



DESCRIPTION

AM2210 is available in a TO-252 package.

ORDERING INFORMATION

Package Type	Part Number	
TO-252 SPQ: 2,500pcs/Reel	D	AM2210DR
		AM2210DVR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

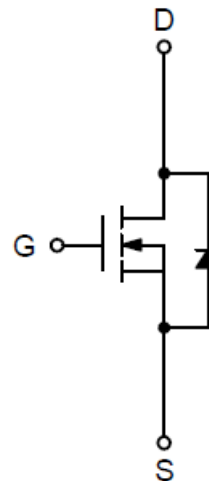
FEATURES

- 200V/25A,
 $R_{DS(ON)} = 70m\Omega(\text{max.}) @ V_{GS} = 10V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Available in a TO-252 package.

APPLICATION

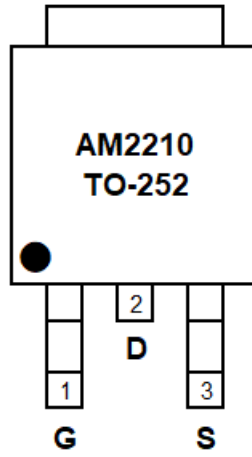
- Power Management in TV Converter.
- DC-DC Converter.

PIN DESCRIPTION





PIN DESCRIPTION



Top View

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



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise noted

V _{DSS} , Drain-Source Voltage		200V
V _{GSS} , Gate-Source Voltage		±25V
T _J , Maximum Junction Temperature		150°C
T _{STG} , Storage Temperature Range		-55°C~+150°C
I _S , Diode Continuous Forward Current	T _C =25°C	12A
I _D , Continuous Drain Current	T _C =25°C	25A
	T _C =100°C	16A
I _{DM} , Pulsed Drain Current ^{NOTE1}	T _C =25°C	75A
P _D , Maximum Power Dissipation	T _C =25°C	113W
	T _C =100°C	45W
R _{θJC} , Thermal Resistance-Junction to Case		1.1°C/W
I _D , Continuous Drain Current	T _A =25°C	3.7A
	T _A =70°C	3A
P _D , Maximum Power Dissipation	T _A =25°C	2.5W
	T _A =70°C	1.6W
R _{θJA} , Thermal Resistance-Junction to Ambient ^{NOTE3}		50°C/W
I _{AS} , Avalanche Current, Single pulse ^{NOTE2}	L=0.5mH	6.5A
E _{AS} , Avalanche Energy, Single pulse ^{NOTE2}	L=0.5mH	10mJ

Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: Pulse width limited by max. junction temperature.

NOTE2: UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature T_J=25°C).

NOTE3: Surface Mounted on 1in² pad area.



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	200	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =160V, V _{GS} =0V	-	-	1	μA
		T _J = 85°C	-	-	30	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	3	4	V
Gate Leakage Current	I _{GSS}	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
Drain-Source On-state Resistance ^{NOTE4}	R _{DS(ON)}	V _{GS} = 10V, I _D =12A	-	58	70	mΩ
Diode Characteristics						
Diode Forward Voltage ^{NOTE4}	V _{SD}	I _{SD} =6A, V _{GS} =0V	-	0.8	1.3	V
Reverse Recovery Time	t _{rr}	I _{SD} =12A,	-	75	-	ns
Reverse Recovery Charge	Q _{rr}	dI _{SD} /dt=100A/μs	-	250	-	nC
Dynamic Characteristics^{NOTE5}						
Gate Resistance	R _G	V _{GS} =0V, V _{DS} =0V, f=1MHz	-	1.0	-	Ω
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =30V, Frequency=1.0MHz	-	2350	3100	pF
Output Capacitance	C _{oss}		-	155	-	
Reverse Transfer Capacitance	C _{rss}		-	45	-	
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, R _L =30Ω, I _{DS} =1A, V _{GEN} =10V, R _G =6Ω	-	16	29	ns
Turn-on Rise Time	t _r		-	7	13	
Turn-off Delay Time	t _{d(off)}		-	37	67	
Turn-off Fall Time	t _f		-	15	28	
Gate Charge Characteristics^{NOTE5}						
Total Gate Charge	Q _g	V _{DS} =100V, V _{GS} =10V, I _{DS} =12A	-	40	56	nC
Gate-Source Charge	Q _{gs}		-	14	-	
Gate-Drain Charge	Q _{gd}		-	10	-	

