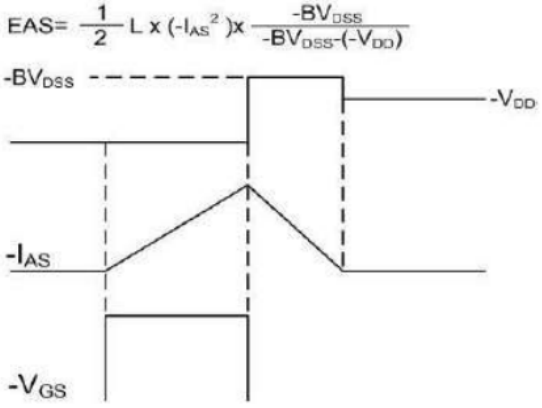
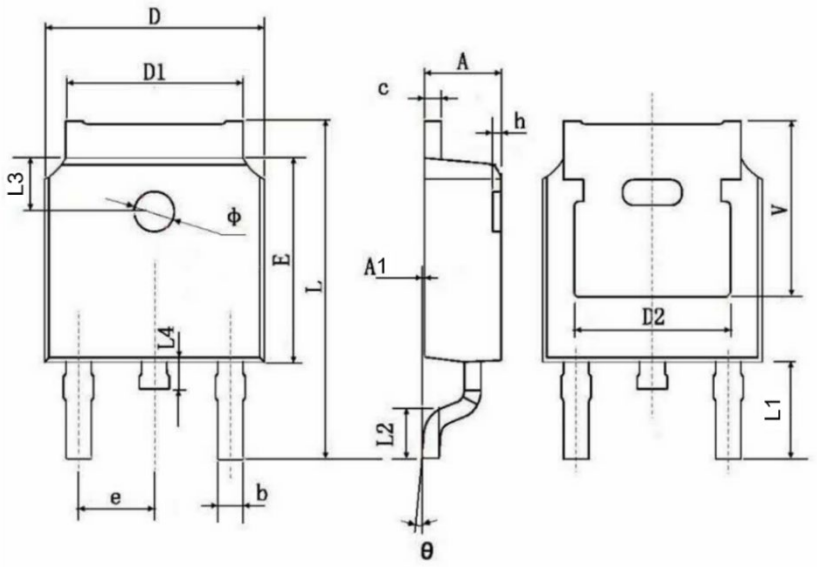


Fig 11.Unclamped Inductive Waveform



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
c	0.460	0.580
D	6.500	6.700
D1	5.100	5.460
D2	0.486TYP	
E	6.000	6.200
e	2.186	2.386
L	9.800	10.400
L1	2.900TYP	
L2	1.400	1.700
L3	1.600TYP	
L4	0.600	1.000
Φ	1.100	1.300
θ	0	8
h	0.000	0.300
V	5.350TYP	

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