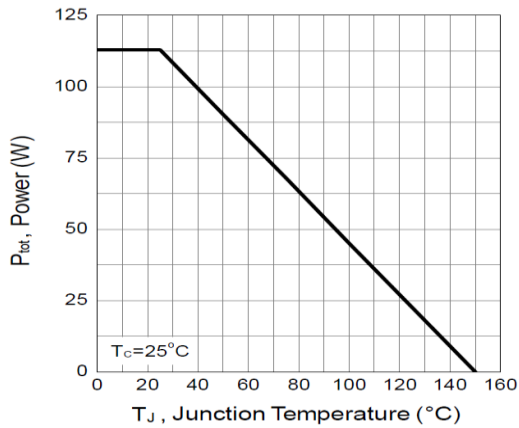
NOTE4: Pulse test ; pulse width≤300μs, duty cycle≤2%.

NOTE5: Guaranteed by design, not subject to production testing.

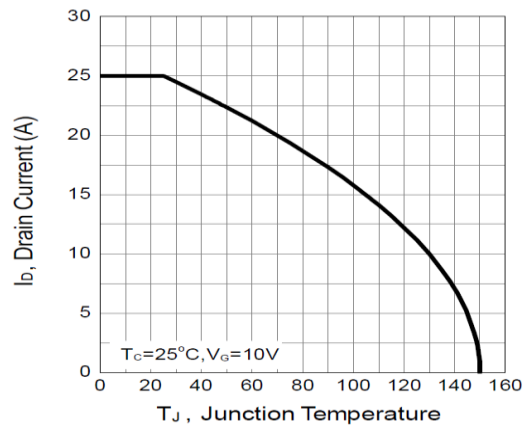


TYPICAL CHARACTERISTICS

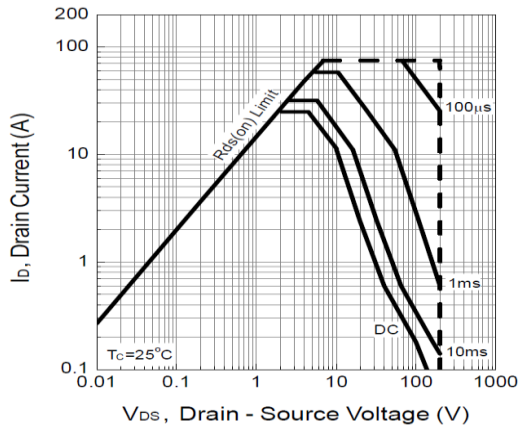
1. Power Dissipation



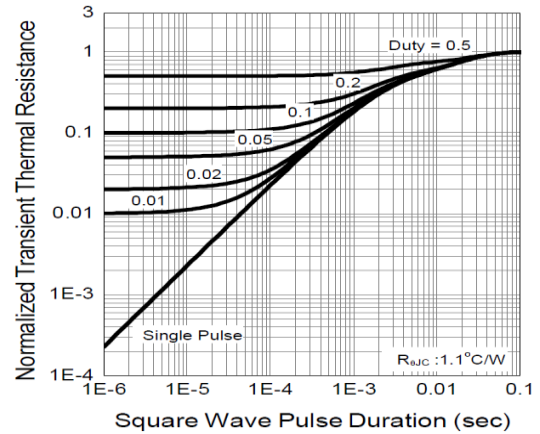
2. Drain Current



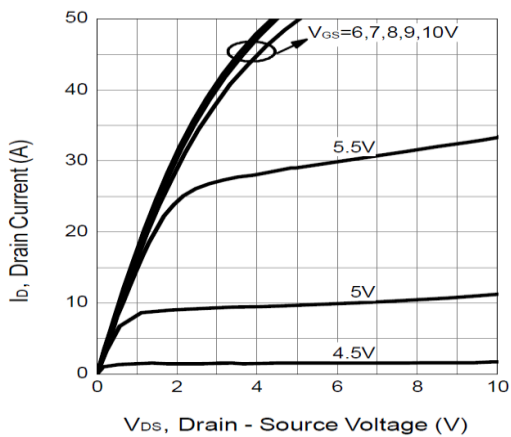
3. Safe Operation Area



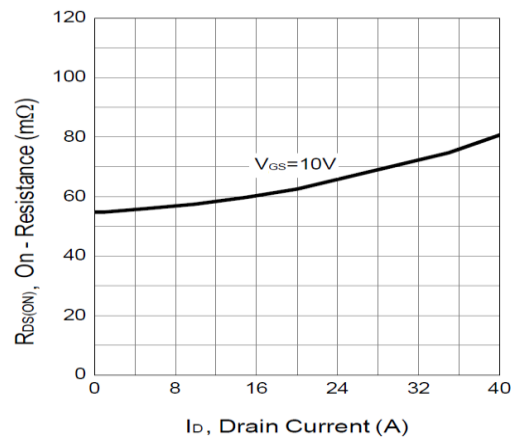
4. Thermal Transient Impedance



5. Output Characteristics

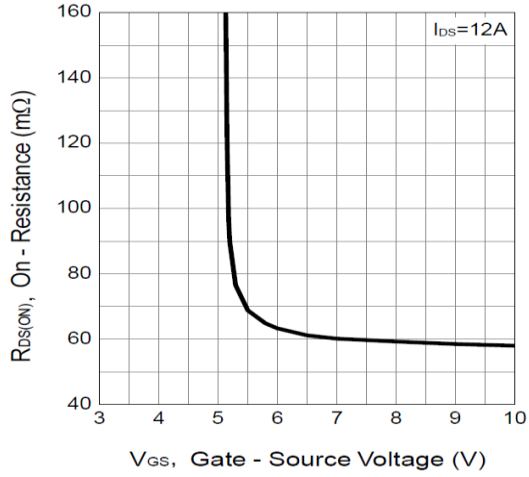


6. Drain-Source On Resistance

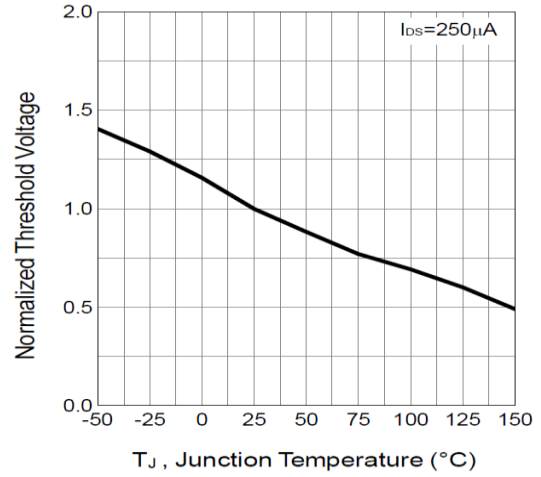




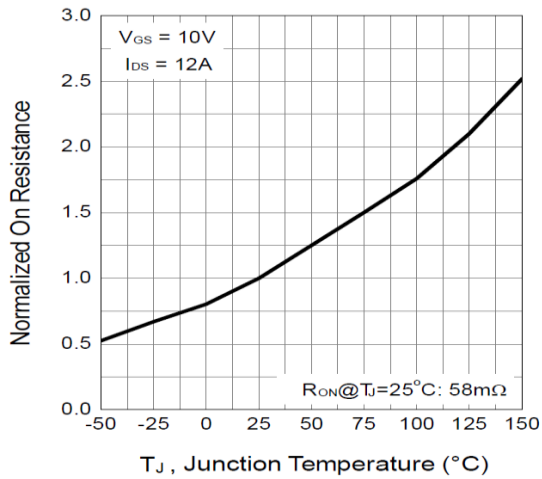
7. Gate-Source On Resistance



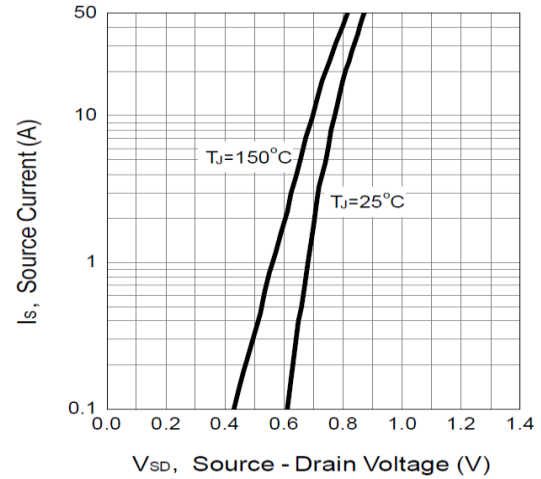
8. Gate Threshold Voltage



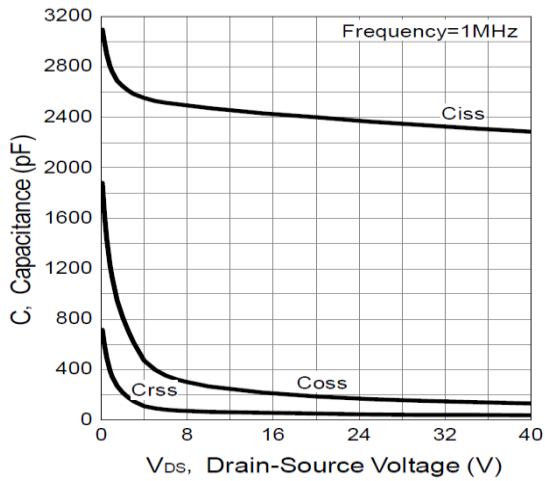
9. Drain-Source On Resistance



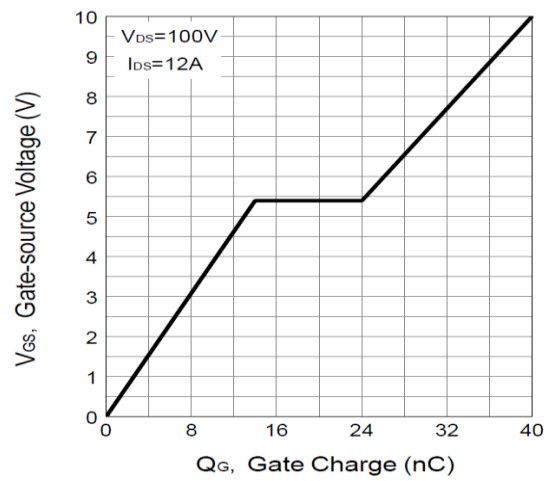
10. Source-Drain Diode Forward



11. Capacitance

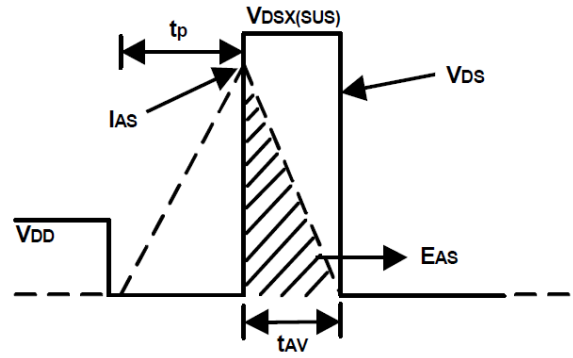
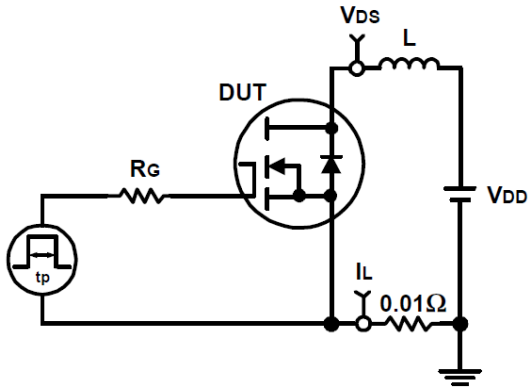


12. Gate Charge

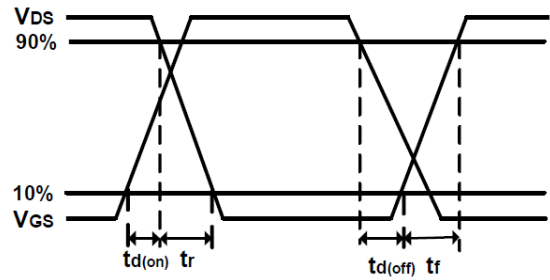
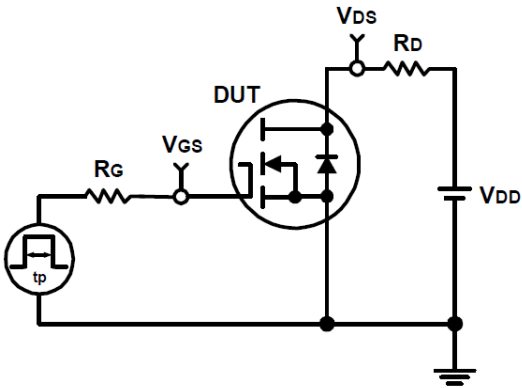




Avalanche Test Circuit and Waveforms



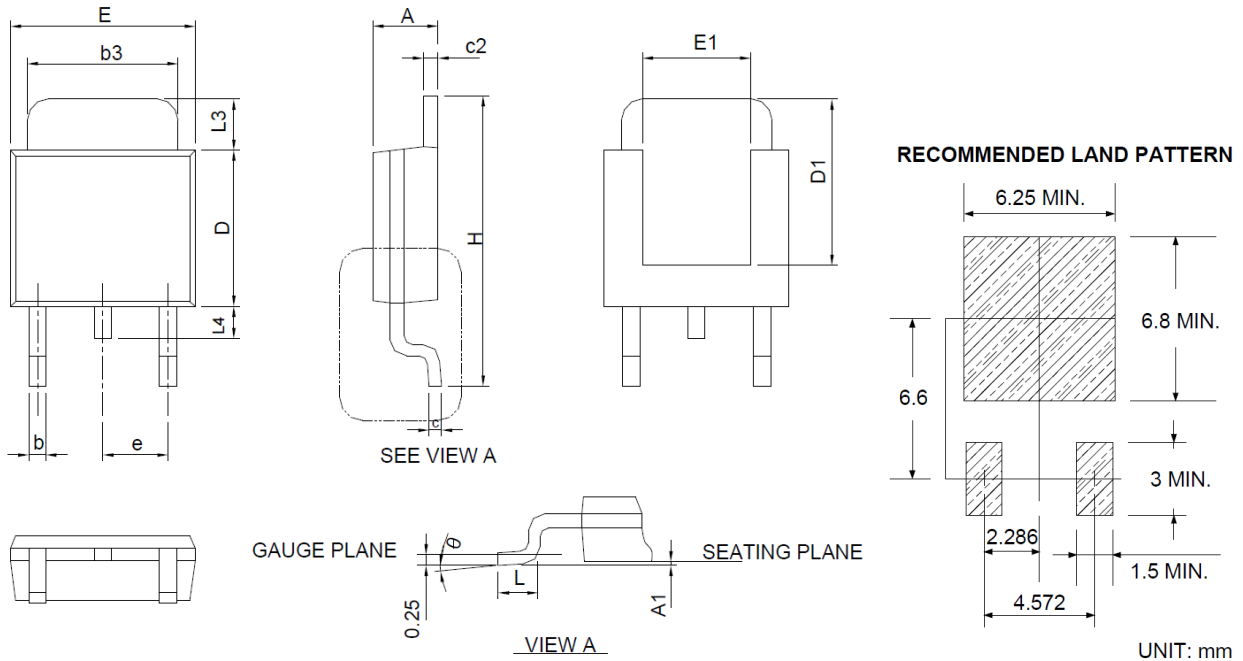
Switching Time Test Circuit and Waveforms





PACKAGE INFORMATION

Dimension in TO-252 (Unit: mm)



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	2.18	2.39	0.086	0.094
A1	-	0.13	-	0.005
b	0.50	0.89	0.020	0.035
b3	4.95	5.46	0.195	0.215
c	0.46	0.61	0.018	0.024
c2	0.46	0.89	0.018	0.035
D	5.33	6.22	0.210	0.245
D1	4.57	6.00	0.180	0.236
E	6.35	6.73	0.250	0.265
E1	3.81	6.00	0.150	0.236
e	2.29 BSC		0.090 BSC	
H	9.40	10.41	0.370	0.410
L	0.90	1.78	0.035	0.070
L3	0.89	2.03	0.035	0.080
L4	-	1.02	-	0.040
θ	0°	8°	0°	8°



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